Year 4 – MEDS 2013

CLINICAL SCIENCE ELECTIVES HANDBOOK

2012 – 2013

Undergraduate Medical Education

Schulich School of Medicine & Dentistry

The University of Western Ontario

November 2011

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YEAR 4 CLINICAL ELECTIVE CONTACTS

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CLINICAL DEPARTMENTS (LONDON)

DEPARTMENT	ACAD COORD	ADMIN COORD	LOCATION	EMAIL
Anaesthesia	Dr. Ivan Iglesias x35737	Linda Szabo x33283	LHSC-UH LHSC-UH, Rm. B3-218	ivan.iglesias@lhsc.on.ca linda.szabo@lhsc.on.ca
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CLINICAL DEPARTMENTS (WINDSOR)

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WRH – Windsor Regional Hospital – Western Campus – 1453 Prince Road, Windsor; Met Campus – 1995 Lens Ave., Windsor HDGH – Hotel Dieu Grace Hospital – 1030 Ouellette Ave., Windsor				

INTRODUCTION

The Year 4 Clinical Science Electives (Medicine 5401) program at Western provides students with the opportunity to study an area of interest in great depth and fill in personal knowledge gaps through a self-directed program. Each student is responsible for creating his/her individual program that meets the student's academic and personal needs. It is essential that you read the following pages carefully to familiarize yourself with the rules so that you receive credit for your electives. If you have questions regarding the content and quality of electives, or wish to discuss the selection of certain electives as they relate to career goals, you may make an appointment to speak with Dr. Robby Stein through the Undergraduate Medical Education Office.

Clinical Science Electives Overview

- The Clinical Science Electives program is a 16-week program divided into eight blocks, each block being two weeks in duration.
- All or some of the elective time may be spent in electives offered at Schulich or at other approved institutions in Canada or other countries.
- Electives may be in a basic science or clinical area but must be in a medical setting.
- Department offers either two or four week blocks at their discretion.

Electives Timetable

BLOCK 1	Sept. 4 – Sept. 16, 2012
BLOCK 2	Sept. 17 – Sept. 30, 2012
BLOCK 3	Oct. 1 – Oct. 14, 2012
BLOCK 4	Oct. 15 – Oct. 28, 2012
BLOCK 5	Oct. 29 – Nov. 11, 2012
BLOCK 6	Nov. 12 – Nov. 25, 2012
BLOCK 7	Nov. 26 – Dec. 9, 2012
BLOCK 8	Dec. 10 – Dec. 21, 2012

Electives end at 6:00 p.m. on the last Friday of the block. The weekend is for travel to the next elective location, which would start on Monday morning. In the event of a holiday Monday, the new block will start on Tuesday morning.

It is ***MANDATORY*** that you submit your final Clinical Science Electives program for approval by the deadlines noted in this handbook. ***ALL ELECTIVES MUST BE APPROVED BEFORE STARTING.***

Vacation

December 22, 2012 – January 6, 2013

Deadline to Submit Electives for Approval

June 25, 2012

(*Academic credit will not be given for electives not submitted by the approval dates.)*

UNDERGRADUATE MEDICAL CURRICULUM COMPETENCIES

- **These competencies apply to all clinical science electives**.

1.0 Medical Expert

Establish knowledge, skills and attitudes appropriate to medicine.

1.1. Demonstrate knowledge, appropriate to an undifferentiated physician, of normal human structure, function and development from a biomedical, clinical and socio-behavioural perspective.
1.2. Demonstrate knowledge, appropriate to an undifferentiated physician, of abnormal human structure, function and development from a biomedical, clinical and socio-behavioural perspective.
1.3. Develop knowledge of medical vocabulary, facts, concepts, principles, laws, methods, and procedures.
1.4. Describe the principles of quality care and patient safety in clinical practice through integration of available best evidence and best practices.

Perform a complete and appropriate assessment of a patient.

1.5 Effectively identify and explore issues to be addressed in a patient encounter, including the patient's context and preferences.
1.6 For the purposes of disease prevention and health promotion, diagnosis and/ or management, elicit a history that is relevant, concise and accurate to context and preferences.
1.7 For the purposes of disease prevention and health promotion, diagnosis and/or management, perform a focused physical examination that is relevant and accurate.

Demonstrate proficient and appropriate skills in the use of diagnostic and therapeutic interventions.

1.8 Describe effective, appropriate, and timely performance of diagnostic procedures.
1.9 Develop an effective patient-centred management plan.
1.10 Describe effective, appropriate, and timely application of preventive diagnostic and therapeutic interventions.
1.11 Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems and generate differential diagnoses and management plans.

2.0 Communicator

Develop rapport, trust, and ethical therapeutic relationships with patients and families.

2.1. Identify good communication as a core physician skill, and that effective physician-patient communication can foster patient satisfaction, physician satisfaction and improved clinical outcomes.
2.2. Establish positive therapeutic relationships, characterized by understanding, trust, respect, honesty and empathy, with patients and their families.
2.3. Respect patient confidentiality and privacy.

Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals.

2.4. Gather relevant information about a disease, but also about a patient's beliefs, concerns, expectations and illness experience.
2.5. Seek out and synthesize relevant information from other sources, such as a patient's family, caregivers and other professionals.

Develop a common understanding on issues, problems and plans with patients, families, and other professionals to develop a shared plan of care.

2.6. Effectively identify and explore problems to be addressed from a patient encounter, including the patient's context, responses, concerns, and preferences.

2.7. Respect diversity and difference in shared decision-making including, but not limited to, the impact of gender, religion and cultural belief.
2.8. Engage patients, families, and relevant health professionals in shared decision-making to develop a plan of care.
2.9. Effectively address challenging communication issues such as obtaining informed consent, delivering bad news, and addressing anger, confusion and misunderstanding.
2.10. Deliver information to a patient and family, colleagues and other professionals in a humane manner and in such a way that it is understandable, and encourages discussion and participation in decision-making.

Convey effective oral and written information about a medical encounter.

2.11. Maintain clear, accurate, and appropriate records (i.e., written or electronic) of clinical encounters and plans.
2.12. Effectively present verbal reports of clinical encounters and plans.

3.0 Collaborator

Participate effectively and appropriately in an interprofessional healthcare team.

3.1 Work effectively with patients and families.
3.2 Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflict.
3.3 Recognize and respect the diversity of roles, responsibilities and competencies of other professionals in relation to one's own.
3.4 Work with others to assess, plan, provide and integrate care for individual patients (or groups of patients) and review other tasks, such as research problems and educational work.

Contribute to a positive working environment with colleagues and other members of the health care team.

3.5 Recognize interpersonal differences, misunderstandings and limitations that may contribute to interprofessional tension.
3.6 Contribute to the working relationships on teams and participate in a collegial process to maximize the effective functioning of individuals and the team.

4.0 Manager

Contribute to the effectiveness of the healthcare system.

4.1 Describe the structure and function of the healthcare system.
4.2 Describe and access community resources and health care services.
4.3 Access and manage appropriate resources for learning and patient care.
4.4 Develop the skills required to make ethical decisions for the allocation of finite health care resources.
4.5 Participate effectively in committees and meetings.
4.6 Describe and participate in quality assurance initiatives.

5.0 Health Advocate

Advance the health and well-being of individual patients, communities and populations.

5.1 Use health-related knowledge and skills to contribute to community well-being.
5.2 Identify opportunities for advocacy, health promotion, disease prevention and health care quality improvement in the community, and respond appropriately.
5.3 Identify the legal rights and responsibilities of physicians to the community and to patients.
5.4 Identify moral and ethical responsibilities of physicians to the community and to patients.
5.5 Describe determinants of health and explain their role in individual and community well being.

6.0 Scholar

Develop skills in life-long learning.

6.1 Identify areas of deficiency in one's personal knowledge or skills.
6.2 Identify appropriate educational resources to address knowledge or skill deficiencies.
6.3 Evaluate personal learning progress using appropriate tools.
6.4 Develop the self-knowledge necessary for personal growth.
6.5 Apply newly gained knowledge or skills to the care of patients.
6.6 Demonstrate skill in disseminating knowledge within the medical and scientific communities and the community.

Critically evaluate medical information and its sources, and apply this appropriately.

6.7 Determine the validity and applicability of published evidence through critical appraisal.
6.8 Demonstrate a proclivity towards curiosity and humility, and the ability to question in the face of the unknown.

Contribute to the creation, dissemination, application and translation of new knowledge and practices.

6.9 Demonstrate skill in the use of the scientific method to further understanding of human health, disease and illness.
6.10 Attain familiarity with basic scientific and translational research and demonstrate how its results can be applied to clinical medicine.
6.11 Adhere to the principles of ethical research.

7.0 Professional

Demonstrate commitment to one's teachers, classmates, patients, the profession and society through ethical behaviour.

7.1 Demonstrate and practice the Four Pillars of Professionalism: Altruism, Integrity, Responsibility and Respect.
7.2 Recognize and respond appropriately to ethical issues.
7.3 Maintain appropriate professional boundaries.
7.4 Appropriately identify and manage conflicts of interest.

Demonstrate social accountability through a commitment to one's colleagues, patients, the profession and society.

7.5 Abide by the professional, legal and ethical codes of practice.
7.6 Respond appropriately to the diverse needs of individuals and communities served.
7.7 Recognize and respond appropriately to the unprofessional behaviour of others.

Demonstrate a commitment to personal health, balancing the goal of excellence in education with a sustainable work ethic.

7.8 Balance personal and professional priorities to ensure personal health, successful education and proficient service.
7.9 Strive to heighten personal and professional awareness and insight.
7.10 Demonstrate knowledge of obligations, resources and options for care in the event that they identify impairment in themselves or colleagues.

Demonstrate a commitment to reflective practice.

7.11 Develop skills in self-reflection, and an understanding of how one's biases, attitudes and feelings impact self-learning and service.
7.12 Demonstrate the ability to gather information about personal performance, to know one's own limits, and to seek help appropriately.
7.13 Reflect on events, especially critical incidents, to deepen self-knowledge.

GENERAL REGULATIONS

Clerkship Rotation Failure

- Students who fail a clerkship rotation and are granted remediation will be required to complete their remediation during the Clinical Science Electives time period, before beginning 4th year electives.
- Students in this situation must consult with the UME office before planning any electives.

Clinical Science Electives

- In order to pass the course, a student must satisfactorily complete all 8 blocks (16 weeks).
- If a student fails the Clinical Science Electives period, remedial work may be permitted.
- The student is expected to be present at a Clinical Elective every day during each elective block (see also the Absence section).
- Electives end at 6:00 p.m. on the last Friday of the block. The weekend is for travel to the next elective location, which would start on Monday morning. In the event of a holiday Monday, the new block will start on Tuesday morning.
- Electives may be 2, 3 or 4 weeks in length subject to departmental availability.
- Students are NOT permitted to take Clinical Science Electives under the supervision of a relative.

Travel Time

- The only travel time permitted is the weekend between the end of one block and the start of the next block.

Attendance

- The student is expected to attend according to the schedule set by the supervisor, including call duty, rounds, etc. for the full period of the elective.
-
- The supervisor should ensure that the student is notified of any changes to the schedule.
- Reasonable absences by the student may be permitted at the discretion of the supervisor as follows:

    - Up to 3 days for personal commitments of the student.
    - Up to 1 week (maximum of 5 days within the 16 week period) for medical or compassionate reasons with the approval of Dr. Chan, Assistant Dean, Students Affairs Office; in Windsor, Mike Farquhar, Student Affairs Officer.

- You may contact the Admissions/Student & Equity Affairs Office at 519-661-3744 (London) to make an appointment to see Dr. Rieder (mrieder@uwo.ca); or 519-253-3000, ext. 4302 (Windsor) to make an appointment to see Mike Farquhar (mfarquha@uwindsor.ca).
- Absences must be noted on the evaluation form and will result in a grade of Fail or Incomplete, unless the student can demonstrate exceptional circumstances to the satisfaction of the Undergraduate Medical Education Office.
- Students are asked to direct any requests for special accommodation to the appropriate elective section coordinator well in advance of the start of the affected elective, so that student/faculty needs may be addressed appropriately.
- Students should be aware that it is not possible to accommodate requests made on short notice.

Counselling

- Dr. Michael Rieder, Assistant Dean, Student Affairs is available for personal counseling and discussion of problems of any nature (e.g. school pressures, study schedules, relationship difficulties, family troubles, stress, drug or alcohol abuse, grief, depression, and financial problems, etc.). If referral to another professional is required, Dr. Rieder will assist in the arrangements. You can make an appointment to see Dr. Rieder by contacting the Admissions & Student Affairs Office in Kresge Building, Room K1, or by telephone at 519-661-3744.
- Dr. Terri Paul, Associate Dean, Equity and Gender Issues, and Faculty Health, is available for personal counselling and discussion of many problems related to gender and equity issues. Dr. Paul can be reached at 519-661-2111, ext. 88780 or email: terri.paul@schulich.uwo.ca.
- Ms. Pam Bere, Manager of the Admissions & Student Affairs Office, can also be contacted and is available to assist students. No appointment is necessary. Pam is located in the Kresge Building, Room K1 or Mike Farquhar in Windsor at 519-253-3000, ext. 4302.

MEDICAL/LEGAL RESPONSIBILITIES

Malpractice/Liability Insurance

- Students taking approved electives are covered by Western malpractice/liability insurance.
- Students with unapproved or informal elective arrangements are not covered. This puts the student and their preceptor at risk.
- This policy names Western students as additional insured's if they are located in an approved clinical location as students, with certain exclusions.
- For example, you would not be covered if it could be shown that you were under the influence of alcohol or drugs while acting in a health care setting.

Health Insurance

- Because your health insurance does not fully cover you when outside the country, it is strongly recommended that you obtain coverage through an appropriate agency if you are going outside of Canada.

International Travel

- Immigration laws in other countries may require you to complete an application for temporary entry into that country as a student/trainee.
- You may be required to have a complete medical examination along with immunizations and x-rays. It is your responsibility to ensure that all necessary paper work, passports, or other travel documents are in order.
- It is your responsibility to contact the Canadian representatives at the Consulate of the country in which you intend to study to determine what is required.

Police Records Check/Vulnerable Sector Screening Policy

- The Schulich School of Medicine and Dentistry requires that students provide, as a condition of admission into the medical program, a current Police Records Check and a Vulnerable Sector (Position) Screening. More recent police checks may be a requirement at other universities where you will be a visiting elective student.

For complete information, please go to:
http://www.rcmp-grc.gc.ca/cr-cj/fing-empr2-eng.htm

- A "Criminal Record Disclosure and Consent Form" must be completed and signed as part of the registration process each year and returned to the Admissions & Student Affairs Office.

OTHER POLICIES/GENERAL INFORMATION

Accessing London Hospitals

St. Joseph's Health Care and London Health Sciences Centre are multi-site facilities. This list will help you familiarize yourself with the site names. Maps to, and of, the sites are available on the hospitals' intranet sites.

St. Joseph's Health Care London (SJHC)

- St. Joseph's Hospital (SJH)
  268 Grosvenor Street, London
- Parkwood Hospital
  801 Commissioners Rd., E. London
- Regional Mental Health Care – London
  850 Highbury Ave, London
- Regional Mental Health Care – St. Thomas
  467 Sunset Dr., St. Thomas
- Mt Hope Centre for Long Term Care
  21 Grosvenor St., London

London Health Sciences Centre (LHSC)

- Victoria Hospital (VH)
  800 Commissioners Rd., E. London
- University Hospital (UH)
  339 Windermere Rd., London
- South Street Hospital (SSH)
  375 South St., London
- Byron Family Medical Centre
  1228 Commissioners Rd., W., London
- Victoria Family Medical Centre
  60 Chesley Ave., London

Wayfinding System at LHSC & SJHC

LHSC and SJHC have installed a wayfinding system at University, Victoria and St. Joseph's Hospitals that was designed with the first-time visitor in mind. The signs will guide patients and visitors from outside to their desired destination.

In order to help you find your way through buildings, each site has been divided into zones. Each zone will be recognized with these features: a letter, a colour, and a graphic. All the rooms at UH, VH and SJH will have a 5-digit identifier. The first digit is a letter and identifies the zone the room is in. The second digit refers to the floor level. The final three digits refer to the room series. Room signs will not indicate the hospital – both UH and VH may have the same room number so it important that you know to which hospital you are going in order to find your desired destination.

For more information about the wayfinding system at LHSC visit the LHSC intranet site at: www.lhsc.on.ca/priv/wayfinding

For more information about the wayfinding system at SJHC visit the SJHC intranet site at: http://intra.sjhc.london.on.ca/refer/wayfinding.htm

Security

- London's hospitals are committed to the safety of all staff, including clerks, residents and fellows.
- Security escorts are available to walk you to your car anytime by calling:
    - LHSC UH x 32281
    - LHSC VH x 52281
    - SJHC x 44555
- Panic/crisis buttons are available in the tunnel linking St. Joseph's Hospital to Mount Hope.
- Fixed and portable panic/crisis buttons are also available in the emergency rooms.
- Please familiarize yourself with the Emergency Measures manual on the hospital intranet: www.lhsc.on.ca/priv/em/index.htm

Safety Tips

- When in doubt, call Security (see numbers above).
- When alone, be alert to your surroundings and attentive to the activities around you.
- If you notice someone suspicious, notify security and give an accurate description of the person. Keep close to the phone.
- LHSC Security does patrol the parking lot at shift changes. It is always a good idea to use a "buddy system".
- Any incidents of violence, potential violence or criminal activity should be reported to Security immediately.

All emergencies should be reported immediately to ext 55555 – city-wide

Fire Response and Emergency Codes

Please complete the Fire Response and Evacuation Self-Learning Module called the "Fire Safety Program for Employees of Care and Treatment Occupancies" produced by the Fire Marshall's Public Fire Safety Council. It can be found at www.lhsc.on.ca/priv/fire/fireresp/slp1.htm

"REACT" Info for fire alarm response:

- **R**emove persons from immediate danger
- **E**nsure that all windows and doors are closed
- **A**ctivate the fire alarm by using the nearest pull station
- **C**all 55555, give location and type of fire – repeat twice
- **T**ry to fight the fire using the proper type of extinguisher, until help arrives.

Information for emergency response:

For UH and VH, phone 55555, state the nature of the emergency and provide the location as follows:

- Hospital
- Zone
- Floor
- Room Number
- Department

When UH and VH locations are announced over public address, the phonetic alphabet will be used to assist with recognition of the letter announced:

- A = Alpha
- B = Beta
- C = Charlie
- D = Delta
- E = Echo

An example of an overhead announcement, then, would be:

- Code Red
- University Hospital
- Zone A, Alpha
- Level 5, Room A5-123
- Department (if applicable)

For LHSC South Street Hospital and St. Joseph's Hospital, state the nature of the emergency and provide location as follows:

- Hospital
- Floor
- Wing
- Room Number
- Department

Emergency Codes for LHSC & SJHC:

Cardiac Arrest:	Code Blue
Fire:	Code Red
Evacuation:	Code Green
Violent Person:	Code White
Bomb Threat:	Code Black
Hazardous Chemical Spill:	Code Brown
External Air Exclusion:	Code Grey
External Disaster:	Code Orange
Missing Patient:	Code Yellow
Severe Weather:	Code Purple
Paediatric Cardiac Arrest:	Code Pink

Scrub Suit Distribution

- LHSC scrub suits are dispensed using the ScrubEX dispensing system. The intent of the dispensing system is to ensure all authorized users can access scrubs 24 hours a day, 7 days a week.
- The dispensing system is activated by using an access card that is issued to the user (see below).
- Instructions on how to use the dispensing equipment are located on each machine.
- Please ensure you follow the correct procedure for getting new scrubs and bringing soiled ones back.

Location of Dispensing Machines (LHSC)

University Hospital – A scrub dispensing machine is located in the Operating Room corridor on the second floor and by Radiology located on the second floor. Students will normally be given access to the machine located by Radiology.

Victoria Hospital – A scrub dispensing machine is located in the Operating Room and in the MRI corridor located on the first floor. Students will normally be given access to the machine located in the MRI corridor.

Obtaining a Scrub Suit Access Card

- Clerks will bring the authorized Scrub Suit Request form (provided in UME Office) to the Business Office at UH (B1-110) or the Cashier's Office at VIC (D3-400) and pay a $20 per set deposit.
- Clerks will take the receipt and the form to the Linen Room at University Hospital or Victoria Hospital during normal dispensing times (see below) where a scrub card will be issued.
- Without a completed form, the linen room staff will not be able to issue a scrub card.
- Two sets of scrubs are recommended.

Linen Room Hours

University Hospital	0730-0830 and 1300-1345
Victoria Hospital	0730-0900 and 1300-1400

- Scrub suits are used in hospital settings as a protection to the patient as well as the employee.
- To ensure we continue to treat scrubs as more than a "uniform" they are not to be worn outside the building while coming to the hospital or going home at the end of the day.
- The scrubs are identified with "Property of GK". This will allow the LHSC to differentiate the garments from the previous supplier. These are the only scrubs that will be acceptable to wear. All other garments will be considered stolen property and will be treated as such.

Scrub Suit Distribution at SJHC

- While you are a clerk at SJHC and using the surgeon's green scrubs you will be charged a deposit fee of $50.
- The deposit fee can be in the form of a cheque, money order or credit card and a receipt will be issued to you. Please make your payment at the St. Joseph's Business Office, Room B0-068
- Once your payment has been made, please bring your receipt to the Customer Support Centre, Room E0-105 where you will be required to fill out a form to receive your access card for the ScrubEx dispensing machine.
- At the end of your clerkship and your scrubs are found in the system, you will be fully reimbursed your deposit fee.
- If there are scrubs missing, you will be reimbursed only for the sets found in the system.
- The hours of operation are Monday – Friday, 0800-1600.

Dictation System – LHSC and SJHC

This dictation system is provided to you for the clinical documentation of the patient record required for each hospital visit. Follow-up letters, i.e., to the Ministry of Transport, To Whom It May Concern, evaluations, referral requests, etc, are administrative correspondence and consequently are outside of Health Records responsibility for processing.

You must have your own personal and confidential dictating User ID number. Please call LHSC ext 35131 or SJHC ext 65584 to obtain your dictating number. These numbers must remain confidential and not shared with others. You can use your dictating number at all sites across the city.

Dictating Instructions:

1. Dial extension **66080** or **519-646-6080** from outside the hospital
2. Enter your 5-digit User ID number
3. OPTIONALLY you may be prompted for a Profile ID followed by **#** key:
   1 if dictating at RMH **2** for all other sites

4. Enter the hospital site code followed by the **#** key (It is important to select the correct site code to ensure that your note posts correctly in PowerChart):
   1 University Hospital
   2 Victoria Hospital
   3 St. Joseph's Hospital
   4 Parkwood Hospital
   5 LRCP
   6 RMHC – London
   7 RMHC – St. Thomas
5. Enter the worktype followed by the **#** key (It is important to select the correct site code to ensure that your note posts correctly in PowerChart)
6. OPTIONALLY you may be prompted for a RMH Unit (if you entered 1 for the Profile ED in step 3) followed by the # key:

1 Assessment-L	**2** Assessment-S	**3** Mood&Anx-L
4 Mood&Anx-S	**5** Psychosis-L	**6** Psychosis-S
7 Geriatric-L	**8** Adolescent-L	**9** DDP-L
10 Concurrent Dis-L	**11** Forensics-S	

Note: It is important to select the correct worktype to ensure that your note posts correctly in PowerChart.

City-Wide Worktypes

30 Preadmission Clinic Note
31 History and Physical
32 Operative Report
33 Discharge Summary
34 Consultation
35 Emergency Room Report
36 Delivery Report
37 Progress Note
38 Admission Note
39 Procedure Report (performed in Clinic)
40 Death Summary
41 Telephone Correspondence Note

Site Specific Worktypes – University Hospital / Victoria Hospital

80 Clinic Report
81 Adult Psychiatry Note
82 Child/Adolescent Psychiatry
83 Women's Health Clinic Note
84 Trauma Resuscitation Note

85 Trauma Clinic Note
86 Speech Language Pathology Note
87 Urgent Neurology Clinic Note
88 John K. Kreeft Headache Clinic
89 General Medicine Clinic Note
90 Geriatric Mental Health
91 TIA Clinic Note
92 Thoracic Surgery Clinic Note
93 In-Hospital Transfer Note

Site Specific Worktypes – St. Joseph's Hospital
42 SJH Clinic Note
43 HULC Clinic Note
44 OB/GYN Clinic Note

Site Specific Worktypes – Parkwood Hospital
50 Parkwood Clinic Note
51 Day Hospital Note
52 Psychology Note

Site Specific Worktypes – London Regional Cancer Program (LRCP)
70 Radiation Treatment
71 Letter
72 Social Work
73 GYN Snap Shot
74 Ovarian Progress
75 LRCP Clinic Note

Site Specific Worktypes – Regional Mental Health Care (RMHC) – London and St. Thomas
60 Assessment Report
61 Review Board Summary
62 Miscellaneous Note
63 RMHC Clinic Note
64 Letters (does not post to PowerChart)

7. Enter the PIN (Medical Record Number) followed by **#** key
8. Enter **2** to begin dictation: Dictate and spell patient's name, PIN, your name and required copies (indicate address for out-of-town providers).

KeyPad Functions
2 To begin or resume dictating
3 To replay dictation
4 Continuous forward
44 Fast forward to end of report
5 To end last report and dictation session
6 Priority dictation (Use only for dictation that requires immediate transcription, e.g., follow-up within 24-48 hours, patient being transferred to another facility, etc)
7 Continuous rewind
77 Go to beginning of dictation
8 Go to next report

0 To open / interrupt report that cannot be finished during the current dictation session. When beginning a new session and after entering the site code, you will hear "you have an open report". To retrieve it, enter **1** and continue to dictate. To ignore it, enter **2**.

Powerchart Access

Students who activated their account during their third year clerkship rotations in London will continue to access Powerchart using the same user names and passwords. Students on the Windsor campus who are planning to do electives in London will need to contact dawn.macdonald@schulich.uwo.ca to receive their user name and password.

EQUITY AND PROFESSIONALISM

The Schulich School of Medicine & Dentistry is committed to promoting an environment of respect and collegiality. Through training, students are expected to interact in a professional, ethical and collegial manner with fellow students, faculty, staff and patients. The day-to-day actions of faculty, students and staff are guided by Schulich Medicine & Dentistry's Four Pillars of Professionalism: Altruism, Integrity, Responsibility and Respect.

In 2002, the School developed and endorsed a Charter of Professionalism to serve as a set of guidelines for all students, faculty and staff. This document recognizes the traditional and often unwritten understandings of professionalism and outlines three fundamental principles of professionalism (Primacy of Patient Welfare, Patient Autonomy and Social Justice), upon which are built eleven responsibilities. In addition, the Schulich School of Medicine & Dentistry Code of Conduct for Teacher-Learner or Clinician-Trainee Relationships reinforces the requirement that all encounters among teachers and learners be carried out in a professional and ethical manner.

The Office of the Associate Dean, Equity and Gender Issues was created to:

a) Promote greater awareness and understanding of gender and equity issues within educational activities, research and the work environment of the Schulich School of Medicine & Dentistry.
b) Address gender or equity issues and respond to problems experienced in the teaching, learning and working environment by any student, trainee, faculty, or staff member. Discussions are held in strict confidence unless the person with the concerns consents to the information being shared (except where the situation discussed would require mandatory reporting, or when the situation is potentially dangerous).
c) Dr. Terri Paul, Associate Dean, Equity and Gender Issues, and Faculty Health, is available for personal counseling and discussion of many problems related to gender and equity issues. Dr. Paul can be reached at 519-661-2111 ext 88780, or email terri.paul@schulich.uwo.ca.

All students, trainees, faculty and staff at the Schulich School of Medicine & Dentistry are encouraged to bring forward any concerns about inappropriate behavior or comments, and such concerns will be taken seriously. The Associate Dean, Equity and Gender Issues, will work with parties involved to address issues.

There are a number of other resources to whom concerns can be reported:

- Admissions & Student Affairs Office
- Undergraduate Medical Education Office
- Course Coordinator / Manager
- Chair, Clerkship & Electives Committee
- Clinical Science Electives Program Director
- Department/Division Chair/Chief

- Windsor Program Admissions & Student Affairs

More information may be found at www.schulich.uwo.ca/equity

Other Helpful Links:
CMA (Canadian Medical Association) Code of Ethics: www.cma.ca
UWO Code of Conduct: www.uwo.ca/univsec/board/code.pdf

CATEGORIES OF ELECTIVES

Schulich Based Electives

- The majority of Schulich based electives are scheduled using an on-line registration lottery system.
- The lottery system was set up to give all students fair access to more popular placements.
- You must submit your ON-LINE requests by 11:59 p.m. on January 30, 2012. See instructions on page 29.

Electives in Ontario

- In Ontario, provincial regulations state that medical students may only engage in hospital-based electives if the hospital has an affiliation agreement with one of the six medical schools.
- A listing of all hospitals linked by an affiliation agreement to Western is available from the Undergraduate Medical Education Office.
- It is your responsibility to determine whether the hospital has an affiliation agreement with one of the Ontario medical schools by checking this list, or by contacting the administrator of the hospital in question.
- This regulation does not apply to students doing electives in a family physician's private office where students are under the direct supervision of the physician. In this situation the student may accompany the family physician on hospital rounds, as an "observer". The student may only observe and may not undertake medical work in a hospital without an affiliation agreement. There are NO exceptions to this rule. This means the student cannot attend patients in the emergency department or participate in surgery or deliveries etc.
- Students can arrange their own electives with any other family physician who is a Certificant of the College of Family Physicians of Canada (CCFP) OR a Member of the College of Family Physicians of Canada (CFPC).

SWOMEN RURAL REGIONAL ELECTIVES PROGRAM

Our SWOMEN Rural Regional Electives Program provides interesting clinical experiences in communities throughout Southwestern Ontario. Using a one-on-one preceptor-based model in environments with few or no other learners, our electives offer educational rotations with lots of hands-on learning and procedural skills. Electives offer opportunities to live in SWOMEN communities while developing your skills and knowledge.

Preceptors

SWOMEN preceptors are specialists in regional centers with community hospitals and medical centers including Sarnia, St. Thomas, Stratford, Chatham, and Owen Sound. All preceptors have faculty appointments with The University of Western Ontario and regularly teach clerkship and elective rotations. Our preceptors include specialists in: Anaesthesia, General Surgery, Emergency Medicine, Internal Medicine, Pathology, Psychiatry, Paediatrics and Obstetrics.

Requests for a Specific Community or Preceptor

If you know a preceptor with whom you would like to work, we will attempt to accommodate your request. Indicate your preference for a specific community or preceptor on your application, if applicable. The preceptor must hold an Adjunct Faculty appointment with Western. Contact Mary Peterson to find out if your potential elective qualifies for funding under our program.

Funding for Travel and Accommodation

Funding for travel and accommodation will be provided for 4-week electives in our SWOMEN communities. While it is recommended that you have a car, there are some communities where public transportation such as trains and buses is available.
We arrange accommodation if required, which can include hospital-owned apartments, billets, or bed and breakfast establishments. Accommodation may be shared with other learners.

We also coordinate 2-week electives with our SWOMEN preceptors and provide suggestions concerning potential accommodation. Although these electives do not qualify for funding for travel and accommodation, they provide interesting learning opportunities.

HOW DO I APPLY?

Application deadline: May 1, 2012
Applications are available on our website (www.swomen.ca). Students may apply for more than 1 elective in various disciplines and locations. Students will be contacted to confirm their application and preferred elective dates.

Late applications:
While applications will be accepted after the deadline, you are encouraged to apply by the deadline in order to accommodate your preferred elective dates.

For more information, check our website at www.swomen.ca or contact Mary Peterson by email at mary.peterson@schulich.uwo.ca or phone at 519-661-2111, ext. 86225.

Family Medicine

Please contact Kari McLennan to arrange an elective in Family Medicine in one of our SWOMEN communities (kari.mclennan@schulich.uwo.ca).

Other Rural Elective Locations in Ontario

- Rural family medicine programs – see Family Medicine section.
- Northern Ontario School of Medicine (NOSM) www.normed.ca (see Family Medicine).
- Rural Ontario Medical Program (ROMP) www.romponline.ca (see Family Medicine).
- Eastern Regional Medical Education Program (ERMEP) – see website www.ermep.com.

Electives in Other Provinces or Within the United States

- Students may arrange to take electives at a School of Medicine in a LCME/CACMS accredited medical school, its affiliated hospital, or affiliated physician's practice.
- If you are unsure of LCME accreditation, check with the Undergraduate Medical Education Office.
- It is the student's responsibility to provide evidence of University-Faculty of Medicine affiliation. A letter from the Elective Office of the university is required. Letters from the physician are not acceptable if the elective is completed in a hospital setting. Documentation must be submitted to the Undergraduate Medical Education Office.
- All persons, including US citizens, travelling by air between the US and Canada, Mexico, Central and South America, the Caribbean and Bermuda will be required to present a valid passport, Air Nexus card, or US Coast Guard Merchant Mariner document.

Electives in a Private Physician's Practice (i.e. Family Doctor)

- If you wish to do an elective with a physician who is not affiliated with a School of Medicine in Canada or the United States, you will be required to provide supporting documentation as to the educational validity of the experience.
- You must explain in writing why you should be permitted to complete an elective at an institution not affiliated with a School of Medicine.
- You are required to complete the "Fourth Year Electives – Learning Objectives" form (Appendix B) and submit to the UME Office prior to the start of the elective rotation. A copy of this form is to be signed at the completion of the elective by the preceptor of the rotation and then returned with the final assessment form to the UME Office.

Electives Not Affiliated to Canadian Universities

- All electives require learning objectives. As such, students arranging electives outside of university-approved electives are required to determine their own learning objectives. Students must submit these elective objectives for approval, along with their elective approval request. You are required to complete the "Fourth Year Electives – Learning Objectives" form (Appendix B) and submit to the UME Office as per instructions on the form.

Electives Outside Canada or the United States

- Electives may be arranged in countries other than Canada or the U.S., but keep in mind that these electives will require sufficient time to arrange and are subject to the following:
    - The elective must be at an institution affiliated with a University Faculty/School of Medicine;
    - It is recommended that students be fluent in the major language of the country.
- It is the student's responsibility to provide the request for approval, appropriate information regarding language fluency, and university affiliation for the planned leave.
- Electives in developing countries require approval from Dr. Shiva Kalidindi, Director of the Medical Electives Overseas Program: drshiva@gmail.ca.
- Students who are considering an overseas elective in resource-limited settings (MEOP, IFMSA) are required to attend a "Pre-departure Training Conference", which is arranged through the Global Health Education office (http://www.schulich.uwo.ca/globalhealth/index.php).
- Students are advised to consult with Dr. Kalidindi for preliminary planning well in advance of the anticipated elective date.
- Overseas electives are usually 6 to 8 weeks in duration.

Research Electives

- Research electives are outside the lottery.
- Research electives must be **four week** electives.
- Ordinarily students are restricted to **one** research elective.
- You **must submit a one page description** of the research for Dr. Stein's approval in advance of your elective. A letter from the research supervisor (which the student arranges) confirming the research elective dates and location must be submitted to Dr. Stein as well.
- During a research elective a student may be permitted to spend one day per week in a clinical setting.
- On completion of the research elective you must forward a copy of the deliverable (e.g. abstract, data form, ethics form, etc.) to the 4th Year Electives Administrator in the Undergraduate Medical Education Office.

STRATEGIES FOR CHOOSING ELECTIVES

Creating a Broadly-based Program

- In order to gain approval for your program, it must be broadly based.

- This is to ensure that you gain a broad range of experience and place an emphasis on areas that suit your personal strengths.

- In order for your program to be considered broadly based, you must have electives in a minimum of 3 CaRMS entry disciplines **plus** a maximum of 12 weeks of elective time in any one category, with the remaining 4 weeks in either one or both of the other two categories, listed on page (26).

- More variety in your choices is advisable.

- If you have had areas of weakness in clerkship, you will be counseled by Dr. Stein to address these within your elective block choices.

Elective Categories

1. Electives must be from a ***minimum of 3 different*** CaRMS entry disciplines.
2. Electives will be grouped in 3 categories (see below). Students may have a maximum of 12 weeks in any one category, with the remaining 4 weeks in either one or both of the other two categories.
3. Research will count towards the discipline in which the research is conducted.

Category 1

- Medicine: general and subspecialties
- Paediatrics: general and subspecialties
- Psychiatry
- Critical Care Medicine
- Clinical Neurological Sciences
- Medical Oncology
- PM&R
- Research

Category 2

- Surgery: general and subspecialties
- Obstetrics & Gynecology
- Anesthesiology
- Ophthalmology
- Surgical Intensive Care
- Research

Category 3

- Family Medicine
- Emergency Medicine
- Radiology
- Pathology
- Nuclear Medicine
- Laboratory Medicine
- Radiation Oncology

CaRMS Entry Disciplines

Anatomical Pathology
Anesthesiology
Cardiac Surgery
Community Medicine
Dermatology
Diagnostic Radiology
Emergency Medicine
Family Medicine
Family Medicine MOTP
General Pathology
General Surgery
Hematological Pathology
Internal Medicine
Laboratory Medicine
Medical Biochemistry
Medical Genetics
Medical Microbiology
Neurology
Neurology – Pediatric
Neuropathology
Neurosurgery
Nuclear Medicine
Obstetrics & Gynecology
Ophthalmology
Orthopedic Surgery
Otolaryngology
Pediatrics
Physical Med & Rehab
Plastic Surgery
Psychiatry
Radiation Oncology
Urology

Interviews for PGY-1 Positions

- Students may take the opportunity to have interviews with programs outside London during the designated CaRMS weeks (dates for 2011 to be advised).

- Should your interview be scheduled during an elective or Transitional Period classes, you must get permission from your elective supervisor or the transitional period coordinator.

Call Schedule

- In planning your program, you should understand that any requirements for call duty must be fulfilled.

- If you accept rotations with call *you will be required to do call*.

- It is your responsibility to integrate with the service that accepts you or to negotiate with the service directors about alternative arrangements well in advance.

Travel Time

- The only travel time permitted to and from Clinical Science Electives is the weekend between blocks.

Mail & Email

- It is ***strongly*** recommended that students, who will be out of town for an extended period of time, arrange for someone (perhaps a fellow classmate) to pick up mail from their student mailbox. This will help to avoid missing messages of an urgent or otherwise important nature.

- Please read your Email messages on a regular basis and ensure that your mailbox is always able to receive messages.

- It is important that you use your "Email for Life" address when you correspond with the UME office. Yahoo, gmail and hotmail email messages may not get through the system filters.

- The Undergraduate Office assumes no responsibility for students who miss deadlines because they have neglected to read their emails or make arrangements to have the mail picked up from their mailbox.

Students' Contact Number(s)

- It is very important for the Undergraduate Office to be able to reach you during your elective blocks. Please ensure you update your profile information on single sign on. This may be with regard to future electives, CaRMS match, grades, etc.

- Please be sure to be specific when adding external electives as to where you can be contacted, with specific address and phone number, either of the elective location or where you will be staying, for each elective.

REGISTERING FOR CLINICAL SCIENCE ELECTIVES

You will need to first decide whether you want to do your electives at Schulich, at other centers, or both. If you have demonstrated an academic weakness during clerkship, you will be asked to meet with Dr. Robby Stein, CEC Chair, to discuss your program. You will not be permitted to do an elective under the Medical Electives Overseas Program if you fall into this category. It is also wise to concentrate your electives at Schulich rather than going elsewhere, if there have been concerns related to your undergraduate performance by this point.

There are a number of steps to the registration process.

Electives Listed in the Clinical Science Electives Handbook

- For UWO based electives, you must complete the Clinical Elective Lottery Form online and submit it **before 11:59 p.m. on January 30, 2012**.

- Due to the limited number of positions in any department and hospital, a computerized lottery selection process is used to maximize every student's chance of getting electives of his/her choice. The lottery uses random numbers in combination with 'rank orders' to ensure all students get some of their elective choices. The rank order is adjusted based on the choice students are assigned, in order to ensure an even distribution among all students.

- The lottery will not give you the same elective more than once.

- Once the lottery is held, you will be informed which electives you received in the lottery.

- When a Department offers 2 or 4 week electives, and you obtain a 4 week elective in the lottery, the elective may be divided into 2 2-week blocks.

- You will be advised by email when your list is ready. It is then up to you to complete the arrangements for your remaining blocks, either by adding electives outside of Schulich, or adding/dropping Schulich electives.

- Please note the step-by-step instructions on the next page to assist you in entering Schulich elective choices for the lottery. It is very important to note the deadlines listed.

Electives Lottery Step-By-Step Procedure

Step	Action Required	Due Date (if applicable)
1	Go to https://www.schulich.uwo.ca/singlesignon (See Figure 1)	On-line registration opens for the Schulich lottery process at **11:59 p.m.** on **Thursday, November 17, 2011**
3	Select the "**Clinical Science Electives**" tab. A screen will appear with list of the blocks and their dates, a table indicating choice 1, 2, 3 up to 32, block and electives. Each block and elective has a drop box below it containing all the Schulich lottery electives available. Select the **"Elective Descriptions"** tab to get a brief description of the electives, their objectives and spaces available/block.	(See Figure 2) (See Figure 3)
4	Start by selecting the "**Block you want first then pick the elective**". A drop down menu will appear listing all Schulich lottery electives available (a Lottery Planning form is available for you at the back of your Electives Handbook). Please note the electives listed are London Hospital based electives only. You cannot register online for Rural electives, Windsor electives, Family Medicine, Pathology or Occupational Medicine electives. These electives must be arranged directly with the department or using a Rural Electives form. Ensure you are setting up your electives according to the criteria outlined in the Electives Handbook.	(See Figure 4)
5	**Select the elective** you wish to choose as your first choice then continue on to your second choice, third choice etc. and repeat the process with each one.	NOTE: Students should only pick 32 electives they want, as selecting 'any' 32 choices (just to fill in the choices) lessen their chances of getting the electives they really want.
6	Once you have selected your choices, be sure to click "**save selections"**. You may change your choices until the registration closing date. At this time and date your choices are considered to be final.	On-line lottery closes: January 30, 2012 @ 11:59 p.m.
	After the lottery runs you will be able to view your electives on line through single sign on.	
	The Add/Drop period starts at **11:59 p.m.** on …	**Tuesday, February 28, 2012**

Figure 1

Schulich School of Medicine & Dentistry, Single Sign-On - Windows Internet Explorer
http://develop1.med.uwo.ca/singlesignon/index.php
Schulich Medicine & Dentistry Single Sign-On
The University of Western Ontario
Email for Life | Web eVal | Search Engines |
About Single Sign-On
School News
Stronger Rwanda ties
Surgeon 'proud' to serve in Afghanistan
Men Needed!
Town Hall Meeting for Neuroscientists
Login to Single Sign-On
Welcome to Single Sign-On
Please login:
User ID
Password
Submit
Schulich
MEDICINE & DENTISTRY
About Single Sign-On
Help with this Form
Search
Single Sign-On
Request an Account
For Continuing Professional or Visiting Students
Forgot Password?
Enter your userID
Submit
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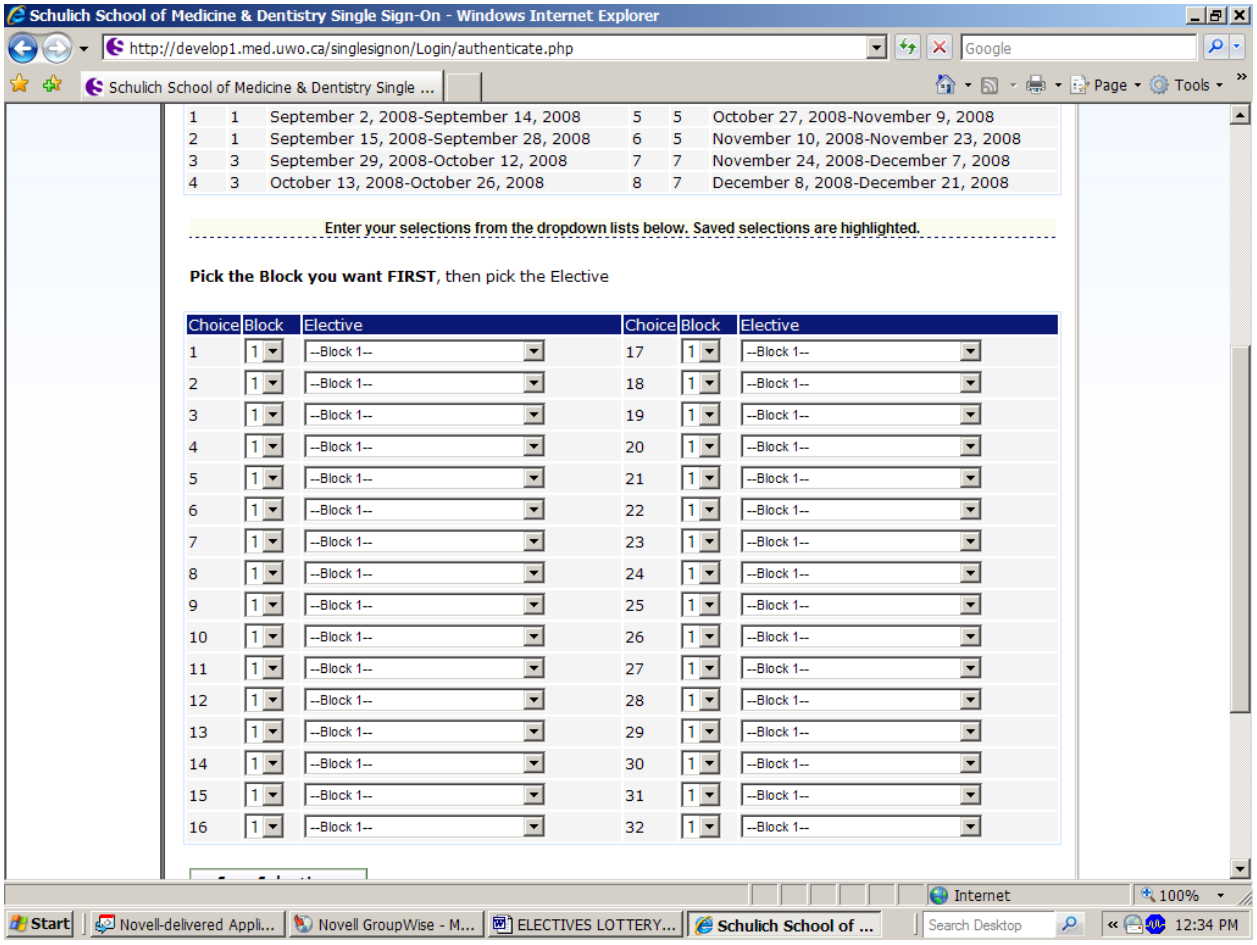
Figure 2


Schulich School of Medicine & Dentistry Single Sign-On - Windows Internet Explorer
http://develop1.med.uwo.ca/singlesignon/Login/authenticate.php
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1 1 September 2, 2008-September 14, 2008
2 1 September 15, 2008-September 28, 2008
3 3 September 29, 2008-October 12, 2008
4 3 October 13, 2008-October 26, 2008
5 5 October 27, 2008-November 9, 2008
6 5 November 10, 2008-November 23, 2008
7 7 November 24, 2008-December 7, 2008
8 7 December 8, 2008-December 21, 2008
Enter your selections from the dropdown lists below. Saved selections are highlighted.
Pick the Block you want FIRST, then pick the Elective
Choice Block Elective Choice Block Elective
--Block 1--
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Figure 3

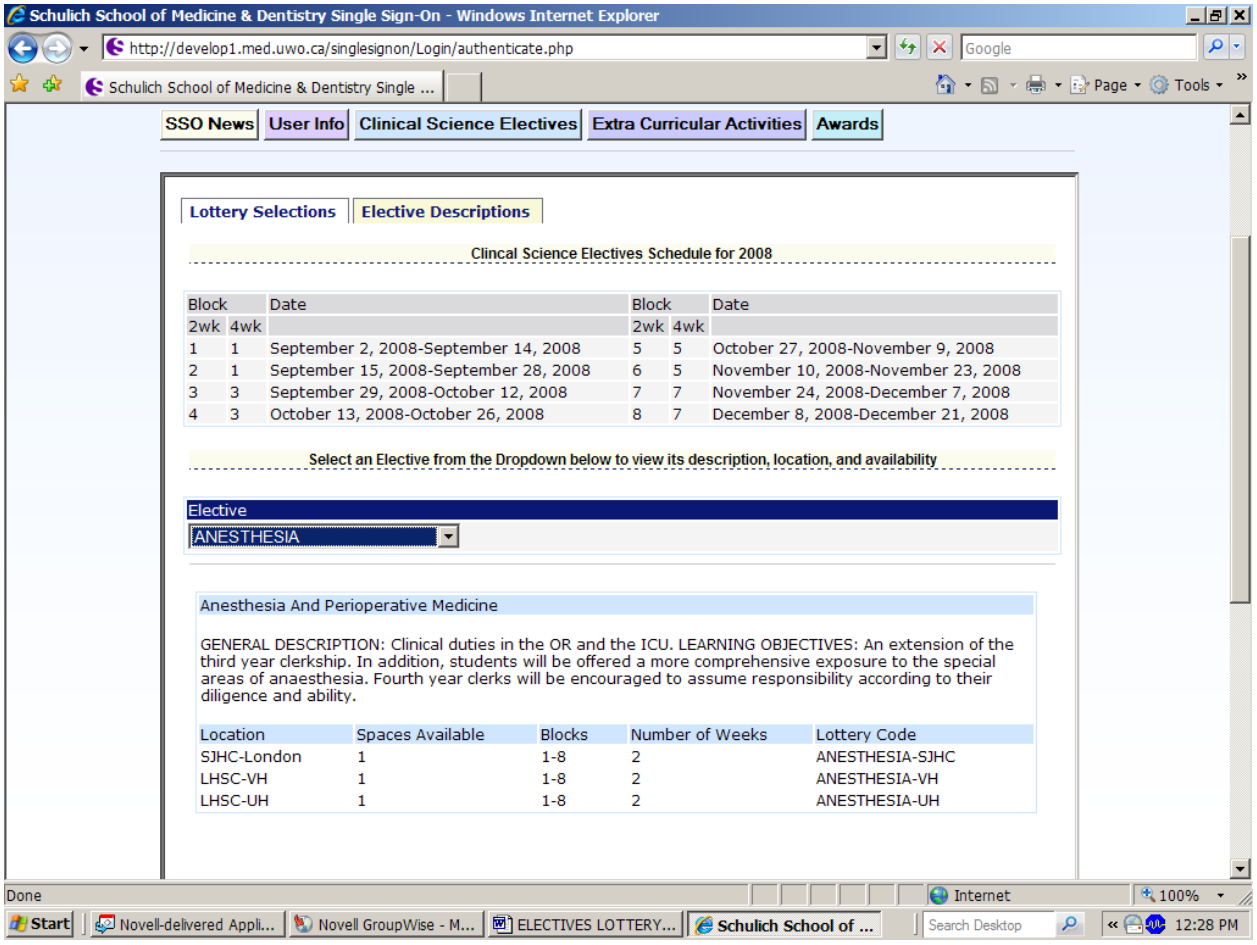
Schulich School of Medicine & Dentistry Single Sign-On - Windows Internet Explorer
http://develop1.med.uwo.ca/singlesignon/Login/authenticate.php
Schulich School of Medicine & Dentistry Single ...
SSO News
User Info
Clinical Science Electives
Extra Curricular Activities
Awards
Lottery Selections
Elective Descriptions
Clincal Science Electives Schedule for 2008
Block 2wk 4wk Date
1 1 September 2, 2008-September 14, 2008
2 1 September 15, 2008-September 28, 2008
3 3 September 29, 2008-October 12, 2008
4 3 October 13, 2008-October 26, 2008
Block 2wk 4wk Date
5 5 October 27, 2008-November 9, 2008
6 5 November 10, 2008-November 23, 2008
7 7 November 24, 2008-December 7, 2008
8 7 December 8, 2008-December 21, 2008
Select an Elective from the Dropdown below to view its description, location, and availability
Elective
ANESTHESIA
Anesthesia And Perioperative Medicine
GENERAL DESCRIPTION: Clinical duties in the OR and the ICU. LEARNING OBJECTIVES: An extension of the third year clerkship. In addition, students will be offered a more comprehensive exposure to the special areas of anaesthesia. Fourth year clerks will be encouraged to assume responsibility according to their diligence and ability.
Location Spaces Available Blocks Number of Weeks Lottery Code
SJHC-London 1 1-8 2 ANESTHESIA-SJHC
LHSC-VH 1 1-8 2 ANESTHESIA-VH
LHSC-UH 1 1-8 2 ANESTHESIA-UH
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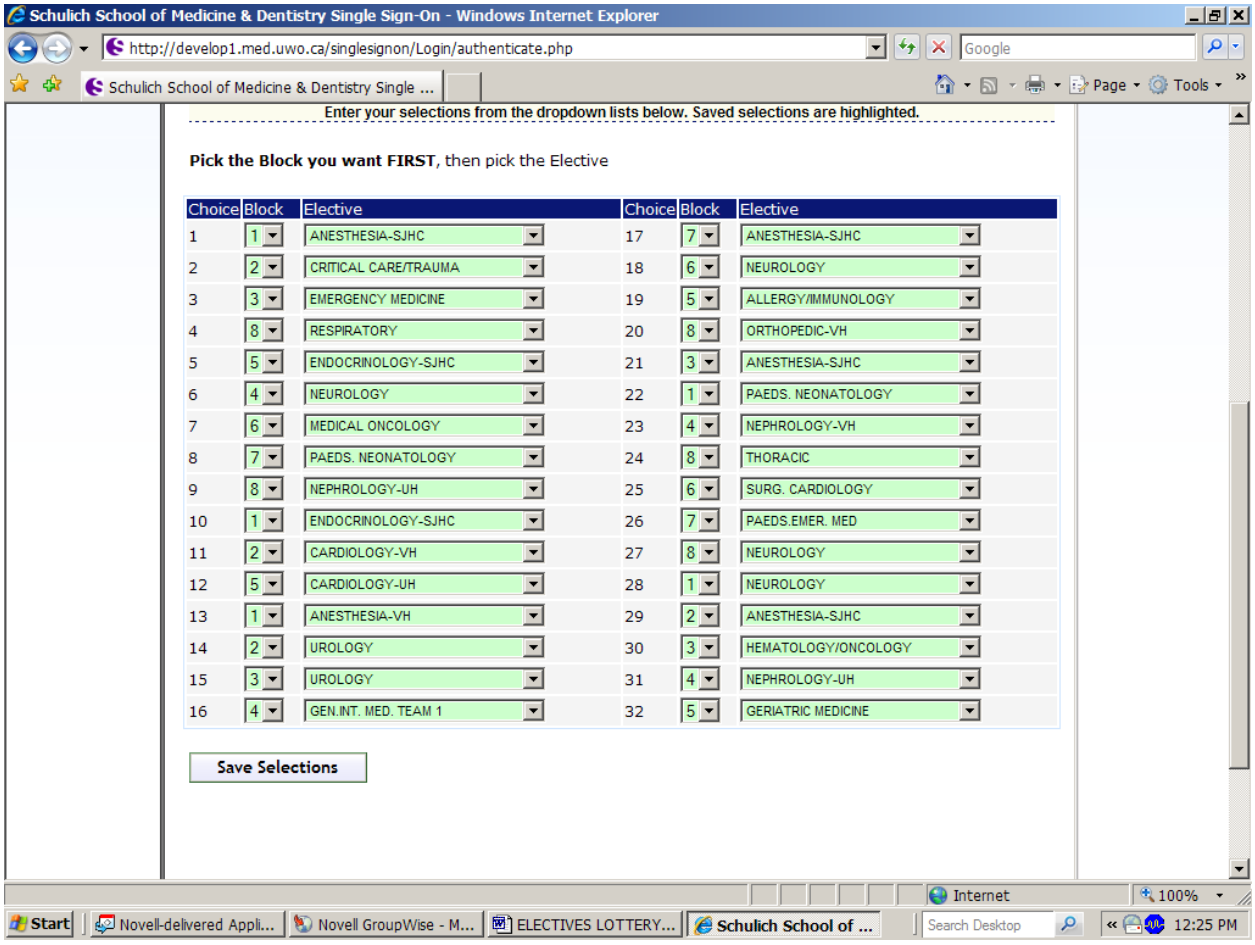
Figure 4


Schulich School of Medicine & Dentistry Single Sign-On - Windows Internet Explorer
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Enter your selections from the dropdown lists below. Saved selections are highlighted.
Pick the Block you want FIRST, then pick the Elective
Choice Block Elective Choice Block Elective
1 1 ANESTHESIA-SJHC 17 7 ANESTHESIA-SJHC
2 2 CRITICAL CARE/TRAUMA 18 6 NEUROLOGY
3 3 EMERGENCY MEDICINE 19 5 ALLERGY/IMMUNOLOGY
4 8 RESPIRATORY 20 8 ORTHOPEDIC-VH
5 5 ENDOCRINOLOGY-SJHC 21 3 ANESTHESIA-SJHC
6 4 NEUROLOGY 22 1 PAEDS. NEONATOLOGY
7 6 MEDICAL ONCOLOGY 23 4 NEPHROLOGY-VH
8 7 PAEDS. NEONATOLOGY 24 8 THORACIC
9 8 NEPHROLOGY-UH 25 6 SURG. CARDIOLOGY
10 1 ENDOCRINOLOGY-SJHC 26 7 PAEDS.EMER. MED
11 2 CARDIOLOGY-VH 27 8 NEUROLOGY
12 5 CARDIOLOGY-UH 28 1 NEUROLOGY
13 1 ANESTHESIA-VH 29 2 ANESTHESIA-SJHC
14 2 UROLOGY 30 3 HEMATOLOGY/ONCOLOGY
15 3 UROLOGY 31 4 NEPHROLOGY-UH
16 4 GEN.INT. MED. TEAM 1 32 5 GERIATRIC MEDICINE
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Online Changes: Add/Drop Process For Schulich Lottery-Based Clinical Science Electives

If you change a Schulich elective or add a non-Schulich elective, you must drop the Schulich elective which you are replacing.

Add/Drop Step-by-Step Procedure

Step	Action Required	Due Date (if applicable)
1	Go to https://www.schulich.uwo.ca/singlesignon	The Add/Drop period starts **on Tues., February 28, 2012 – 11:59 p.m.**
2	On the main menu select **"Clinical Science Electives**." A screen will appear reflecting the lottery results for each block 1-8.	
3	**ADD**: If you wish to add an elective, click on the "ADD" button. This will cause a list of available electives to appear. At the bottom of this page there is a drop-down list displaying all available electives. From this list, choose the elective you wish to add and click "SUBMIT". **DROP:** If you wish to drop one or more electives, click on the appropriate checkbox or checkboxes under the column labeled "Select" and click the delete button at the bottom of the page.	
Students should not approach individual departments regarding placements **UNTIL AFTER** the add/drop period closes on June 25th, 2012.		
The Add/Drop period closes at **11:59 p.m.** on…… *(No further **online** changes may be made after this date. If you need to change your elective program please note the chart on the following page which outlines the procedure to follow).*		**June 25, 2012** After the deadline dates have passed, Schulich electives will become available to visiting non-Schulich students.

Registration Process For Schulich Non-Lottery Based Clinical Science Electives: Family Medicine, Occupational Medicine and Pathology

Due Dates

- Add/drops need to be completed and submitted by the due date for the Electives Approval: June 25, 2012. **You should add these electives to your on-line file prior to this date.**

Procedure For Elective Changes Following The Add/Drop Deadline– June 25, 2012

- Other changes to your electives may be possible following the add/drop deadline but **they may not be done on-line**.

- If, for any reason, you need to change an elective following the deadline, you must ensure you follow the procedures below:
    - **Email Dr. Stein (rstein2@uwo.ca) with details of the elective you will be dropping and the elective you would like replace it with. Dr. Stein must approve any elective changes.**
    - **Copy the Year 4 Electives Administrator on your email to Dr. Stein – dawn.macdonald@schulich.uwo.ca.**
    - **Once Dr. Stein approves your proposed changes, immediately contact the Admin. Coordinator(s) for the elective(s) you are dropping to allow another Schulich or visiting student to add it to their program as required (see contact chart at the front of this handbook).**
    - Please include the block number and Schulich elective in your email.
    - If you are dropping a non-Schulich elective please notify the school so they may accommodate other students who are interested in picking up the elective you are dropping.
    - **Copy the Year 4 Electives Administrator on the email you send to the Administrative Coordinator so the system can be updated manually to reflect the changes to your elective program.**
    - **Please send the Year 4 Electives Administrator confirmation letters or emails for any non-Schulich elective you are picking up.**

Electives in London Not Listed in Handbook

- Occasionally, electives in London may be arranged in areas that are not listed in the handbook.

- In these instances you are free to attempt to make arrangements **directly** with the physician involved.

Non-Schulich Electives

- You are completely responsible for making all arrangements for your electives.

- You will need to obtain, by mail or online, applications and information regarding electives at other medical schools.

- These applications occasionally ask for a letter of reference from the Dean verifying your standing in this faculty. Direct requests for letters of good standing/verification of liability insurance coverage/reference to the Year 4 Electives Administrator (dawn.macdonald@schulich.uwo.ca) in the Undergraduate Medical Education Office, Room M101, Medical Sciences Building.

- The application forms ask for the signature of the Dean or 'designate'. These forms should be directed to the Year 4 Electives Administrator for signature: dawn.macdonald@schulich.uwo.ca, Undergraduate Medical Education Office, Room M101, Medical Sciences Building.

- The completed material will be placed in your UWO mailbox for pick-up and you will be notified by email when it is ready (usually within a day or two).

- Generally, universities charge an administrative fee to process your application.

- Many medical schools also require that they receive your application for an elective **several months** prior to the start of the proposed elective. The timelines for most Canadian universities is a minimum of 4 months prior to the start of the elective, with 9 months being the earliest a student can submit an application. Make sure to check the various universities' websites for their timelines and application policies.

- If you arrange a non-Schulich elective directly with a Physician who is affiliated with a University Faculty/School of Medicine, you should ensure that you are registered with the Visiting Medical Student Electives Office at that University.

- Even though the physician has agreed to accept you, final approval is normally required by the University Electives Office. In the past, students have had their electives cancelled because they did not register with the 'host' University. Again, there are no exceptions to this.

- If you are not registered, you may not be insured by the university, putting yourself and your preceptor at risk.

- **Late cancellations are considered a professionalism issue at many of the Canadian universities. As such, it is advisable that all cancellations be made a minimum of 6 weeks prior to the start date of the elective.**

Students Going to the USA

- Students going to USA are required to present a letter from Schulich, which states the purpose of the visit, to the United States Immigration authorities when you enter the United States.
- A T-1 Visa is required if you plan to cross the border each day, for example, if your living accommodation is in Canada.
- Students must have a valid passport in order to enter the U.S.
- If you have any doubt that Dr. Stein will approve a particular elective, check with him before making any financial commitments for flight and accommodations.

Medical Electives Overseas

- Those students contemplating electives in developing countries must work through the "Medical Electives Overseas Program" (MEOP) coordinated by Dr. S. Kalidindi.
- All students considering an elective overseas ***must attend*** the Pre-departure Training Workshop, which is run through the Global Health Office. More information can be found at: http://www.schulich.uwo.ca/globalhealth/index.php.
- In other words, Dr. Kalidindi's approval must be submitted to the Undergraduate Medical Education Office along with various other documents that are required by the Global Health Office.

- **Developing World programs set up by the student, but not approved by Dr. Kalidindi, are not acceptable to the Undergraduate Medical Education Office.**
- It is recognized that there may be educational, economic, or political reasons for changes in the MEOP electives.
- Because of the damage which might be incurred to the goodwill relationship we have with the 'host' centers and to the reputation of the student, students contemplating a drop of an elective should consult with Dr. Kalidindi and the host institution before making a decision.
- To simply not 'show' because of a conflict or change in plans **is not acceptable**.

PROCESS FOR ADDING AN EXTERNAL OR NON-LOTTERY ELECTIVE TO YOUR ON-LINE FILE

Instructions	Details
Go to https://www.schulich.uwo.ca/singlesignon	You may start adding external electives Feb. 28, 2012.
Select the "**Clinical Science Electives**" tab.	The clinical science electives currently in your program will appear in chart form.
CLICK Add External (to add a non-Schulich Elective)	
Select "**Add External**" tab	The following fields will appear and must be filled in (fields marked by an asterix are mandatory fields): Block * Block Dates Specialty University * Department * Supervisor's Name * Street Address * Building/Unit # Other Address Information City * Province/State Country * Postal/Zip Code * Phone Number * Extension Fax
	For 3 week electives: • When entering 3 week blocks, choose the block where two of the three weeks fall. Enter the elective as if it is 2 weeks; under "Specialty" or "Address" insert the dates as follows – "NB: yy/mo/dd – yy/mo/dd"
Complete the information in the requested/required (complete elective information is required by Ministry of Health) fields and select the "**Add External Elective**" tab.	You must add your Schulich non-lottery elective here as well.

Emails/ letters confirming acceptance of your elective must be forwarded to Year 4 Electives Administrator, M101, (dawn.macdonald@schulich.uwo.ca.) Please note, for electives in developing countries, Dr. S. Kalidindi, (Coordinator of the Medical Overseas Program), must provide an email confirming and approving your elective. Confirmation letters may be left in the box outside M100 or emailed to dawn.macdonald@schulich.uwo.ca.	Your elective program is subject to approval by Dr. R. Stein based on the guidelines and regulations in your Elective Handbook. Credit will not be given for electives which are not approved before the start date.

PROCESS FOR OVERALL PROGRAM APPROVAL

Procedure to Follow Once You Have Received Your Lottery Results

- You may continue to arrange your elective program.
- This may include:

  Applying for non-Schulich electives

  Or

  Adding/dropping electives assigned to you through the lottery.

Procedure to Follow Once You Have Arranged Your Program to Your Satisfaction

- Complete your file by entering external electives on-line by **June 25, 2012** taking care to give complete information on the address, name and contact number of the supervisor for each elective.
- Once the deadline has passed, the UME office will review your elective program.
- Forward documentation of your acceptance to the non-Schulich electives and evidence that it is a University affiliated institution (if not already submitted) to dawn.macdonald@schulich.uwo.ca.
- Once your program has been approved by Dr. Stein, you will be notified by email.
- If there are problems with your program, you will be notified.

Important Information

- **Please be aware that the above deadline must be met.**
- **The Undergraduate Office will not be able to contact individual students regarding program information missing from your file (i.e. letters of acceptance, program approval forms, etc.).**
- **Your fourth year program is approved only upon notification from the Undergraduate Office that Dr. Stein has signed program approval forms and that the single sign on has been updated to reflect same.**
- **If you leave for your electives without ensuring that your program is approved, you will not get credit for your electives. This means you will not graduate.**
- **It is your responsibility to confirm that Schulich is aware of your clinical elective schedule and that it meets our graduation requirements.**
- **It is your responsibility to contact the departments (if the department has not contacted you) where your electives are scheduled prior to the start date to find out where you need to report and whether there are any department policies you need to be aware of.**
- **Hospital identification badges can be acquired at Customer Support Centers at both University Hospital (Room CLL-102) and Victoria Hospital (E1-501). Your PowerChart user name and password are the same as those assigned to you during your clerkship rotations.**

YEAR 4 CLINICAL ELECTIVE EVALUATIONS

Elective Evaluation Forms

- An evaluation form is required from your supervisor for every clinical elective block that you complete.
- Blank copies of the forms are put in student mailboxes prior to the final clerkship Academic half-day in August. The form will also be available electronically on the UME Year 4 web site.
- The white copy of the form must be forwarded to the UME office on completion of each elective.
- The yellow copy is for the student.
- The pink copy is for the department where the elective took place.
- Make sure to get your final evaluation forms completed and returned to you on the last day of your electives, and then send the white copies to Dawn MacDonald, Room M101, Medical Sciences Building within approximately two weeks of completion. This can avoid last minute scrambling for missing evaluations at the end of this year. Students are responsible for getting these forms submitted to the UME Office.

Final Transcripts

- The transcript will show whether or not you achieved a PASS or FAIL in the Clinical Science Electives course and whether or not you achieved a PASS or FAIL in the Transitional Period.
- Your evaluation forms will be placed in your personal file in the Undergraduate Medical Education Office.
- A grade cannot be submitted to the Registrar's Office until ALL evaluations are received. ***This is a requirement of the Registrar's Office in order to convocate.***

Grade of "Fail"

A grade of "Fail" may be given for Clinical Science Electives:

a) On clinical groups
b) For Clinical Science Electives blocks where attendance has not been satisfactory. Before you take brief "time-off" for illness and PGY-1/residency interviews, you must obtain consent from your immediate supervisor.
c) For unprofessional behavior.
    - In the case of failure, the Clinical Education Committee will review your results and make recommendations regarding remediation.
    - A student who has failed the OSCE may be eligible for up to four weeks of remedial work.
    - Remediation is a privilege and may not be granted under some circumstances.
    - Students who are required to do remedial work at the end of Year 4 may be required to graduate in October.

Further information on the Appeals process can be found at:
http://www.schulich.uwo.ca/education/ume/index.php?page=Appeals

Comprehensive Exam – OSCE

- The purpose of the Comprehensive Exam (also referred to as "Terminal OSCE") is to ensure that the primary goals of the clerkship and electives have been met.

- Students will be presented with undifferentiated problems that allow them to show their ability to diagnose and manage patient problems efficiently, effectively and humanely.
- The examination will be an Objective Structured Clinical Examination (OSCE) and will include a number of stations where standardized patients, models, mannequins, patient data, and computer simulations are used.
- Each clinical station will be timed.
- At each station the students will interview and examine a patient to display those components of medical practice that characterize a competent physician.
- The OSCE exam will be held in January, 2013.
- You must pass this exam to graduate.
- In the case of failure, the Clinical Education Committee will review your results and make recommendations regarding remediation.
- A student who has failed the OSCE may be eligible for up to four weeks of remedial work.
- Remediation is a privilege and may not be granted under some circumstances.
- Students who are required to do remedial work at the end of Year 4 may be required to graduate in October.

CaRMS

- The Canadian Resident Matching Service (CaRMS) corporation works in close cooperation with medical schools and students to provide services including:
    - Electronic application service
    - Computer match for entry into postgraduate medical training.

- For more information, please go to the CaRMS web site at: http://www.carms.ca/jsp/main.jsp

IMMUNIZATION AND HEALTH STATUS REQUIREMENTS

Health Care personnel are at risk of exposure to communicable diseases because of their contact with patients, or material from patients, with infections, both diagnosed and undiagnosed. It is therefore most important that their basic immunization be maintained. Conversely, up-to-date immunization will protect vulnerable patients from being infected by health care workers.

To comply with the Health Protection and Promotion Act and the Occupational Health and Safety Act in this regard, the teaching hospitals affiliated with The University of Western Ontario have established immunization and TB testing requirements which you **MUST** comply with to have access to the teaching programs conducted in these institutions.

Failure to provide the Admissions & Student Affairs office with proof of compliance in a timely fashion will result in your being barred by the hospitals and the Schulich School of Medicine & Dentistry from the clinical programs that are course requirements for your degree.

Reading the following requirements carefully is therefore important for you. You are expected to take responsibility for meeting these regulations.

Policy Regarding Communicable Diseases and Occupational Health for Applicants to and Students of the Undergraduate Medical Program

Revised: 2005

REGISTERED STUDENTS

A. Student Health and the Protection of Patients

- All students are expected to be in a state of health such that they may participate in the academic program, including patient care, without posing a risk to themselves or to others.

    1. Students with a communicable disease or other health problem may pursue their studies only as long as their continued involvement does not pose a health or safety hazard to themselves or others. Such a health or safety hazard, if protracted, may preclude them from participation in clinical work essential to the satisfactory completion of their program of study. **Therefore, all illness requiring more than a few days absence from class should be reported to the Associate Dean, Admissions & Student Affairs.**

    2. Students who acquire a communicable disease are required to seek medical opinion.

    3. In addition to complying with affiliated hospital regulations, students infected with active tuberculosis must notify the Associate Dean, Admissions & Student Affairs for counsel in regard to their medical program.

    4. Students who test positive for hepatitis B, hepatitis C or HIV are advised to consult with the Associate Dean, Admissions & Students Affairs for counsel in regard to their educational experiences and future career planning.

    5. The health status of those students reporting shall remain confidential.

Pre-Placement Notification

- Students who have any of the following are to contact the Associate Dean, Admissions & Student Affairs who will in turn contact the Occupational Health & Safety Services (or equivalent body in the relevant institution) prior to placement.

    1. A major medical condition.
    2. An infectious condition.
    3. A significant allergic reaction including latex sensitivity and latex allergy.

B. Student Participation in Care of Patients with Communicable Diseases

- Students are required to participate in the care of all patients assigned to them, including patients with communicable diseases. Such participation is necessary for the satisfactory completion of academic requirements.

- All students are expected to read, understand and adhere to the infection control policies of the institutions in which they are working. This includes the principles of body substance precautions (Universal Precautions).

- Students are responsible for conducting themselves in a manner which is consistent with the health and safety of themselves and others and shall be given appropriate training to do so.

- Students are required to comply with the immunization policies of the School.

C. Immunization Policy

To be adhered to by **ALL** students in the Medical Program.

COFM Immunization Policy

This policy applies to all undergraduate medical students attending an Ontario medical school and performing clinical activities in Ontario. Medical students who do not comply with the immunization policy may be excluded from clinical activities. Ontario medical students doing international clinical placements will require an additional assessment. A travel medicine consultation should take place at least eight weeks before their placement. Additional immunizations may be necessary depending on the location of their placement.

This policy is an evidence-based consensus document developed by an expert working group on behalf of the six Ontario medical schools and faculties. The policy closely complies with the current Ontario Hospital Association immunization recommendations; however, immunization requirements of individual hospitals or clinical institutions may vary. The policy allows some flexibility to enable health care practitioners to select among certain options according to their professional judgment. All Ontario medical schools agree that regardless of option chosen in a particular clinical situation, students of any Ontario medical school will have their immunization status accepted as long as this policy was followed.

The following investigations must be completed before entering a clinical placement. In the case of the hepatitis B immunizations, the series must be started before the student enters a clinical placement and completed by the end of the first academic year. The medical student may incur costs associated with some immunizations.

Tuberculosis:

a) Medical students whose tuberculin status is unknown, and those previously identified as tuberculin negative, require a baseline two-step Mantoux skin test with PPD/5TU, unless there is a documented negative PPD test during the preceding 12 months, in which case a single-step test may be given. For medical students who have had ≥2 previously documented negative PPD tests, but the most recent test was >12 months earlier, a single-step test may be given.[1] If a student has a previously documented positive tuberculin skin test, the student does not need to receive another tuberculin skin test, see (e).
b) Medical students who have had previous Bacille Calmette-Guerin (BCG) vaccine may still be at risk of infection and should be assessed as in (a) above. A history of BCG vaccine is **not** a contraindication to tuberculin testing.
c) Contraindications to tuberculin testing are:
   - history of severe blistering reaction or anaphylaxis following the test in the past;
   - documented active TB;
   - clear history of treatment for TB infection or disease in the past;
   - extensive burns or eczema;
   - major viral infection (persons with a common cold may be tested; and/or
   - live virus vaccine in the past month.

   NOTE: Pregnancy is NOT a contraindication for performance of a Mantoux skin test.
d) For medical students who are known to have a previously documented positive tuberculin skin test, for those who are found to be tuberculin skin test positive, or for whom tuberculin skin testing is contraindicated as in (c) above, further assessment should be done by Health Services under the direction of a physician, or by the student's personal physician.
e) Chest X-rays should be taken on medical students who:
   i. are TB skin test positive and have never been evaluated for the positive skin test;
   ii. had a previous diagnosis of tuberculosis but have never received adequate treatment for TB; and/or
   iii. have pulmonary symptoms that may be due to TB.

If the X-ray suggests pulmonary TB, the medical student should be further evaluated including sputum smear and culture to rule out the possibility of active tuberculous disease and documentation of the results of this evaluation should be in place before s/he is cleared for clinical placement. Once active tuberculosis has been ruled-out, strong consideration should be given to treatment of latent TB infection (LTBI).

All TB positive medical students should be advised to report any symptoms of pulmonary TB as soon as possible to the Health Services, and should be managed using current guidelines.

Active cases of TB, those suspected of having active TB disease, tuberculin skin test converters and those with a positive TB skin test are reportable to the local Medical Officer of Health. Students with active TB or suspected of having active TB should be reported as soon as possible to the Medical Officer of Health. Occupationally acquired active TB and LTBI are also reportable to Workplace Safety and Insurance Board (WSIB) and the Ontario Ministry of Labour.

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[1] *CDC Guidelines for Preventing the Transmission of Mycobacterium Tuberculosis in Health Care Settings, 2005*, **MMWR, 2005:54;RR-17.** *OHA/OMA Communicable Disease Surveillance Protocols Page 7 Tuberculosis Revised June 2007*

Annual screening for TB may be necessary in health care settings with a high incidence of active TB disease. Health Services should consult the local Medical Officer of Health and local hospitals regarding the incidence of active TB disease in the region and the need for continuing TB surveillance of medical students. A review of admissions through health records will determine if the setting is a high risk facility, as defined by Public Health Agency of Canada, i.e. $\geq$ 6 cases of active TB disease per year, requiring active surveillance. Students who are placed in high risk units or areas must report to Health Services for follow-up assessment within three months of completing the placement or elective.

Varicella/Zoster:

Medical students must demonstrate evidence of immunity. Medical students can be considered immune to varicella/zoster if they have:

- a definite history of chickenpox or zoster, **OR**
- VZV antibodies, using a sensitive/specific serological test such as immunofluorescent antibody (IFA), Latex agglutination (LA) or the ELISAIgG, **OR**
- documentation of age-appropriate dose of varicella vaccine: if the age of initial vaccination was 1 – 12 years: 1 dose; if the initial vaccination age was 13 or older: 2 doses.

Varicella vaccine is required for non-immune medical students. If after vaccination a varicella-like rash localized to the injection site develops, the person may continue to work if the rash is covered. A small number (approximately 5.5% after the first injection and 0.9% after the second injection) of vaccinated persons will develop a varicella-like rash not localized to the injection site; these persons should be excluded from work with high-risk patients (e.g., children, newborns, obstetrical patients, transplant patients, oncology patients) until lesions are dry and crusted, unless lesions can be covered. The effects of varicella vaccine on the fetus are unknown; therefore, pregnant women should not be vaccinated. Non-pregnant women who are vaccinated should avoid becoming pregnant for one month following each injection[2].

Measles:

Medical students must demonstrate evidence of immunity. Only the following should be accepted as proof of measles immunity:[3]

- documentation of 2 valid doses of live measles virus vaccine on or after the first birthday, **OR**
- the person was born before 1970*,* **OR**
- laboratory evidence of immunity.

If this evidence of immunity is not available, to meet the above requirements the medical student must have (a) measles immunization(s), in the form of a trivalent measles-mumps-rubella (MMR) vaccine, unless the student is pregnant. Females of child-bearing age must first assure their health care practitioner that they are not pregnant, and will not become pregnant for one month after receiving this vaccine.

Mumps:

Medical students must demonstrate evidence of immunity. Only the following should be accepted as proof of mumps immunity:[4]

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[2] NACI, CCDR, vol. 30, ACS-1, 2004

[3] National Advisory Committee on Immunization (NACI) **Canadian Immunization Guide 7th edition, 2006,** Public Health Agency of Canada. OHA/OMA Communicable Disease Surveillance Protocols Page 3 Measles Revised June 2007

[4] National Advisory Committee on Immunization (NACI) **Canadian Immunization Guide 7th edition, 2006,** Public Health Agency of Canada.

- documentation of 2 valid doses of live mumps virus vaccine on or after the first birthday, **OR**
- laboratory evidence of immunity.

If this evidence of immunity is not available, the medical student must have (a) mumps immunization(s)(of they had 0 doses, you need two doses), in the form of a trivalent measles-mumps-rubella (MMR) vaccine, unless the student is pregnant. Females of child-bearing age must first assure their health care practitioner that they are not pregnant, and will not become pregnant for one month after receiving this vaccine.

Rubella:
Medical students must demonstrate evidence of immunity. Only the following should be accepted as proof of rubella immunity:

- documentation of one valid dose of live rubella vaccine on or after their first birthday; **OR**
- laboratory evidence of immunity.

If this evidence of immunity is not available, the medical student must have a rubella immunization, in the form of a trivalent measles-mumps-rubella (MMR) vaccine, unless the student is pregnant. Females of child-bearing age must first assure their health care practitioner that they are not pregnant, and will not become pregnant for one month after receiving this vaccine.

Hepatitis B:
Documented evidence of a complete series of hepatitis B immunizations, in addition to testing for antibodies to HBsAg (Anti-HBs) at least one month after the vaccine series is complete is required. Medical students who have received three doses of hepatitis B vaccine and who have had an inadequate serological response should be tested for surface antigen (HBsAg) to determine if the reason for their non-response is because they are already a hepatitis B virus carrier. If the blood test identifying an inadequate serological response (anti-HBs<10IU/L) was done one to six months after completing the vaccination series and the student test negative for HBsAg, the student should receive an additional three-dose series. If the initial negative antibody result (anti HBs<10 IU/L) was done more than six months[5] after completing the vaccination series, and the student is negative for HBsAg, a test for serological response (anti HBs) could be done after the first booster in the second series. If the anti-HBs is >/= to 10IU/L, no further doses are needed. If after the first dose an inadequate serological response is still found, continue with the remaining two doses and repeat the serology test (anti-HBs) one month after completing the second series.

If the anti-HBs titre is below 10 IU/L one month after completing the second series, the person is considered a non-responder and must be counselled to be vigilant in preventing and following-up after needle stick injuries or any other potential exposure to Hepatitis B.

Routine booster doses of vaccine are not currently recommended in persons with previously demonstrated antibody as immune memory persists even in the absence of detectable anti-HBs, however periodic testing should be conducted in hepatitis B responders who are immunosuppressed to ensure they are maintaining their anti-HBs titre.

Polio:
Documented history of a primary series is requested. In the absence of documentation of an original series, the student should receive an adult primary series consisting of at least three doses.

[5] American Academy of Pediatrics **Red Book**, 2006 p. 202

Tetanus/Diphtheria**:**
Documented history of a primary series and dates of boosters are requested. In the absence of documentation of an original series, the student should be offered immunization with a full primary series. If the most recent booster is not within the last 10 years, a booster must be given. If a Tdap (Adacel Vaccine) has not been given as an adolescent or adult, this booster should be a Tdap.

Acellular Pertussis:
A single dose of Acellular Pertussis in the form of a Tdap (Adacel vaccine) is given if not previously received as an adult or adolescent, in place of one Td booster. There is no contraindication in receiving Tdap in situations where the student has had a recent Td immunization.

Influenza:
Annual influenza vaccination is strongly recommended by December first annually. Medical students who choose not to have an annual influenza vaccination should be notified that hospital policies preclude them from clinical placements in the event of an influenza outbreak.

(Approved by COFM May 23, 2008)

D. Counselling Guidelines for Students with Positive HIV and Hepatitis Serology

- Students known to be positive for HIV or Hepatitis E antigen will have their clinical learning experiences modified to avoid exposure prone procedures in order to protect the health of the patients for whom they are caring. Letters going to clinical supervisors advising of the need for modified rotations will be read and signed by the students to indicate agreement with the intent of the modifications and an independent student advisor (as stipulated in the Universities policies) will be involved.

- Affected students known to be infectious with blood-borne pathogens will first and foremost adhere to universal precaution guidelines. They will be allowed to perform procedures where their hands are visible (arterial blood gases, L.P.'s thoracenteses, venipunctures, etc. They will not be allowed to do any surgery where the hands are not visible. The latter could limit their participation as assistants at surgery and at deliveries. The degree of involvement will be determined on a case by case basis.

  There are no program modifications for those students who are Hepatitis Surface Antigen positive but Hepatitis E antigen negative.

Procedures to be Followed in the Event of Workplace Injury

What to do in the event of a needle stick or laceration injury in the clinical setting.

Although we expect all medical students to exercise universal precautions when dealing with all patients since one can never be sure that a patient is not carrying a blood borne infection, we know that occasionally accidents happen and you could be exposed to body fluids inadvertently.

Here is what you do if this happens to you:

1. **TELL**

   - Tell the attending physician about the incident and if he does not know the patient's Hepatitis B, Hepatitis C, and HIV status, ask if he will obtain a consent from the patient to have the status determined. This is hospital policy.
   - The patient, of course has the right to say "no" to such testing but generally they do not.
   - If your consultant is not immediately available, go to Step 2 and inform him/her later.

2. **GO**

   - If the incident occurs during a normal working day, go **immediately** to the **Office of Occupational Health and Safety** for the Institution in which you are working. If you do not know where the office is, ask the head nurse on the unit. The head nurse on the unit where you are working also needs to know since there will be a follow up to fulfill hospital policy. Occupational Health will initiate appropriate treatment.

   - If the exposure occurs after hours or on the weekend: go immediately to the Emergency Department of the hospital in which you are working and tell them what happened. They have a protocol to follow and will treat and advise you accordingly.

Penalty for Failure to Comply with the Policy

- At the time of registration into first year, students are required to submit their immunization record to the Associate Dean, Admissions & Students Affairs. Until such time as a satisfactorily completed record is submitted, students will not be permitted to register and/or have locker privileges. In subsequent years, students who do not provide documentation of updated immunization may be suspended from clinical training until the proper documentation is provided.

- Failure to comply with other aspects of this policy may result in a student being barred from access to patients and thereby rendered incapable of meeting academic requirements. Other academic sanctions may be imposed on a case by case basis.

- REMINDER: Make sure you have a copy of your immunization records with you, as you will need them when applying for external electives.

Workplace Safety & Insurance Board Guidelines for Pre-Clinical Placements

The Workplace Safety & Insurance Board

- The Workplace Safety & Insurance Board may cover students who are injured while completing unpaid work placements required as part of their education.

- The Ministry of Education and Training has issued guidelines for universities to follow to ensure students are covered.

- All work related injuries must be reported immediately to the Admissions & Student Affairs office (519-661-3744). This includes exposure to communicable diseases, exposure (i.e. puncture wounds) from blood or body fluids of patients. The process will be explained to you in detail.

- You must complete an "Accident/Incident Investigation Report" at the time of your injury.

- The report must be signed by you and your clinical teacher, providing the injury does not require immediate medical care.

- The student must report to Occupational Health and Safety for immediate first aid treatment and advice.

- The treatment and follow up of students who are injured as a result of their clinical placement will be provided by OHS.

- Students must report their injuries to their immediate supervisor and clinical teacher.

- It is very important that all injuries be reported to the Ministry of Education and Training and that the appropriate documentation is filed within 24 hours of the injury.

Illness on Duty

- Students who become ill while on duty in a clinical area should consult their immediate supervisor about leaving the duty assigned and seeking medical assistance as necessary at the Hospital, Health Services or their own physician.

- If the duty area is a general hospital, acute care may be rendered at the Employee Health Services of the hospital, or, if after hours or on weekend, in the Emergency Department.

Return to Work Health Assessments

- Students who have been absent for three days or more because of an illness or injury must be assessed as to their fitness to return to work by Occupational Health Services.

- Students must contact OHS immediately if absent due to infectious disease, surgery or communicable disease (e.g. measles, chicken pox, rubella, tuberculosis, etc.). OHS must be notified and the student assessed prior to any work assignment if they have contracted an **infectious disease** (i.e. conjunctivitis, staphylococcal or streptococcal skin infections, Herpes Simplex, respiratory or gastrointestinal illnesses).

Statement of Potential Health Risks

- Students in the Health Sciences Faculties, including Medicine & Dentistry, will be required to care for persons with any infectious disease (including Hepatitis B and HIV) should they be assigned to them.

Pre-Entry Requirements for Clinical Areas in Hospitals

- The three teaching hospitals are required, under the Public Hospitals Act and the Occupational Health and Safety Act, to ensure that students receiving clinical experience in the hospital, and the faculty involved, comply with the Act and its regulations.

- Any problem related to the failure of a student to comply could lead to the student being removed from the clinical experience and liability being placed on the University for any resulting damages to either patients or staff.

- *Pre-placement Notification to Occupational Health Services:* Students who have any of the following that may affect their ability to perform their duties while at the hospital are to contact Occupational Health Services at the hospital prior to placement:
    - A major medical condition
    - An infectious condition
    - A significant allergic reaction, including a latex sensitivity and latex allergy.

Enteric Disease Surveillance Protocol for Hospitals

Gastrointestinal Illness:

- Gastrointestinal illness of an acute infectious nature may have serious implications for food handlers and patient care workers.
- Therefore, all such persons experiencing vomiting and diarrhea have a responsibility to declare this to the Occupational Health Services, both when leaving work and returning to work.
- Food handlers or patient care workers experiencing vomiting or diarrhea of a probably infectious nature should normally be excluded from work until they have been symptom free for forty eight hours. The exceptions to this are the circumstances discussed under “Exceptions” below where a longer exclusion from work may be necessary.

Return to Work:

- When a good handler or patient care worker returns to work after a gastrointestinal illness, he/she must report to the Occupational Health Services as soon as possible.
- The Occupational Health Services should assess and counsel him/her regarding personal hygiene, or may delegate this to others (e.g. Supervisor) when appropriate.

- Return to work is not conditional upon submission of routine stool specimens or results of stool examination.
- Occupational Health Services will document these instances to identify clustering.
  In some situations, individuals may be identified as carriers of enteric pathogens (where stools have been submitted for reasons other than return to work criteria).
- In these cases, known symptom free carriers of enteric pathogens, including Campylobacter sp., Salmonella sp. (excluding typhi and paratyphi), E. Hostolytic, Yersinia, Giardia, and enteropathogenic or verotoxin-producing E. Coli may continue to work as long as personal hygiene is good.

Exceptions to these recommendations:

1. Salmonella typhi and paratyphi: Carriers of these organisms must be excluded from food handling and patient care activities until the carrier state is eradicated.

2. Hepatitis A: If symptoms or circumstances are suggestive of Hepatits A, the food handler or patient care worker must remain off work until seven days following the onset of jaundice. Administration of immune globulin to contacts (including other food handlers) within fourteen days of onset of illness in the case may be considered.

3. Norwalk-Like Disease: Persons with symptoms or circumstances suggestive of Norwalk disease must remain off work until symptom free for 48 hours. In outbreaks of Norwalk, patient-staff cohorting should be implemented: persons working in the affected institution should not work in other facilities until the outbreak is over.

4. Shigella: Persons with symptoms suggestive of Shigella must submit stool specimens for culture. If Shigella is cultured, the person must be excluded from work until two negative stools have been obtained, 24 hours apart, beginning at least 24 hours after diarrhea ends. If treated with antibiotics, the first stool must be submitted at least 48 hours following cessation of antibiotics.

5. Outbreaks: In outbreak situations, the Occupational Health Services must notify the Medical Officer of Health, and involve the hospital's Infection Control/Outbreak Control committee. Food handlers and epidemiologically-linked patient care workers may be asked to submit stools for examination.

   Symptomatic workers must remain off work until two stool specimens are negative for the outbreak pathogen; the stools must be collected at least 24 hours apart, with the first being collected following at least 24 hours without diarrhea. If the individual has been treated with antibiotics, the first stool must be submitted at least 48 hours following cessation of the antibiotic.

   Amptomatic persons may not work if their stool specimens are positive for the outbreak pathogen. Asymptomatic carriers of the outbreak pathogen may return to work once the outbreak is declared over by the Medical Officer of Health. All staff must be assessed and reminded regarding personal hygiene and high-risk food preparation, either by hospital staff or by public health inspection staff.

   In paediatric units, outbreaks of rotavirus infections are very common. If evidence of a rotavirus outbreak is found, staff should be assessed and reminded about good hygiene, but screening and exclusion of asymptomatic workers is not required.

The University of Western Ontario Policy on AIDS Re: Health Sciences Faculties

The following includes relevant material from the policy:

- Health Science faculties including Medicine & Dentistry will not seek to determine the HIV status of any student.

- In the event of voluntary disclosure of an HIV-positive status by a student, this information will be kept strictly confidential except on a "need-to-know" basis (i.e. Information re: the HIV status of a student may need to be disclosed to clinical teachers so course modification might occur). The knowledge and consent of the HIV-infected individual will be obtained prior to the disclosure of such information within the school.

- HIV-positive students or faculty, under ordinary circumstances of clinical practice will not be obliged to disclose their HIV status to patients or other clinical subject. The usual standards of practice, (i.e. University Blood and Body Fluid Precautions) should be emphasized.

- Clinical competency of students can be easily monitored. Students failing to meet minimal standards, who may be suspected of having symptoms due to HIV infection or AIDS, will be advised to seek medical attention.

- A mutually agreeable, knowledgeable physician will monitor the competency of students whose HIV status is known to the Faculty, and/or Medical Officer of Health. Disclosure of medical information will be confidential between the student and physician, unless the student consents to a wider disclosure. In the event illness compromises that competency, this information may be relayed to the Medical Officer of Health without breach of professional ethics. Students with known HIV infection will also undergo the other types of routine Faculty evaluations of clinical competency.

- HIV related health problems may interfere with the ability of graduates to obtain licenses to practice.

- The school will attempt to modify the program of any HIV-infected student who requests such modification. Students will be made aware because of program modification they may not meet professional licensing standards.

- The school recommends/promotes and encourages the use of gear and equipment necessary for the employment of universal precautions in settings where staff, students or faculty might be exposed to body fluids of patients, experimental subjects, etc.

- During their training, students may encounter patients infected by HIV. All students will be required to provide care for such patients.

- Students, staff and faculty members who are occupationally exposed to infectious HIV in the clinical setting (excluding UWO Affiliated Teaching Hospitals) will be directed to readily accessible sources of medical attention and counseling.

  Students, staff or clinical faculty having an occupational exposure to HIV at the Teaching Hospitals or other UWO affiliated health care facilities will be strongly advised to report to the Occupational Health Unit of that institution to obtain medical attention and counseling.

Alternative sources of medical help (i.e. Personal physicians, Student Health Services, Medical Office of Health) may be contacted in the event of occupational exposure to HIV.

- The school will not require the testing of patients or other clinical subjects for HIV antibodies in the case of accidental exposure of a student, staff or faculty member to blood or other body fluids of such individuals. Any testing to be carried out on patients must be done with the informed consent of the patient.

DEPARTMENT INFORMATION – London Location

ANAESTHESIA & PERIOPERATIVE MEDICINE

Co-Ordinator: Dr. Ivan Iglesias
Admin Secretary: Linda Szabo
Phone: 519 663-3283 FAX: 519 663-3079
Email: linda.szabo@lhsc.on.ca
Office Location: LHSC - University Campus, Room B3-218

DESCRIPTION

A) General Description
Clinical duties in the OR.

B) Learning Objectives

The time devoted to Anaesthesia is insufficient to permit the student to administer anaesthesia unsupervised. However, many practicing physicians are exposed to some aspect of perioperative care as referring family practitioners, surgeons, internists, etc. Anaesthesia is an integral part of most patient surgical experiences. Physicians involved with surgical patients must have a basic understanding of the perioperative management of such patients. The general objectives for undergraduates are adopted from those put forth by the Association of Canadian University Departments of Anaesthesia (ACUDA).

OBJECTIVES:
The elective in Anaesthesia gives the student the opportunity to see:
a) The application of basic physiology, especially respiratory, cardiovascular and neurological, and
b) The use of major drugs studied in earlier phases.

As well as seeing the various techniques used in Anaesthesia, the student will learn to manage the unconscious patient and develop an ability to perform basic lifesaving skills in a controlled setting. The student will practice skills (e.g., endotracheal intubation, IV's, etc) useful during the management of life-threatening emergencies, particularly of the cardiovascular and respiratory systems. Management of mechanical ventilation of the lungs will be included.

With this general preamble in mind, the following are the objectives for the elective in Anaesthesia:

a) (Knowledge) Aspects of the history and physical exam that are specific in Anaesthesia:
b) includes previous anaesthetic/surgical problems such as airway problems, unusual drug reactions, etc.
c) family history of anaesthetic problems such as malignant hyperthermia
d) specific assessment such as upper airway
e) perioperative management of chronic drug treatment regimes
f) (Skills) Practical aspects of managing the unconscious patient:
g) airway protection and patency (patient positioning and intubation of the trachea)
h) cardiovascular – IV techniques
i) (Knowledge) Basic pharmacology and safe use of basic drugs, such as muscle relaxants, narcotics, sedatives, inhalational agents, vasopressor and other agents affecting the cardiac and respiratory systems.
j) (Knowledge) A basic understanding of the principles of general and regional anaesthesia.

k) (Knowledge) Immediate postanaesthetic management in the PACU:
l) acute pain management
m) life-threatening immediate-postoperative emergencies such as airway obstruction, respiratory arrest, cardiovascular instability.
n) May have opportunity to do procedures such as lumbar puncture, central venous access, arterial access for sampling and/or monitoring.
o) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
p) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
q) Perform a physical examination without causing the patient embarrassment.
r) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
s) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
t) Recognize risk factors and be able to counsel patients on risk reduction.
u) Identify the rights and legal responsibilities of physicians to patients and the community.
v) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
w) Apply the concept of cost-effectiveness to public health interventions.
x) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
y) Determine the validity and applicability of published data through critical appraisal.
z) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
aa) Collaborate effectively with patients and families without having to take charge.
bb) Demonstrate skill in finding common ground when differences of opinion exist.
cc) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
dd) Demonstrates the ability to place the needs of patients and families first.
ee) Demonstrates honesty and trustworthiness in assessment, study and learning.
ff) Demonstrates responsibility and respect.
gg) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
hh) Be willing to seek help, advice or consultation when needed.
ii) Respond to personal and family needs and develop effective support systems
jj) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
kk) Use the concepts of evidence-based medicine to guide patient care decisions.
ll) Identify potential conflict between individual and population interests and seek advice from others.
mm) Assess the effectiveness of practice and engage in continuous quality improvement.

C) <u>Type of Clinical Experience</u>

In Patient	( )
Out Patient	( )
Both	(X)

D) Night and Weekend Call

Yes	(X) **Optional**
No	( )

E) Evaluation Procedure

Written Exam	( )
Oral Exam	( )
Informal Clin. Exam	(X)

F) Number of Students Accepted

Victoria Hospital: Anaesthesia only (2 wks) - 1 student
St. Joseph's Health Centre: Anaesthesia only (2 wks) - 1 student
University Hospital**: Anaesthesia (2 wks) - 1 student
(**Option for 4 wk elective: 2 wks Anaesthesia & 2 wks ICU - arrange with department)

G) Other Comments, Regulations or Expectations

Especially useful for those considering surgery, medicine, paediatrics, obstetrics and gynaecology, emergency, and other related areas

Base Hospital/EMS Rotation Objectives

Medical Student Elective Experience in Base Hospital and EMS Medicine

Medical Expert *The trainee will be able to....*

1) Differentiate and describe various EMS models. **(IV, XI)**
2) Discuss the administrative/operational structure of EMS in Ontario. **(IV)**
3) List features or characteristics of a tiered response - (first responder, BLS responder, ALS responder). **(IV, X, XI)**
4) Discuss the role of a Base Hospital. **(IV, XI)**
5) Understand the difference between off-line and on-line medical control. **(IV, XI)**
6) Understand the responsibility of the off-line medical director. **(IV, XI)**
7) Have an awareness of the procedure and use of EMS/ED radio communication. **(IV, VIII, IX)**
8) List medications available to PCP and ACP providers. **(IV, V, IX)**
9) Have an awareness of EMS medical protocols. **(V, VII, IX)**
10) Become familiar with the Ambulance Call Record be able to extract pertinent data. **(VII)**

Communicator

The trainee will be able to...

1) List pieces of priority information which physicians must gain from the EMS unit patient report. **(IX)**
2) Communicate effectively with paramedics and base hospital staff (VIII, IX)

Collaborator

The trainee will be able to...

1. Gain an understanding of Central Ambulance Communications Centre's role and responsibilities in EMS care. **(VIII)**
2. Foster team building/communication with various members of the SWORBHP. **(VI,VII)**
3. Consult effectively with emergency department physicians and nurses. **(IX)**

Manager

The trainee will be able to...

1. Gain an understanding of data processing and management from a Quality Assurance process at SWORBHP. **(VI, VII)**
2. Perform ACR audits to gain a familiarity with the QA process. **(VII)**

Health Advocate

The trainee will be able to...

1. Identify evidenced based areas for improvement in pre-hospital management to provide optimal patient care. **(XII)**

Scholar

The trainee will be able to...

1. Discuss current literature in EMS and be able to discern which practices in EMS are evidence based and which are not. **(XII, XIII)**
3. Contribute to the "summary" database of EMS Studies **(XIII)**
4. Have an awareness of current EMS research being conducted at LHSC/SWORBHP **(IV)**.

Professional

The trainee will....

1. Demonstrate professional behaviour toward patients, paramedics, base hospital staff, support staff and allied health professionals. **(IV,VI,VIII, IX,X)**

2. Demonstrate a strong self directed work ethic and a desire to learn issues pertaining to the above objectives. **(I-XIII)**

Action Plan for Successfully Completing the Objectives

Before Rotation Begins:
Review online EMS content on www.lhsc.on.ca/About_Us/Base_Hospital_Program

During Rotation:
-Orientation meeting with Mike Peddle (Assistant medical directors).
-Review PCP and ACP medical directives/protocols.
-Meet with Paul Robinson or delegate for Quality Assurance presentation.
-Complete ACR audits after meeting with Paul Robinson or delegate. Suggest reviewing VSA and relevant directives/protocols prior to completing audits.
-Attend CACC to observe EMS dispatch operations.
-Complete 3-4 EMS ride-outs and keep relevant log.
-Read Relevant Rosen/Tintinalli EMS chapters and study package.
-Read provided EMS literature/studies.
-Complete a "Bottom Line" which will be added to ongoing database.
-Meet with Mike Peddle mid-rotation to discuss any concerns, positive/negative experiences, suggestions for rotation improvements.

Ride-out Experience:

Thames EMS safety seminar must be completed prior to ride-out.
Ride-outs are observation only. No direct patient care or contact.
If you are unable to attend for some reason you must contact: 1) the duty manager 2) email Alan Hunt if he is not the duty manager & 3) email Mike Peddle.
Ride-outs must be completed and logs submitted to Dr. Mike Peddle by end of rotation.

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CLINICAL NEUROLOGICAL SCIENCES - Division of Neurology

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DESCRIPTION

The 4th year elective in Neurology offers students a continuation of their introduction to Clinical Neurological Sciences that they began in first and second year. It provides an opportunity for students to consolidate their knowledge by using it in clinical situations in the care of patients.

Students are assigned to the Neurology Team at the University Campus, London Health Sciences Centre. As part of the team, commensurate with their abilities, students will be responsible for the investigation and treatment of patients seen on the in-patient, out-patient, consultation or emergency services.

LEARNING OBJECTIVES

A. General:

Knowledge: Students should be able to define, describe and discuss the:
a) clinical presentations that may signify nervous system involvement;
b) elements of the neurologic examination (mental status, language, cranial nerves, motor, reflexes, sensory, coordination and gait);
c) components of the nervous system being evaluated by each aspect of the exam;
d) indications, contraindications and complications of lumbar puncture;
e) indications and contraindications for CT head and MRI brain;
f) indications for and usefulness of electromyography and nerve conduction studies (EMG/NCS);
g) indications for and usefulness of electroencephalography (EEG).

Skills: Students should be able to:
a) demonstrate a focused history-taking that incorporates pertinent positives and negatives for the presenting neurologic complaint;
b) perform an organized and focused neurologic examination distinguishing normal from abnormal findings;
c) synthesize the history and physical findings to accurately localize the problem within the nervous system:

- cerebral hemisphere – cortical *vs* subcortical
- posterior fossa – brainstem and cerebellum
- spinal cord
- anterior horn cell
- nerve root/plexus
- peripheral nerve
- neuromuscular junction
- muscle

d) formulate a differential diagnosis based on the time course, history, exam and localization;
e) accurately interpret the results of CSF analysis;
f) demonstrate an approach to the interpretation of CT head.

B: Specific:

Knowledge:

Students should be able to define, describe and discuss the following neurologic conditions:

- Acute stroke – ischemic or hemorrhagic
- Transient ischemic attack
- Epilepsy
- Migraine
- Tension-type headache
- Meningitis and encephalitis
- Parkinson disease
- Coma and brain death
- Multiple Sclerosis
- Polyneuropathy

Students should be able to identify risk factors (modifiable and non-modifiable) that predispose individuals to the above neurologic conditions.

Skills: History-taking:

Students should be able to obtain, document and present an appropriately complete medical history for the following clinical presentations:

- Weakness – focal *vs* diffuse
- Numbness/tingling/altered sensation
- Visual disturbance
- Headache
- Seizure
- Altered level of consciousness/coma
- Aphasia
- Ataxia
- Involuntary movements
- Transient neurologic symptoms
- Neuropathic pain

Students should be able to define, describe and discuss:

- the clinical presentation as abrupt, acute, subacute or chronic;
- a relevant differential diagnosis;
- and identify the critical features ("red flags") that indicate an emergent or urgent presentation of:
    - headache
    - altered level of consciousness
    - weakness
    - visual disturbance
    - seizure
    - ataxia

Students should be able to demonstrate an initial approach to the investigation and management of the following:

- acute stroke in the emergency room;
- acute flaccid weakness;
- headache, fever and meningismus;
- abrupt, severe "thunderclap" headache;

- acute altered level of consciousness;
- status epilepticus.

OBJECTIVES:

a) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
b) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
c) Perform a physical examination without causing the patient embarrassment.
d) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
e) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
f) Recognize risk factors and be able to counsel patients on risk reduction.
g) Identify the rights and legal responsibilities of physicians to patients and the community.
h) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
i) Apply the concept of cost-effectiveness to public health interventions.
j) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
k) Determine the validity and applicability of published data through critical appraisal.
l) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
m) Collaborate effectively with patients and families without having to take charge.
n) Demonstrate skill in finding common ground when differences of opinion exist.
o) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
p) Demonstrates the ability to place the needs of patients and families first.
q) Demonstrates honesty and trustworthiness in assessment, study and learning.
r) Demonstrates responsibility and respect.
s) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
t) Be willing to seek help, advice or consultation when needed.
u) Respond to personal and family needs and develop effective support systems
v) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
w) Use the concepts of evidence-based medicine to guide patient care decisions.
x) Identify potential conflict between individual and population interests and seek advice from others.
y) Assess the effectiveness of practice and engage in continuous quality improvement.

NIGHT AND WEEKEND CALL:

Night and weekend call will be assigned to the student. The student will not have greater than 1 in 4 call.

NUMBER OF STUDENTS ACCEPTED:

LHSC-UH - maximum of 2 students on the team

CLINICAL NEUROLOGICAL SCIENCES - Division of Neurosurgery

Program Director: Dr. Wai Ng
Contact: Lisa Baker-Spiller
Rm B7-005, University Hospital - LHSC
Tel: 519 663-3696 Fax: 519 663-3982
Email: Lisa.BakerSpiller@lhsc.on.ca

DESCRIPTION

The Year 4 Elective in Neurosurgery offers the students a continuation of their introduction to Clinical Neurological Sciences that they began in first and second year. It provides an opportunity for students to consolidate their knowledge by using it in clinical situations in the care of patients. It also allows the students to be exposed to the Neurosurgical experience as part of career decision-making.

The Neurosurgical experience is a more surgical approach to neurological problems. The types of neurological problems presenting to Neurologists and Neurosurgeons tend to differ – with Neurosurgical problems tending to represent structural lesions and trauma. However, at the London Health Sciences Centre there also an opportunity to be exposed to surgical management of such problems as epilepsy, movement disorders, chronic pain and spasticity.

Students will be assigned to a Neurosurgery Team at University Campus of the London Health Science Centre, and commensurate with their abilities, will be responsible for the investigation and treatment of patients seen on the out-patient, in-patient, and emergency services.

LEARNING OBJECTIVES

1. Medical Expert

a) Obtain a focused neurological history from the patient/caregiver
b) Perform a detailed and focused neurological examination and an appropriate general physical examination
c) Localize the lesion in the neuraxis, using information from the history, physical examination and knowledge of neuroanatomy and neurophysiology.
d) Provide a differential diagnosis
e) Outline the initial steps in management
f) Identify acuity of the conditions when prompt management is warranted
g) Be familiar with the initial steps in the management of common head and spinal injuries
h) Identify situations in which patients with head injuries would require surgical interventions
i) Be able to perform procedures, commensurate with their abilities, under the direct supervision of the consultants and residents. These procedures may include, but are not limited to, surgical exposure, wound closure, lumbar puncture, application of external orthosis, external ventricular drainage.

2. Communicator

a) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
b) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
c) Perform a physical examination without causing the patient embarrassment.
d) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.

e) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
f) Recognize risk factors and be able to counsel patients on risk reduction.

3. Collaborator

a) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
b) Collaborate effectively with patients and families without having to take charge.
c) Demonstrate skill in finding common ground when differences of opinion exist.
d) Establish effective relationships with colleagues and other member of the health care team by:
    i. Considering their suggestions and criticisms.
    ii. Tactful handling of differences of opinion.

4. Manager

a) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
b) Recognize that neurosurgical care is resource-intensive.
c) Recognize the limitations of the availability of neurosurgery-related resources in non-university settings.
d) Use the concepts of evidence-based medicine to guide patient care decisions.
e) Identify potential conflict between individual and population interests and seek advice from others.

5. Health Advocate

a) Identify the rights and legal responsibilities of physicians to patients and the community.
b) Recognize lifestyle / risk factors that are associated with the patient's condition and collaborate with patient to promote wellness.
c) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
d) Apply the concept of cost-effectiveness to public health interventions.

6. Scholar

a) Demonstrate skill in self-directed learning by:
    i. Ability to identify areas of deficiency in one's own knowledge and skills.
    ii. Ability to find appropriate educational resources.
    iii. Ability to evaluate personal learning progress.
    iv. Ability to use new knowledge in the care of patients.
b) Determine the validity and applicability of published data through critical appraisal.

7. Professional

a) Demonstrate commitment to one's teachers, classmates, patients, the profession and society through ethical behavior
b) Demonstrate social accountability through a commitment to one's colleagues, patients, the profession and society.
c) Demonstrate a commitment to personal health, balancing the goal of excellence in education with a sustainable work ethic.
d) Demonstrate a commitment to reflective practice.
e) Demonstrate honesty and trustworthiness in assessment, study and learning.
f) Demonstrate responsibility and respect.
g) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
h) Be willing to seek help, advice or consultation when needed.
i) Respond to personal and family needs and develop effective support systems

CLINICAL DUTIES

In general, the student is expected to function as a member of the neurosurgical clinical team. This includes being present at morning patient rounds, seeing preoperative patients and patients in the emergency department. Students may attend at operative cases and assist in the operating room.

The rotation provides an opportunity for the students to consolidate his/her clinical examination skills. The greatest exposure to patient examination will be in the outpatient clinic and in the emergency department (during the day, or while on call). Students are encouraged to take advantage of these opportunities.

If a student wishes to concentrate on specific aspects of this rotation (e.g. extensive out-patient experience) then he should discuss this with the Program Director.

NIGHT AND WEEK-END CALL

Students rotating on the Neurosurgical service will be assigned 1 night of call per week on service and are expected to see patients with the resident on call. The student will also attend 2 clinics and 2 O.R.'s per week.

NUMBER OF STUDENTS ACCEPTED

LHSC-UH - 2 students will be accepted as part of the general Neurosurgical elective.

FAMILY MEDICINE

Program Director: Dr. George Kim, george.kim@schulich.uwo.ca, 519-661-2111 ext. 82037
Program Coordinator: Kari McLennan,kari.mclennan@schulich.uwo.ca, 519-661-2111 ext. 86683
Office Location: Rix Clinical Skills Learning Building, 2nd Floor, Western

Family Medicine Elective Website: http://www.familymedicineuwo.ca/elective/

Electives in Family Medicine provide students with the opportunity to study an area of interest in greater depth and fill in personal knowledge gaps through a self-directed program in London or one of our rural regional communities.

Electives in Family Medicine can be 2 to 4 weeks long, taking place in London or one of the rural/regional locations below. Students are given the option to arrange their own Family Medicine electives directly with the preceptor, or they can contact the Program Coordinator to assist in finding an appropriate physician. There is no limit to the number of electives confirmed for each student.

AVAILABLE ELECTIVES: Please see below for a list of available clinical electives in Family Medicine. For links to practice descriptions please visit the Family Medicine elective website. Students can arrange their own electives with other family physicians not listed below, but are required to send the Program Coordinator the preceptor name, complete address and electives dates.

- **ACADEMIC TEACHING CENTRES** (Byron Family Medical Centre, St. Josephs Family Medical Centre, Victoria Family Medical Centre, Southwest Middlesex Health Centre-Mt. Brydges)
- **LONDON COMMUNITY**
- **RURAL COMMUNITIES**
  - Aylmer, Blenheim, Chatham, Clinton, Flesherton, Forest, Hanover, Ilderton, Ingersoll, Kincardine, Kitchener, Lions Head, Lucan, Newbury, Owen Sound, Palmerston, Petrolia, Sarnia, Seaforth, Southampton, St. Marys, St. Thomas, Stratford, Strathroy, Tavistock, Thorndale, Walkerton, Wallaceburg, West Lorne, Wingham and Woodstock.

AWARDS: There are two awards for 4th year electives in Family Medicine: RA Kinch and Theo Mary Anderson Awards. Descriptions can be found on the elective website.

LEARNING OBJECTIVES: The central goal of the Family Medicine clerkship is to help you to enhance your skills in applying the Patient-Centred Clinical Method to understand the patient's personal experience of their illness and find common ground regarding management decisions. This includes:

- Becoming effective in interviewing patients
- Conducting a skilled and sensitive physical assessment
- Enhancing your clinical reasoning skills
- Finding and using the best evidence available
- Applying the principles of prevention whenever possible
- Understanding each patient in the context of the "big picture" – the patient as a person, their family and community and their ecosystem
- Demonstrating professional behaviour when interacting with patients, colleagues and staff.

OBJECTIVES:

1) Present a pertinent history and conduct a relevant physical exam, under supervision, on an adult or elderly patients presenting with the following complaints:

   i. new or chronic cough
   ii. fatigue
   iii. low back pain
   iv. fever
   v. shortness of breath
   vi. abdominal or pelvic pain
   vii. headache
   viii. dizziness
   ix. chest pain
   x. lower leg swelling
2) Present a relevant and focused differential diagnosis to your supervisor, on an adult or elderly patient presenting with the following complaints:
   i. new or chronic cough
   ii. fatigue
   iii. low back pain
   iv. fever
   v. shortness of breath
   vi. abdominal or pelvic pain
   vii. headache
   viii. dizziness
   ix. chest pain
   x. lower leg swelling
3) Describe (to your supervisor and/or the patient) an approach to the management of the following presenting complaints in an adult or elderly patient:
   i. new or chronic cough
   ii. fatigue
   iii. low back pain
   iv. fever
   v. shortness of breath
   vi. abdominal or pelvic pain
   vii. headache
   viii. dizziness
   ix. chest pain
   x. lower leg swelling
4) The student will conduct (under supervision) a relevant history and physical exam for an adult or elderly patient with established diabetes presenting to the out-patient family medicine clinic for a diabetic check-up.
5) The student will manage (under supervision) an adult or elderly patient with established diabetes presenting to the out-patient family medicine clinic for a diabetic check-up. The student should also list the pertinent screening procedures done for a patient with diabetes.
6) The student will manage (under supervision) an adult or elderly patient presenting to the out-patient family medicine clinic with either established hypertension or established dyslipidemia. The management should include a discussion with the patient and/or supervisor of the appropriate medications, their common side effects and alternative treatments.
7) The student will participate in the care of an elderly patient, either in a long-term care facility, the acute care setting (i.e., the emergency department) or the out-patient family medicine clinic under the direction of their supervisor.
8) The student will demonstrate a prenatal exam (under supervision) on a female adult patient (as measured by completion of appropriate procedures and examination as directed by the antenatal flow sheets).

9) Given an infant, child or adult presenting to the out-patient family medicine clinic, the student will administer an intramuscular or subcutaneous immunization under supervision.
10) Given an infant presenting to the out-patient family medicine clinic, the student will demonstrate a well-baby exam under supervision.
11) Given an adult female patient presenting to the family medicine out-patient clinic, the student will perform a pap smear where appropriate.
12) Given an adult between the ages of 50-70 presenting to the out-patient family medicine clinic, the student will demonstrate a periodic health exam under supervision and will list to the supervisor relevant screening procedures appropriate for the patient in question.
13) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
14) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
15) Perform a physical examination without causing the patient embarrassment.
16) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
17) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
18) Recognize risk factors and be able to counsel patients on risk reduction.
19) Identify the rights and legal responsibilities of physicians to patients and the community.
20) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
21) Apply the concept of cost-effectiveness to public health interventions.
22) Demonstrate skill in self-directed learning by:
    i. Ability to identify areas of deficiency in one's own knowledge and skills.
    ii. Ability to find appropriate educational resources.
    iii. Ability to evaluate personal learning progress.
    iv. Ability to use new knowledge in the care of patients.
23) Determine the validity and applicability of published data through critical appraisal.
24) Given a patient of any age presenting to the out-patient family medicine clinic or acute care setting (i.e., the emergency department), the student will demonstrate skill in finding common ground when differences of opinion exist.
25) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
26) Collaborate effectively with patients and families without having to take charge.
27) Demonstrate skill in finding common ground when differences of opinion exist.
28) Establish effective relationships with colleagues and other member of the health care team by:
    i. Considering their suggestions and criticisms.
    ii. Tactful handling of differences of opinion.
29) Demonstrates the ability to place the needs of patients and families first.
30) Demonstrates honesty and trustworthiness in assessment, study and learning.
31) Demonstrates responsibility and respect.
32) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
33) Be willing to seek help, advice or consultation when needed.
34) Respond to personal and family needs and develop effective support systems.
35) Use the concepts of evidence-based medicine to guide patient care decisions.
36) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
37) Identify potential conflict between individual and population interests and seek advice from others.
38) Assess the effectiveness of practice and engage in continuous quality improvement.

EVALUATION
To be discussed with your preceptor.

ON-CALL
To be discussed with your preceptor.

Office of Global Health - Marginalized Communities Selective

Program Director: Dr. Natalie Lovesey, nlovesey@gmail.ca; 519-661-2111, ext. 89135
Program Coordinator: Helene Lau, helene.lau@schulich.uwo.ca ; 519-661-2111, ext. 89135

(Marginalized Community Selective offered through the Department of Family Medicine and the Office of Global Health)

Introduction

The Marginalized Communities Clinical Experience provides learners with opportunities to work with Marginalized Groups in London, Kitchener and the surrounding areas.

Trainees will be working in clinical settings with the following 'Marginalized' Populations:

1) Refugee claimants;
2) Aboriginals;
3) The impoverished or at risk for homelessness;
4) Women escaping violent domestic situations;
5) At risk children;
6) Migrant workers (particularly from Jamaica and Mexico); and
7) Those with addiction and substance abuse issues.

Thus far, established clinical settings and partnerships who have agreed to accommodate students include:

1) The Southwest Ontario Aboriginal Health Access Centre;
2) Middlesex-London Health Unit;
3) London Cross Cultural Learner Centre;
4) London InterCommunity Health Centre;
5) Methadone Clinic;
6) Salvation Army Centre of Hope;
7) Refugee Health Clinic Kitchener; and
8) Mobile clinic for migrant workers in conjunction with Occupational Health Clinics for Ontario Workers (OHCOW) in Simcoe

In addition, experiences in Kitchener may be available at St. John's Kitchen for those at risk for homelessness and Mary's Place, a women's shelter.

The selective can be viewed as an opportunity for those who are interested in exploring Global Health Issues outside the realm of an international experience. It is also a great opportunity to prepare students for future international experiences as this will provide them with a sound foundation, applying common practices in Global Health (e.g. cultural competencies, language competencies, ethics, work in low resource settings etc).

Programmatic Objectives

1. To allow trainees to develop knowledge, awareness and understanding of the special needs of vulnerable groups, and to assist them in developing skills and attitudes to provide the highest quality of care and to advance the health and well-being of vulnerable individual patients, communities and populations.
2. To ensure that trainees receive the proper training and education that will assist them in fulfilling their roles as outlined by the Royal College of Family Physicians' CanMEDs Framework and Competencies (medical expert, communicator, collaborator, manager, health advocate, scholar and professional) for these particular populations.
3. To provide a learning environment for trainees that is participatory, collaborative and learner centered and to actively involve learners in developing learning outcomes, activities, expectations and assessments so that they are empowered to establish relevant and attainable goals.
4. To provide opportunities for trainees to understand and examine the root causes of health issues and health outcomes, including the various determinants of health and to assist trainees in identifying what health-promotion and disease-prevention activities are appropriate for these populations.
5. To allow trainees to gain an understanding of the structure and function of the health care system and community resources as they relate to marginalized populations, so they can assist patients in navigating the healthcare system and accessing the appropriate health resources in a timely manner.
6. To expose trainees to real life situations where they will encounter methodological and ethical issues related to at-risk populations so that they may build their abilities and skills in decision-making, problem solving, reasoning, and modeling in order to best serve vulnerable and marginalized populations.
7. To enable trainees to reflect critically on community service and social responsibility in a clinical practice setting.
8. To allow trainees to gain an understanding of trans-disciplinary and interprofessional care and a range of activities and organisations that can promote the well-being of their patients (e.g. community agencies, self-help groups, advocacy etc).
9. To emphasize to trainees the importance of prioritizing patient welfare and the necessity of serving in the interest of the patient regardless of market forces, societal pressures and administrative exigencies through an experiential clinical opportunity.
10. To demonstrate to trainees the importance of patient autonomy in making informed decisions about their treatment and to give them the tools to educate and advocate for their patients.
11. To encourage trainees to promote justice and equity in the health care system and public health system, to contribute to a uniform and adequate standard of care, and to reduce barriers to equitable health care. This includes promoting the fair distribution of health care resources and the elimination of discrimination in health care based on characteristics such as race, gender, socioeconomic status, ethnicity, and religion.
12. To enable and enhance culturally sensitive attitudes, values and skills whereby trainees develop an awareness and acceptance of all cultures and peoples whereby tolerance, respect for diversity, inter-cultural exchange and dialogue are emphasized.
13. To encourage students to reflect on their own personal values, beliefs, and ways of living and to gain a further understanding of how they relate to others as they work with a variety of individuals and populations who have differing beliefs, values, cultural practices and who practice different ways of living. This could assist students in not only further developing their skills and knowledge but in rethinking/ restructuring their personal values.

Learning Objectives (For Trainees)

After completion of this elective, you will be able to:

1. Articulate an understanding of vulnerability and marginalization and identify gaps in the Canadian health system and social system that put people at risk.

2. Demonstrate sensitivity to the needs of vulnerable populations and reflect on service to deal with these needs (this includes cultural sensitivity).
3. Describe the Royal College of Family Physicians' CanMEDs Framework and Competencies (medical expert, communicator, collaborator, manager, health advocate, scholar and professional) as it relates to these populations.
4. Cite examples of how you have acted as a resource to the individuals and populations with whom you have interacted - promoting health or preventing illness. Examples might include providing and explaining health information, collaborating with and facilitating access to other caregivers, liaising with appropriate community resources and advocating for patients throughout the health care system.
5. Incorporate the root causes of health issues and health outcomes, including the various determinants of health in any case presentation
6. Identify which health-promotion and disease-prevention activities are appropriate for particular populations.
7. Cite examples where you saw the value of interprofessional care.

Experiential Learning Opportunities

Specific experiences chosen may allow you to:

1. Explain how poverty is defined in Canada and understand the makeup and demographic characteristics of the population that lives in poverty.
2. Explain how the immigration and refugee systems function and how they either enhance or threaten health.
3. Demonstrate awareness of the ways in which early childhood trauma, mental health, addictions and poor health are interconnected.
4. Elaborate on how the history and social situation of First Nations Peoples puts them at risk for poor health.

Logistics

The Office of Global Health and Department of Family Medicine, have approved each current placement and will evaluate any new Marginalized Community Placements to ensure that they meet the desired learning objectives and opportunities. Most placements will be 4 weeks which include partnership and contact with a primary preceptor at least 40% of time. Placements will include half day rotations between the student's primary placement and up to two or three other placement locations. Placement locations will depend on position availability (which is quite flexible and open) as well as trainee requests in areas of special interest.

Placement Opportunities at Middlesex-London Health Unit (MLHU) www.healthunit.com

London Office: 50 King Street, London, ON N6A 5L7; (519) 663-5317
Strathroy Office: 51 Front Street, E., Strathroy, ON N7G 1Y5; (519) 245-3230

Opportunity

Dynamic opportunities for medical students are obtainable at the Middlesex-London Health Unit, an Accredited Health Unit and the official provider of public health services in the City of London and Middlesex-County. Medical students can expand their knowledge of health promotion and population health approaches by actively participating in a variety of important programs that include:

- Working alongside the Medical Officer of Health/Associate Medical Officer of Health in an organization consisting of 5 service areas with over 300 employees that serves a population an urban and rural population of over 400,000
- Assisting in disease outbreak management
- Developing communication skills for working with the media
- Monitoring the epidemiology of current health issues and reportable diseases as well as evaluating public health approaches to these issues
- Use of public health surveillance systems for program planning and evaluation
- Providing direct patient care within several clinic environments and in the community
- Participating in inspections in settings such as restaurants, child care centres, long term care facilities etc.
- Participating in community immunization campaigns
- Utilizing legislative authority provided by the Health Protection and Promotion Act (R.S.O. 1990) to safeguard and promote health

Your Colleagues

You will become a part of a highly skilled, interdisciplinary team that includes: Public Health Nurses, Public Health Inspectors, Public Health Dieticians, Physicians, Dentists, Health Promoters, Researchers, Evaluators, Epidemiologists and support staff.

Dynamic Programs

The Mandate of the Middlesex-London Health Unit, as defined by the Ontario Health Protection and Promotion Act (R.S.O.1990) covers a broad spectrum of public health activities that include:

- Control of Infectious Disease and Health Hazard Investigation
- Immunization and Vaccine Preventable Diseases
- Chronic Disease and Injury Prevention
- Early Detection of Cancer
- Food and Water Safety
- Sexual and Reproductive Health
- Family and Child Health
- Dental Health
- Emergency Preparedness

* The length of the placement is negotiable and dependant on program needs and availability of agency advisors.

For further information or to arrange a placement at Middlesex-London Health Unit contact:

Karen Jenkins, PHN, Education Coordinator
Phone: 663-5317 ext. 2597
Email: karen.jenkins@mlhu.on.ca

MEDICAL IMAGING

FACULTY COORDINATORS: Dr. J. Amann – St. Joseph's Hospital
Dr. R. Etemad-Rezai – University Hospital
Dr. A. Mujoomdar – Victoria Hospital

EDUCATION COORDINATOR: Christine Koustrup
Tel: 519-685-8500 x 32615

OFFICE LOCATION: St. Joseph's Health Care, Room B6-667a

A) General Description: The Department of Medical Imaging offers two-week elective experiences at each of the three teaching hospitals.

The elective will involve a rotation through each of the following imaging modalities: plain films, ultrasound, CT, MRI and interventional radiology. In addition, the student will be scheduled to spend time reporting with both residents and staff radiologists. Students will be assigned AM and PM half days in the various subspecialty areas, with some time left free for self-study. It will be an expectation that the students attend every day of the 2-week session. The student is welcome to also attend rounds and encouraged to attend the Academic Afternoon sessions held every Thursday afternoon along with the residents.

Elective students are selected via lottery with a maximum of four students accepted per two-week block – **2 students at Victoria Hospital, 1 student at University Hospital and 1 student at St. Joseph's Hospital (*with a maximum of one 2 week elective per student*).** The policy of four students per block will be adhered to. However, if a student chooses to concentrate in one particular subspecialty and can make private arrangements directly with a supervising consultant, occasional exceptions can be made (a form to be signed by the student and supervising radiologist is available from Christine Koustrup).

On the first day of the elective, students should report to Dr. Etemad-Rezai at UH (2nd floor, Radiology Department), Dr. Mujoomdar at VH (Room C2-208, Interventional Radiology Section), and Vickie Kline at SJH (C0-234, Diagnostic Imaging Department).

Elective students may choose to spend part of their time in the Nuclear Medicine departments of each hospital. The students will be exposed to a variety of clinical cases. There will be ample time provided for reading and use of other instructional resources.

B) Learning Objectives
At the conclusion of the elective, the student should:

- Be able to initiate appropriate radiologic procedures for checking clinical hypotheses
- Acquire information required to solve problems from the diagnostic imaging tests
- Abide by the principles in the Code of Ethics as published by the Canadian Medical Association and keep informed of changes in the code
- Apply the concept of cost-effectiveness to public health interventions as they pertain to diagnostic and interventional radiology
- Demonstrate skill in self-directed learning by:
    - Ability to identify areas of deficiency in one's own knowledge and skills.
    - Ability to find appropriate educational resources.
    - Ability to evaluate personal learning progress.
    - Ability to use new knowledge in the care of patients.
    - Opportunity to learn and apply the scientific method.

- Determine the validity and applicability of published data through critical appraisal.
- Develop the self-knowledge necessary for personal growth and continuous learning

- Develop the ability to work effectively as a member of a team, as participant or leader.
- Demonstrate skill in finding common ground when differences of opinion exist.
- Demonstrate the ability to communicate effectively with peers and colleagues by contributing to productive communication and co-operation among colleagues engaged in education, research, and health care.
- Establish effective relationships with colleagues and other member of the health care team by:
  - Considering their suggestions and criticisms.
  - Tactful handling of differences of opinion.
  - Providing support and direction to less experienced personnel.
  - Recognize personal biases and ensure that they do not interfere with the patient's best interests.
- Use the concepts of evidence-based medicine to guide patient care decisions.
- Develop an awareness of personal assets, biases, and limitations.
- Be willing to seek help, advice or consultation when needed.

In addition, while on the elective, the student should:

- Have seen many of the diagnostic and interventional procedures performed in radiology.
- Have an organized approach to analyzing common examinations.
- Be able to understand the various diagnostic procedures in an efficient manner.
- Have taken an active part in the day-to-day operation of the department, including all resident rounds and seminars.

C) Type of Clinical Experience
In-patient and out-patient

D) Night and Weekend Call
Yes ( )
No (X)

E) Evaluation Procedure
Informal: based on attendance, enthusiasm and clinical knowledge.

F) Number of Students Accepted
Each Block: Two students per block at each teaching hospital.

G) Other Comments, Regulations or Expectations:
A wide variety of clinical problems are seen in the Department of Medical Imaging every day. The student is **expected to show initiative** in seeing as much as possible while in the department. The amount of direct one-on-one personal instruction will vary depending on workload, personnel, holiday and conference time. Students will be encouraged to utilize self-learning teaching aids (i.e. teaching file, computer video disks, CD-ROMS, etc.) at each hospital. Special requests will be taken into consideration, where possible. Absences will be recorded (see “E” above).

MEDICINE

Education Coordinator: Ana Malbrecht, ana.malbrecht@lhsc.on.ca
Administrative Coordinator: Marika Wilton, marika.wilton@lhsc.on.ca

***NOTE**: After the lottery, ELECTIVES must be arranged through Marika, marika.wilton@lhsc.on.ca
London Health Sciences Centre, University Hospital, Room ALL 140, (519) 663-3511, extension 2

OBJECTIVES

Internal Medicine Objectives

1. Medical Expert/Decision Maker

A. Abdominal Pain

a) Knowledge: Students should be able to define, describe, and discuss:

i. Three principal types of abdominal pain:
- Visceral pain
- Somatoparietal or peritoneal pain
- Referred pain.

ii. Relative likelihood of the common causes of abdominal pain based on the pain pattern and the quadrant in which the pain is located.

iii. Diagnostic discrimination between common causes of abdominal pain based on history, physical exam, laboratory testing, and imaging procedures.

iv. Symptoms and signs indicative of an acute/surgical abdomen.

v. The influence of age, gender, menopausal status, and immunocompetency on the prevalence of different disease processes that may result in abdominal pain.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an appropriately complete medical history that differentiates among etiologies of disease, including:
- Chronology
- Location
- Radiation
- Character
- Intensity
- Duration
- Aggravating or alleviating factors
- Associated symptoms
- Pertinent information about previous abdominal or pelvic surgeries, chronic medical conditions, sexual activity, medications, and family history.

ii. Physical exam skills: Students should be able to perform a focused physical exam in patients who present with abdominal pain in order to:
- Establish a preliminary diagnosis of the cause
- Assess the severity of the patient's presenting symptoms and signs
- Determine the urgency of implementing diagnostic and treatment plans.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis of the most important and likely causes of a patient's abdominal pain and recognize specific history,

physical exam, and laboratory findings that distinguish between the following diagnoses or conditions:

- Appendicitis
- Cholecystitis (biliary colic)
- Pancreatitis
- Diverticulitis
- Peptic ulcer disease including perforation
- Gastroenteritis
- Hepatitis
- Irritable bowel syndrome
- Small bowel obstruction
- Acute mesenteric ischemia
- Inflammatory bowel disease
- Ruptured abdominal aortic aneurysm
- Ureteral stones (renal colic)
- Pelvic inflammatory disease
- Ruptured ectopic pregnancy
- Abdominal wall pain
- Referred pain.

iv. Laboratory interpretation: Students should be able to interpret specific diagnostic tests and procedures that are commonly ordered to evaluate patients who present with abdominal pain. Laboratory and diagnostic tests should include, when appropriate:

- CBC with differential
- UA
- Pregnancy test
- Stool for occult blood
- Hepatic function panel
- Amylase and lipase
- Abdominal obstructive series.

- Students should be able to define the indications for, and interpret (with consultation) the results of:
  - Abdominal ultrasound
  - Abdominal CT scan
  - Paracentesis fluid studies
  - Upper gastrointestinal endoscopy
  - Sigmoidoscopy/colonoscopy
  - Barium contrast studies
  - Radionuclide scan of the hepatobiliary system.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:

- Recognizing the role of narcotic analgesics and empiric antibiotics in treating selected patients who present with acute abdominal pain
- Determining when to consult a gastroenterologist or a surgeon
- Involving a surgeon as soon as possible when a patient is identified as having an acute abdomen
- Selecting various tests and procedures commonly used to diagnose patients who

present with symptoms of abdominal pain
- Recommending basic initial management plans for the various causes of abdominal pain listed in the differential diagnosis.

B. Altered Mental Status

a) Knowledge: Students should be able to define, describe, and discuss:

i. The differentiation of delirium, dementia, and depression.

ii. The pathophysiology, symptoms, and signs of the most common and most serious causes of altered mental status, including:
- Metabolic causes (e.g., hyper/hyponatremia, hyper/hypoglycemia, hypercalcemia, hyper/hypothyroidism, hypoxia/hypercapnea, B12 deficiency, hepatic encephalopathy, uremic encephalopathy, drug/alcohol intoxication/withdrawal, and Wernicke's encephalopathy)
- Structural lesions (e.g., primary or metastatic tumor, intracranial hemorrhage, subdural hematoma)
- Vascular (e.g., cerebrovascular accident, transient ischemic attack, cerebral vasculitis
- Infectious etiologies (e.g., encephalitis, meningitis, urosepsis, endocarditis, pneumonia, cellulites)
- Seizures/ post-ictal state
- Hypertensive encephalopathy
- Low perfusion states (e.g., arrhythmias, MI, shock, acute blood loss, severe dehydration)
- Miscellaneous causes (e.g., fecal impaction, postoperative state, sleep deprivation, urinary retention).

iii. The importance of thoroughly reviewing prescription medications over-the-counter drugs, and supplements and inquiring about substance abuse.

iv. The risk factors for developing altered mental status, including:
- Dementia
- Advanced age
- Substance abuse
- Comorbid physical problems such as sleep deprivation, immobility, dehydration, pain, and sensory impairment.

v. The diagnostic evaluation of altered mental status.

vi. Indications, contraindications, and complications of lumbar puncture.

vii. Principles of management of the common causes of altered mental status.

viii. Nonpharmacologic measures to reduce agitation and aggression, including:
- Avoiding the use of physical restraints whenever possible
- Using reorientation techniques
- Assuring the patient has their devices to correct sensory deficits
- Promoting normal sleep and day/night awareness
- Preventing dehydration and electrolyte disturbances
- Avoiding medications which may worsen delirium whenever possible
  - (e.g., anticholinergics, benzodiazepines, etc.).

ix. The risks of using physical restraints.

x. The risk and benefits of using low-dose high potency antipsychotics for delirium associated agitation and aggression.

b) Skills**:** Students should be able to demonstrate specific skills, including:

i. History-taking skills**:** Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of altered mental status including eliciting appropriate information from patients and their families regarding the onset, progression, associated symptoms, and level of physical and mental disability.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
    - Complete neurologic examination
    - Mental status examination
    - Fundoscopic examination.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology for altered mental status.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, when appropriate:
    - CBC with differential
    - Electrolytes, BUN/Cr, GLC, hepatic function panel, Ca
    - ABG
    - Toxicology screen
    - VDRL
    - Vitamin B12 and thiamine measurements
    - Thyroid function tests
    - Urinalysis and urine culture
    - Blood cultures
    - Cerebrospinal fluid analysis.
  - Students should be able to define the indications for and interpret (with consultation) the results of:
    - Cranial CT
    - Cranial MRI
    - Electroencephalogram.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
    - Recognizing that altered mental status in a older inpatient is a medical emergency and requires that the patient be evaluated immediately.
    - Writing appropriate fluid and replacement orders for patients with common electrolyte and metabolic disturbances.
    - Writing appropriate antibiotic orders for the treatment of common infectious etiologies.
    - Ordering appropriate nonpharmacologic and pharmacologic interventions for patients with acute altered mental status with accompanying agitation and aggression.
    - Determining when to obtain consultation from a neurologist or neurosurgeon.
    - Utilizing hospital and community resources for patients with permanent or disabling conditions to help assist their transfer back to the community or rehabilitation facility.

C. Anemia

a) Knowledge: Students should be able to define, describe, and discuss:

i. Classification of anemia based on red cell size:
  - **Microcytic:**
    - Iron deficiency
    - Thalassemic disorders
    - Sideroblastic anemia

- **Normocytic:**
  - Acute blood loss
  - Hemolysis
  - Anemia of chronic disease (e.g., infection, inflammation, malignancy)
  - Chronic renal insufficiency/erythropoietin deficiency
  - Bone marrow suppression (e.g., bone marrow invasion, aplastic anemia)
  - Hypothyroidism
  - Testosterone deficiency
- **Macrocytic:**
  - Ethanol abuse
  - B12 deficiency
  - Folate deficiency
  - Drug-induced
  - Reticulcytosis.
  - Liver disease.
  - Myelodysplastic syndromes.
  - Hypothyroidism.

ii. Morphological characteristics, pathophysiology, and relative prevalence of each of the causes of anemia.
iii. The meaning and utility of various components of the hemogram (e.g., hemoglobin, hematocrit, mean corpuscular volume, and random distribution width).
iv. The classification of anemia into hypoproliferative and hyperproliferative categories and the utility of the reticulocyte count/index.
v. The potential usefulness of the white blood cell count and red blood cell count when attempting to determine the cause of anemia.
vi. The diagnostic utility of the various tests for iron deficiency (e.g., serum iron, total iron binding capacity, transferrin saturation, ferritin).
vii. The genetic basis of some forms of anemia.
viii. Indications, contraindications, and complications of blood transfusion.

b) Skills: Students should be able to demonstrate specific skills, including:
i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:
  - Constitutional and systemic symptoms (e.g., fatigue, weight loss)
  - History of gastrointestinal bleeding or risk factors for it.
  - Abdominal pain.
  - Prior history of anemia or other blood diseases.
  - Medications.
  - Diet.
  - Alcohol use.
  - Menstrual history.
  - Family history of anemia or other blood diseases.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
  - Pallor (e.g., palms, conjunctiva, nail beds).
  - Mouth (e.g., glossitis, cheilosis).
  - Hyperdynamic precordium, systolic flow murmur.
  - Lymph nodes.
  - Spleen.

- Nervous system.

iii. Differential diagnosis: Students should be able to generate a list of the most important and most common causes of anemia, recognizing specific history, physical exam, and laboratory findings that suggest a specific etiology.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them when appropriate:
    - Hemoglobin and hematocrit.
    - Red cell indices (e.g., MCV and random distribution width).
    - White blood cell and platelet count.
    - Reticulocyte count.
    - Iron studies (serum iron, TIBC, ferritin, transferrin).
    - Serum B12 and folate.
    - Haptoglobin.
    - Lactic dehydrogenase (LDH).
    - Hemoglobin electrophoresis.
    - Blood smear.
  - Students should be able to define the indications for and interpret (with consultation) results of:
    - Bone marrow biopsy.

D. Chest Pain

a) Knowledge: Students should be able to define, describe and discuss:

i. Symptoms and signs of chest pain that may be due to an acute coronary syndrome such as unstable angina or acute myocardial infarction.

ii. Symptoms and signs of chest pain that are characteristic of angina pectoris.

iii. Symptoms and signs of chest pain due to other cardiac causes such as:
    - Atypical or variant angina (coronary vasospasm, Prinzmetal angina).
    - Pericarditis.
    - Aortic dissection.
    - Valvular heart disease (aortic stenosis, mitral valve prolapse).
    - Non-ischemic cardiomyopathy.
    - Syndrome X.

iv. Symptoms and signs of chest pain due to gastrointestinal disorders such as:
    - Esophageal disease (GERD, esophagitis, esophageal dysmotility).
    - Biliary disease (cholecystitis, cholangitis).
    - Peptic ulcer disease.
    - Pancreatitis.

v. Symptoms and signs of chest pain due to pulmonary disorders such as:
    - Pneumonia.
    - Spontaneous pneumothorax.
    - Pleurisy.
    - Pulmonary embolism.
    - Pulmonary hypertension/cor pulmonale.

vi. Symptoms and signs of chest pain due to musculoskeletal causes such as:
    - Costochondritis.
    - Rib fracture.
    - Myofascial pain syndromes.
    - Muscular strain.
    - Herpes zoster.

vii. Symptoms and signs of chest pain due to psychogenic causes such as:

- Panic disorders.
- Hyperventilation.
- Somatoform disorders.

viii. Factors that may be responsible for provoking or exacerbating symptoms of ischemic chest pain by:
- Increasing myocardial oxygen demand.
- Tachycardia or tachyarrhythmia.
- Hypertension.
- Increased wall stress (aortic stenosis, cardiomyopathy).
- Hyperthyroidism.
- Anemia.
- Hypoxemia.

ix. Risk factors for the development of coronary heart disease:
- Age and gender.
- Family history of sudden death or premature CAD.
- Personal history of peripheral vascular or cerebrovascular disease.
- Smoking.
- Lipid abnormalities (includes dietary history of saturated fat and cholesterol).
- Diabetes mellitus.
- Hypertension.
- Obesity.
- Sedentary lifestyle.
- Cocaine use.
- Estrogen use.
- Chronic inflammation.

x. Physiologic basis and/or scientific evidence supporting each type of treatment, intervention or procedure commonly used in the management of patients who present with chest pain.

xi. Role of a critical pathway or practice guideline in delivering high quality, cost-effective care for patients presenting with symptoms of chest pain in the outpatient clinic, emergency room or hospital.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an appropriately complete medical history that differentiates among the common etiologies of chest pain.
- The initial medical history should allow students to categorize the patients' symptoms as angina pectoris, atypical angina or non-cardiac chest pain. (PC, CS)
- Specifically, the medical history of a patient with chest pain should contain information about those clinical characteristics that are typical of angina pectoris:
- Substernal location.
- Precipitated by exertion.
- Relieved by rest or nitroglycerin.
- Onset, duration, severity, radiation, presence or absence of associated symptoms (such as dyspnea, diaphoresis or lightheadedness).
- The history of a patient with chest pain should also contain information about:
  - Risk factors for coronary heart disease.
  - Previous history of ischemic heart disease or valvular heart disease (rheumatic fever, cardiac murmurs).
  - Previous history of peripheral vascular disease or cerebrovascular disease.

ii. Physical exam skills: Students should be able to perform a focused physical exam that includes the following elements:
- Accurate measurement of arterial blood pressure and recognition of the typical blood pressure

findings that occur in patients with aortic stenosis, aortic insufficiency, and pulsus paradoxus)
- Assessment of major arterial pulses for abnormalities, including bruits.
- Assessment of the neck veins for jugular venous distention and, when necessary, evaluation for abdominal jugular reflux.
- Assessment of the conjunctiva and optic fundus.
- Assessment of the extremities to ascertain skin condition, including color, temperature and the presence of edema, xanthomas, cyanosis and clubbing.
- Assessment of the lungs for crackles, rhonchi, rubs and decreased breath sounds.
- Inspection and palpation of the anterior chest to identify right and left sided heaves, lifts, and thrills.
- Auscultation of the heart to determine rhythm, intensity of heart sounds, splitting of S2 and the presence of rubs, gallops (S3, S4, summation) or extra heart sounds (e.g., clicks).
- Auscultation of the heart to detect the presence of heart murmurs. When a heart murmur is present, students should be able to:
    - Identify timing (systolic vs. diastolic, holosystolic vs. ejection).
    - Describe pitch, location and pattern of radiation.
    - Gauge significance (innocent vs. pathologic, sclerosis vs. stenosis).

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis and recognize specific history, physical exam, and laboratory findings that suggest a diagnosis of myocardial ischemia rather than a non-ischemic cause of chest pain (GI, pulmonary, musculoskeletal, psychogenic or undetermined).

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, when appropriate:
    - Cardiac biomarkers indicative of myocardial necrosis.
    - 12-lead ECG.
    - Chest radiograph.
    - ABG.
- Students should be able to define the indications for, and interpret (with consultation) the results of the following diagnostic tests and procedures:
    - Echocardiogram (transthoracic and transesophageal).
    - Exercise stress test.
    - Stress thallium (myocardial perfusion scan).
    - Dobutamine stress echocardiography.
    - Coronary angiography.
    - Ventilation/perfusion lung (V/Q) scan.
    - Pulmonary embolism protocol CT scan.
    - Pulmonary angiography.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
- Identification of the indications, contraindications, mechanisms of action, adverse reactions, significant interactions, and relative costs of the following medications:
    - Anti-platelet agents (aspirin, clopidogrel)
    - Nitroglycerin and long-acting nitrates
    - Beta-blockers
    - Angiotensin-converting enzyme inhibitors
    - Calcium channel blockers
    - Antithrombotic therapy (heparin, warfarin)
    - Glycoprotein IIb/IIIa inhibitors
    - Lipid-lowering agents

E. Dyspnea

a) Knowledge: Students should be able to define, describe, and discuss:

i. Major organ systems/pathologic states causing dyspnea and their pathophysiology, including:
- Cardiac.
- Pulmonary.
- Anemia/hypovolemia.
- Acid-base disorders and other metabolic derangements.
- Neuromuscular weakness.
- Central neurologic derangements.

ii. The symptoms, signs, and laboratory values associated with respiratory failure and ventilatory failure.

iii. The alveolar-arterial oxygen gradient and the pathophysiologic states that can alter it.

iv. The potential risks of relying too heavily on pulse oximetry as the sole indicator of arterial oxygen content.

v. The common causes of acute dyspnea, their pathophysiology, symptoms, and signs, including:
- Pulmonary edema.
- Pulmonary embolism.
- Pneumonia.
- Acute exacerbation of COPD.
- Asthma.
- Cardiac ischemia.
- Pneumothorax.
- Anxiety.

vi. The common causes of chronic dyspnea their pathophysiology, symptoms, and signs, including:
- Congestive heart failure.
- COPD.
- Pulmonary parenchymal disease.
- Pulmonary vascular disease.
- Anemia.
- Neuromuscular weakness.

vii. Basic treatment options for the common causes of acute and chronic dyspnea.

viii. The utility of supplemental oxygen therapy and the potential dangers of overly aggressive oxygen supplementation in some pathophysiologic states.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:
- Quantity, quality, severity, duration, ameliorating/exacerbating factors of the dyspnea.
- Associated symptoms such as fevers, chills, sweats, orthopnea, paroxysmal nocturnal dyspnea, wheezing, edema, chest pain, cough, sputum production, hemoptysis, palpitations, nausea, anxiety, dizziness, orthostasis, weakness.
- History of pulmonary, cardiac, neuromuscular/neurologic, renal, hepatic, and coagulopathic disorders.
- Risk factors for deep vein thrombosis/pulmonary embolism.
- Ingestion of drugs and toxic substances, administration of IV fluids.
- smoking and environmental exposures.

ii. Physical exam skills**:** Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
- Accurately determining respiratory rate and level of respiratory distress. Assessing the use of

accessory muscles for breathing.
- Accurately measuring pulsus paradox.
- Identifying bronchial breath sounds, rales, rhonchi, wheezes, and subcutaneous emphysema.
- Identifying signs of pulmonary consolidation and hyperresonance.
- Identifying signs of pleural effusion.
- Identifying signs of elevated central venous pressure.
- Identifying signs of hypovolemia.
- Identifying S3 gallop, edema, and pallor.
- Identifying signs of deep vein thrombosis.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology of dyspnea.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them,
- Electrolytes, BUN/Cr, GLC.
- Pulse oximitry.
- ABG.
- Chest radiograph.
- 12-lead ECG.
- Pulmonary function tests.) Students should be able to define the indications for and interpret (with consultation) the results of:
  - Ventilation perfusion scintigraphy.
  - Chest CT.
  - Venous Doppler studies.
  - Cardiac stress test.
  - Echocardiography.

F. Fever

a) Knowledge: Students should be able to define, describe, and discuss:

i. Physiology of the acute febrile response, including the:
- The differences in clinical manifestations between immunocompetent and immunocompromised patients.

ii. Risk factors and co-morbidities that are important in determining the host response to infection (e.g., neutropenia, asplenia, cirrhosis, alcoholism, diabetes, corticosteroid use, malnutrition, T cell dysfunction)

iii. Etiology of fever in special populations, including patients with a history of:
- Neutropenia due to cancer-related myelosuppression.
- HIV disease.
- Intravenous drug abuse.
- Recent international travel or immigration.
- Concomitant skin rash and lymphadenopathy.

iv. Pathophysiology and clinical presentation of patients with sepsis syndromes

v. Common causes of prolonged fever without apparent source, including:
- FUO in a normal host.
- Nosocomial FUO.
- Neutropenic FUO.
- FUO associated with HIV disease.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate

medical history that differentiates among etiologies of disease, including:

- Chronology, duration and pattern of fever.
- Associated symptoms.
- Immune status and baseline co-morbidities.
- Immunization status.
- Relevant history of exposures.
- Occupational, travel, family, and sexual history.
- Medication history, including use of over-the-counter and illicit drugs.

ii. Physical exam skills**:** Students should be able to perform a complete physical exam to determine the severity of disease and establish a preliminary hypothesis about the cause of fever.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology:

- Infection.
- Rheumatologic disease/inflammatory disorder.
- Malignancy.
- Drug reaction.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them when appropriate:

- CBC with differential.
- UA with exam of urinary sediment.
- Chest radiography.
- Blood cultures.
- Urine cultures.
- Sputum Gram stain and cultures.
- Sputum AFB stain and culture.
- ESR and/or specific rheumatologic tests.
- PPD.
- Cerebrospinal fluid analysis (color, opening pressure, chemistries, cell counts, staining, cultures, cytology, cryptococcal antigen, VDRL).
- Chemistries, Gram stain, and culture of abnormal fluid collections (e.g., pleural effusion, ascites, abscesses.
- Stool culture of enteric pathogens.
- Stool Clostridium difficile toxin assay.
- Stains and cultures from the throat, urethra, anus, cervix, vagina.

- Students should be able to define the indications for and interpret (with consultation) the results of:
  - CT imaging.
  - Echocardiography.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:

- Developing an appropriate evaluation plan for patients with fever including ordering and interpreting appropriate laboratory and radiographic studies.
- Assessing the severity of presentation based on the history, host factors, physical exam and laboratory results and recognizing presentations that need immediate attention.
- Developing an appropriate treatment plan for patients with fever including the selection of an initial, empiric treatment regimen for neutropenic patients with fever and/or patients with life threatening sepsis.

- Determining when to obtain consultation from an appropriate specialist.)

G. Fluid and Electrolyte Disorders

a) Knowledge: Students should be able to define, describe and discuss:

i. The pathophysiology, presenting symptoms and signs and differential diagnosis of:
   - Hypo- and hypervolemia.
   - Hypo- and hypernatremia.
   - Hypo- and hyperkalemia.
   - Hypo- and hypercalcemia.
   - Simple and mixed acid-base disorders.
   - Respiratory acidosis and alkalosis.
   - Metabolic acidosis and alkalosis.

ii. The importance of total body water and its distribution.

iii. The differential diagnosis of hypo- and hypernatremia in the setting of volume depletion, euvolemia, and hypervolemia.

iv. How to distinguish hyponatremia from pseudohyponatremia.

v. How to identify spurious hyperkalemia or acidosis-related hyperkalemia.

vi. Risks of too rapid or delayed therapy for hyponatremia.

vii. The most common causes of respiratory acidosis, respiratory alkalosis, metabolic acidosis and metabolic alkalosis.

viii. How to calculate the anion gap and explain its relevance to determining the cause of a metabolic acidosis.

ix. Changes in total body water distribution that occur with aging.

x. How altered mental status can contribute to electrolyte disorders.

xi. Tests to use in the evaluation of fluid, electrolyte, and acid-base disorders.

xii. Indications for obtaining an arterial blood gas.

xiii. The types of fluid preparations to use in the treatment of fluid and electrolyte disorders.

b) Skills**:** Students should demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:
   - Eliciting appropriate information from patients with volume overload, including recent weight gain, edema or ascites, symptoms of heart failure, dietary sodium intake, changes in medications, noncompliance and intravenous fluid regimens.
   - Eliciting appropriate information from patients with volume depletion, including recent weight loss, thirst, gastrointestinal losses, urinary losses, oral intake, insensible losses, and intravenous fluid regimens.
   - Eliciting appropriate information from patients with electrolyte problems, including use of diuretics and other medications, gastrointestinal losses, and history of relevant medical conditions (e.g., heart failure, liver disease, renal disease, pulmonary disease, central nervous system disease, and malignancy).

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
   - Measurement of orthostatic vital signs.
   - Identification of signs of volume overload including peripheral edema, pulmonary edema, ascites, edema.
   - Identification of signs of volume depletion including tachycardia, orthostatic hypotension, dry mucous membranes, poor skin turgor.

- Identification of signs of sodium disorders including lethargy, weakness, encephalopathy, delirium, seizures.
- Identification of signs of potassium disorders including weakness, fatigue, constipation, ileus, cramping, tetany, hypo- or hyperreflexia.
- Identification of signs of calcium disorders including cramping, tetany, Chvostek's and Trousseau's sign, seizures, anorexia, constipation, polyuria, hypo- or hyperreflexia, stupor, coma.

iii. Laboratory interpretation**:** Students should be able to recommend when to order diagnostic and laboratory tests as listed below and be able to interpret results

- Serum electrolytes, urea, creatinine.
- Anion gap.
- Arterial blood gases.
- Serum and urine osmolality.
- Urinary sodium.
- Fractional excretion of sodium.
- ECG findings in hyper- and hypokalemia.
- Serum urea to creatinine ratio.
- CBC, ferritin.
- Performing and interpreting a urinalysis, including microscopic examination for casts, red blood cells, white blood cells, and crystals.
- Calculating creatinine clearance using the Cockcroft-Gault or MDRD "modification of diet in renal disease study") equations.
- Serum parathyroid hormone level.
- Renal ultrasonography.

iv. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:

- Writing appropriate fluid orders for the treatment of hypo- and hypervolemia, hypo- and hypernatremia, hypo- and hyperkalemia, hypo- and hypercalcemia.
- Writing appropriate orders for replacing sodium, potassium, calcium, phosphates, and magnesium.
- Writing appropriate orders for correcting hyperkalemia, hypercalcemia, hyperphosphatemia and hypermagnesemia.
- Calculating the water deficit that needs to be corrected to treat hypernatremia.
- Identifying indications for administration of bicarbonate.
- Designing an appropriate management plan for initial management of ARF, including volume management, dietary recommendations, drug dosage alterations, electrolyte monitoring, and indications for dialysis.
- Developing a management plan to effectively treat HTN and DM.
- Recommending treatment with phosphate binders, calcium replacement, and vitamin D replacement.
- Recommending treatment for anemia secondary to CKD.
- Recommending acute treatment for hyperkalemia.
- Determining when to obtain consultation from a nephrologist.
- Using a cost-effective approach based on the differential diagnosis.
- Accessing and utilizing appropriate information systems and resources to help delineate issues related to renal failure.
- Incorporating patient preferences.

H. Acute Kidney Injury and Chronic Kidney Disease

a) Knowledge: Students should be able to define, describe and discuss:

i. The distinction between the three major pathophysiologic etiologies for acute renal failure (ARF):
- Decreased renal perfusion (prerenal).
- Intrinsic renal disease (renal).
- Acute renal obstruction (postrenal).

ii. The pathophysiology of the major etiologies of "prerenal" ARF, including:
- Hypovolemia.
- Decreased cardiac output.
- Systemic vasodilation.
- Renal vasoconstriction.

iii. The pathophysiology of the major etiologies of intrinsic "renal" ARF, including:
- Vascular lesions.
- Glomerular lesions.
- Interstitial nephritis.
- Intra-tubule déposition/obstruction.
- Acute tubular necrosis (ATN).

iv. The pathophysiology of the major etiologies of "postrenal" ARF, including:
- Urethral (e.g., tumors, calculi, clot, sloughed papillae, retroperitoneal fibrosis, lymphadenopathy).
- Bladder neck (e.g., tumors, calculi, prostatic hypertrophy or carcinoma, eurogenic).
- Urethral (e.g., stricture, tumors, obstructed indwelling catheters).

v. The pathophysiology and clinical findings of uremia.

vi. The natural history, initial evaluation and treatment, and complications of ARF.

vii. The most common etiologies of chronic kidney disease (CKD):
- DM.
- Hypertension.
- Glomerulonephritis.
- Polycystic kidney disease.
- Autoimmune diseases (e.g., systemic lupus erythematosus).

viii. The staging scheme for CKD.

ix. The significance for proteinuria in CKD.

x. The use of ACE-Is and ARBs in the management of CKD.

xi. The importance of secondary hyperparathyroidism in CKD.

xii. The pathophysiology of anemia in CKD.

xiii. The value of glycemic and hypertension control in limiting the progression of CKD.

xiv. The value of CAD risk factor modification in patients with CKD, particularly those treated with dialysis.

xv. The basic principles of renal replacement therapy (e.g., hemodialysis and peritoneal dialysis) as well as the complications.

b) Skills: Students should demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:
- Eliciting an age-appropriate history that distinguishes among the three major reasons for ARF (pre-renal, renal, post-renal), including the predisposing conditions, nephrotoxic drugs or agents, and systemic disease and the major causes of CKD.
- Eliciting appropriate information from patients with volume overload, including recent weight gain, edema or ascites, symptoms of heart failure, dietary sodium intake,

changes in medications, noncompliance and intravenous fluid regimens.
- Eliciting appropriate information from patients with volume depletion, including recent weight loss, thirst, gastrointestinal losses, urinary losses, oral intake, insensible losses, and intravenous fluid regimens.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
- The determination of a patient's volume status through estimation of the central venous pressure using the height of jugular venous distention and measurement of pulse and blood pressure in the lying/standing position.
- Palpation and percussion of the bladder to recognize bladder distention.
- Palpation of the prostate.
- Determination of the presence of pulmonary edema, peripheral edema, ascites, and signs of heart failure.
- Findings consistent with uremia.
- Examination for evidence of systemic disease, including but not limited to: skin, joints, and nails.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history, physical exam, and laboratory findings that distinguish between:
- Acute Renal Failure and Chronic Kidney Disease

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them when appropriate.
- Serum electrolytes, urea, creatinine.
- Anion gap.
- Arterial blood gases.
- Serum and urine osmolality.
- Urinary sodium.
- Fractional excretion of sodium.
- ECG findings in hyper- and hypokalemia.
- Serum urea to creatinine ratio.
- CBC, ferritin.
- Performing and interpreting a urinalysis, including microscopic examination for casts, red blood cells, white blood cells, and crystals.
- Calculating creatinine clearance using the Cockcroft-Gault or MDRD ("modification of diet in renal disease study") equations.
- Serum parathyroid hormone level.
- Renal ultrasonography.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
- hypercalcemia, hyperphosphatemia.
- Identifying indications for administration of bicarbonate.
- Designing an appropriate management plan for initial management of ARF, including volume management, dietary recommendations, drug dosage alterations, electrolyte monitoring, and indications for dialysis.
- Developing a management plan to effectively treat HTN and DM.
- Recommending treatment with phosphate binders, calcium replacement, and vitamin D replacement.
- Recommending treatment for anemia secondary to CKD.
- Recommending acute treatment for hyperkalemia.
- Determining when to obtain consultation from a nephrologist.

I. Gastrointestinal Bleeding

a) Knowledge: Students should be able to define, describe, and discuss:

i. The common causes for and symptoms of upper and lower gastrointestinal blood loss, including:

- Esophagitis/esophageal erosions.
- Mallory Weiss tear.
- Peptic and duodenal ulcer disease.
- Esophageal/gastric varices.
- Erosive gastritis.
- Arteriovenous malformations.
- Gastrointestinal tumors, benign and malignant.
- Diverticulosis.
- Ischemic colitis.
- Hemorrhoids.
- Anal fissures.

ii. The distinguishing features of upper versus lower GI bleeding.

iii. The indications for inpatient versus outpatient evaluation and treatment.

iv. The principles of stabilization and treatment of acute massive GI blood loss.

v. The role of contributing factors in GI bleeding such as H. pylori infection; NSAIDs, alcohol, cigarette use, coagulopathies; and chronic liver disease.

b) Skills: Students should demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate history that differentiates among etiologies of disease, including:

- Features that distinguish upper from lower GI bleeding.
- Quantification of degree of blood loss.
- Chronology and duration of bleeding.)
- Associated symptoms.
- Relevant past medical history.
- Medication history, including use of tobacco and alcohol.

ii. Physical exam skills: Students should be able to perform a physical examination to establish the diagnosis and severity of disease, including:

- Postural blood pressure and pulse.
- Abdominal palpation for organomegaly, masses, and tenderness.
- Search for stigmata of chronic liver disease.
- Anal and rectal examination.

iii. Differential diagnosis: Students should be able to generate a differential diagnosis recognizing specific history and physical examination findings that suggest a specific etiology for GI bleeding.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences. Laboratory and diagnostic tests should include, when appropriate:

- Stool and gastric fluid tests for occult blood.
- CBC.
- PT/PTT.
- Hepatic function panel.
- Tests for Helicobacter pylori.

- Students should be able to define the indications for and interpret (with consultation) results of:

- Esophagogastroduodenoscopy (EGD).
- Colonoscopy.
- Barium studies of the gastrointestinal tract.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
   - Establishing adequate venous access.
   - Administering crystalloid fluid resuscitation).
   - Ordering blood and blood product transfusion.
   - Determining when to obtain consultation from a gastroenterologist or a general surgeon.
   - Accessing and utilizing appropriate information systems and resources to help delineate issues related to gastrointestinal bleeding.
   - Outlining long-term management when appropriate (e.g., Helicobacter pylori eradication, antacid, H-2 blocker or proton pump inhibitor therapy, smoking /alcohol cessation, NSAID restriction, and dietary modification.

J. Upper Respiratory Complaints

a) Knowledge: Students should be able to define, describe, and discuss:

i. A rational approach to the common URIs: nasal congestion, rhinorrhea, facial pain/tenderness, cough, sputum production, sore throat, and ear pain.
ii. Common constitutional symptoms that accompany URIs: generalized weakness, fatigue, malaise, headache, mild myalgias, and modest fever.
iii. The microbiology of URIs, highlighting the relative frequencies of viral and bacterial etiologies.
iv. The most common microbiologic agents that cause the common URIs.
v. The pathophysiology and typical clinical presentation of the common URIs:
   - Common cold.
   - Acute bronchitis.
   - Pharyngitis.
   - Acute sinusitis.
   - Otitis media.
vi. The pathophysiologic similarities between the common cold and acute sinusitis.
vii. The clinical features and microbiology of acute compared to chronic sinusitis.
viii. The pathophysiology and symptomatology of allergic rhinitis and the clinical features that may help differentiate it from the common cold and acute sinusitis.
ix. The clinical features that may help differentiate the common URIs from influenza.
x. The pathophysiology and clinical features of acute compared to chronic bronchitis.
xi. The pathophysiology and clinical features of acute bronchitis compared to pneumonia.
xii. The pathophysiology and clinical features of otitis media and Eustachian tube malfunction.
xiii. The signs and symptoms that may help distinguish viral from bacterial pharyngitis.
xiv. Symptomatic treatment for URIs and the major side effects/contraindications for these treatments.
xv. The general role of antibiotics in the treatment of URIs and specific evidence-based indications for them.
xvi. The basic elements of the treatment of allergic rhinitis.
xvii. The use of antiviral agents in the prophylaxis and treatment of influenza.

b) Skills: Students should be able to demonstrate specific skills, including:
   - History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:
   - The predominant symptom (nasal congestion/rhinorrhea, purulent nasal discharge with facial pain/tenderness, sore throat, cough with or without sputum, sore throat or

ear pain).
- Constitutional symptoms.
- Symptoms of potential pneumonia.
- History of or symptoms of serious cardiopulmonary diseases (e.g., asthma, chronic obstructive pulmonary disease, congestive heart failure) that may alter the treatment plan.

i. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
   - Examination of the nasal cavity, pharynx, and sinuses.
   - Otoscopic examination.
   - Evaluation of the head and neck for lymphadenopathy.
   - Auscultation of the lungs to distinguish pulmonary consolidation, pleural effusion, pulmonary congestion, and chronic obstructive pulmonary disease.

ii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology of upper respiratory complaints:
   - Common cold.
   - Acute sinusitis.
   - Chronic sinusitis.
   - Allergic rhinitis.
   - Pharyngitis.
   - Otitis media.
   - Otitis external.
   - Acute bronchitis.
   - Chronic bronchitis.
   - Influenza.
   - Pneumonia.
   - Infectious mononucleosis.

iii. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences Laboratory and diagnostic tests should include, when appropriate:
   - CBC with differential.
   - Rapid strep test.
   - Throat culture.
   - Chest radiograph.
   - PFTs.
   - Monospot/heterophile antibody.

iv. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
   - Determining when to obtain a chest radiograph.
   - Determining when to prescribe antibiotics.
   - Selecting the most appropriate antibiotic for acute bacterial sinusitis, streptococcal pharyngitis, and bacterial otitis media.
   - Prescribing symptomatic treatments.
   - Determining when to obtain consultation from an allergist, otolaryngologist, or pulmonologist.
   - Using a cost-effective approach based on the differential diagnosis.

- Accessing and utilizing appropriate information systems and resources to help delineate issues related to URIs. .

K. Acute Myocardial Infarction

a) Knowledge: Students should be able to define, describe, and discuss:

i. The primary and secondary prevention of ischemic heart disease through the reduction of cardiovascular risk factors (e.g., controlling hypertension and dyslipidemia, aggressive diabetes management, avoiding tobacco, and aspirin prophylaxis).
ii. The basic principles of the role of genetics in CAD.
iii. Pathogenesis, signs, and symptoms of the acute coronary syndromes:
    - Unstable angina.
    - Non-ST-elevation myocardial infarction (NSTEMI).
    - ST-elevation myocardial infarction (STEMI).
iv. Atypical presentations of cardiac ischemia/infraction.
v. The typical clinical course of the acute coronary syndromes.
vi. ECG findings and macromolecular markers (myoglobin, CK-MB, Troponin-I, Troponin-T) of acute ischemia/MI.
vii. The utility of echocardiography in acute MI.
viii. The importance of monitoring for and immediate treatment of ventricular fibrillation in acute MI.
ix. Therapeutic options for acute MI and how they may differ for NSTEMI and STEMI, including:
    - Aspirin.
    - Morphine.
    - Nitroglycerine.
    - Oxygen.
    - Heparin.
    - Antiplatelet agents (glycoprotein IIb/IIIa inhibitors).
    - Beta-blockers.
    - ACE-I/ARB.
    - HMG-CoA reductase inhibitors.
    - Thrombolytic agents.
    - Emergent cardiac catheterization with percutaneous coronary intervention.
x. Pathogenesis, signs, and symptoms of the complications of acute MI, including arrhythmias, reduced ventricular function, cardiogenic shock, pericarditis, papillary muscle dysfunction/rupture, acute valvular dysfunction, and cardiac free wall rupture.
xi. The general approach to the evaluation and treatment of ventricular tachycardia and fibrillation.
xii. The importance of post-MI risk stratification, including the burden of residual coronary disease and assessment of left ventricular function.
xiii. Basic principles of cardiac rehabilitation.
xiv. Indications for coronary artery bypass grafting (CABG).

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:
    - Cardiac risk factors.
    - Location, duration, intensity, exacerbating/ameliorating factors, radiation of chest pain.
    - Symptoms associated with chest pain (e.g., nausea, emesis, dyspnea, diaphoresis, palpitations, dizziness, syncope, heartburn belching, etc.).
ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and

severity of disease including:

- Recognition of dyspnea and anxiety.
- Accurate measurement of vital signs.
- Examination of the heart and vascular system.
- Examination of the lungs.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology of chest pain:

- Stable angina.
- Coronary vasospasm.
- Unstable angina.
- Acute MI.
- Pericarditis.
- Aortic dissection.
- Pulmonary embolism.)
- Other noncardiac causes of chest pain.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, when appropriate:

- ECG.
- Chest radiograph.
- Macromolecular markers (myoglobin, CK-MB, Troponin-I, Troponin-T).
- Students should be able to define the indications for and interpret (with consultation) the results of:
- Echocardiogram.
- Cardiac stress testing.
- Coronary angiography.

v. Communication skills: Students should be able to:

- Communicate the diagnosis, treatment plan, and subsequent follow-up to patients.
- Elicit questions from the patient and his or her family about the diagnostic and management plan.
- Educate patients about modifying cardiac risk factors

vi. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:

- Medical management of acute MI.
- CCU monitoring.
- Indications for and complications of thrombolytic therapy, cardiac catheterization with percutaneous coronary intervention, and CABG.
- Proper pre-discharge risk stratification.
- Secondary risk factor modification.
- Determining when to obtain consultation from a cardiologist and cardiothoracic surgeon.
- Using a cost-effective approach based on the differential diagnosis.
- Accessing and utilizing appropriate information systems and resources to help delineate issues related to acute MI.
- Incorporating patient preferences.

L. Common Cancers

a) Knowledge: Students should be able to define, describe, and discuss:

i. Primary prevention measures for common cancers.

ii. Current screening recommendations for skin, colorectal, lung, breast, cervical, and prostate cancer.

iii. Principle clinical presentations, clinical courses, complications, and causes of death for the most common cancers (e.g., skin, colorectal, lung, breast, cervical, and prostate).
iv. Basic methods of initial evaluation, including the sensitivity and specificity of basic diagnostic studies and indication for their use, including:
    - Indications for skin biopsy in a patient with a suspicious skin lesion.
    - Indications for colonoscopy in individuals a risk for colon cancer.
    - Indications for breast biopsy in a patient with a breast nodule or abnormal screening mammogram.
    - Indications for a lymph node biopsy in a patent with suspicious lymphadenopathy.
    - Initial cost-effective workups for: isolated pleural effusion, pulmonary nodule, liver nodule, prostate nodule, elevated prostate-specific antigen, testicular nodule, stool test positive for occult blood, abnormal Pap smear, and other findings suggestive of gastrointestinal and urogenital cancers.
v. Genetic considerations of selected cancers (e.g., hereditary nonpolyposis colon cancer, familial adenomatous polyposis, BRCA1/BRCA2, HER2, Philadelphia chromosome/BRC-ABL).
vi. The role of human papilloma virus in cervical cancer.
vii. The similarities and differences between curative and palliative cancer care.
viii. The principles of palliative care and hospice care.
ix. Symptoms sometimes seen during end-of-life care and the basic principles of their management (e.g., pain, dyspnea, nausea and vomiting, anorexia, fatigue, depression, delirium, constipation).

b) Skills: Students should be able to demonstrate specific skills, including:
i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:
    - Unintentional weight loss, fever, bone pain.
    - Sun exposure history, abnormal skin lesions.
    - Blood in the stool, alterations in bowel movements, abdominal pain, abdominal mass.
    - Smoking, cough, hemoptysis, chest pain, dyspnea.
    - Breast nodules and secondary signs of breast cancer.
    - Abnormal vaginal bleeding.
    - Abnormal urinary symptoms.
    - Lymphadenopathy.
ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
    - Skin examination.
    - Digital rectal examination.
    - Breast examination.
    - Lymph node examination.
    - Male genital examination and prostate examination.
    - Pelvic examination and Pap smear.
iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology for:
    - Unintentional weight loss.
    - Fever.
    - Abnormal skin lesions.
    - Occult blood positive stool.
    - Colorectal mass.
    - Chronic cough, hemoptysis, pulmonary nodule, and pleural effusion.
    - Breast mass.

- Abnormal Pap smear.
- Abdominal or pelvic mass.
- Prostate nodule and elevated prostate specific antigen.
- Lymphadenopathy.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences. Laboratory and diagnostic tests should include, when appropriate:

- CBC.
- Electrolytes, BUN/Cr, Ca, hepatic function panel.
- Stool occult blood testing.
- PSA. Students should be able to define the indications for and interpret (with consultation) the significance of the results of:
    - Skin biopsy.
    - Mammogram.
    - Breast biopsy.
    - Colon/rectal biopsy.
    - Lung biopsy.
    - Prostate biopsy.
    - Lymph node biopsy.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:

- Initial work-up of the symptom, sign, or abnormal laboratory value suspected to be due to cancer.
- Provision of support and information for the patient.
- Coordination of care for workup.
- Determining when to obtain consultation from appropriate specialists.
- Appropriately assessing and treating pain when necessary with non-narctoic and narcotic analgesics.
- Anticipating and treating narcotic side effects if necessary.
- Adjusting the therapeutic plan when goals of care change (e.g., a shift toward palliative care).
- Alleviation of symptoms sometimes seen during end of life care (e.g., pain, dyspnea, nausea and vomiting, anorexia, fatigue, depression, delirium, constipation).
- Utilizing supportive care or hospice service when appropriate.

M. COPD/Obstructive Airways Disease

a) Knowledge: Students should be able to define, describe, and discuss:

i. The epidemiology, risk factors, symptoms, signs, and typical clinical course of the common forms of COPD, including chronic bronchitis and emphysema.

ii. Common causes of acute exacerbations of COPD (AECOPD), including:

- Acute infectious bronchitis.
- Pneumonia.
- Pulmonary edema.
- Poor air quality (e.g., ozone, pollutants, tobacco smoke).
- Occupational exposures.
- Medical noncompliance.

iii. The etiology, pathogenesis, evaluation, and management of hypoxemia and hypercapnia.

iv. The genetics and role of alpha-1 antitrypsin deficiency in some patients with emphysema.

v. The epidemiology, risk factors, symptoms, signs, and typical clinical course of asthma.
vi. Allergic and non-allergic factors that may precipitate bronchospasm and exacerbate asthma, including:
    - Grass and tree pollen.
    - Animal dander.
    - Cockroaches.
    - Dust mites.
    - Allergic rhinitis/post-nasal drip.
    - Acute/chronic infectious sinusitis.
    - Acute infectious bronchitis.
    - Pneumonia.
    - Pulmonary edema.
    - Exercise.
    - Anxiety/stress.
    - Poor air quality (e.g., ozone, pollutants, tobacco smoke).
    - Occupational exposures.
    - Medical noncompliance.
vii. Therapies for COPD and asthma, including:
    - Beta-agonist bronchodilators.
    - Anticholinergic bronchodilators.
    - Leukotriene inhibitors.
    - Mast cell stabilizers.
    - Theophylline.
    - Inhaled corticosteroids.
    - Systemic corticosteroids.
    - Antimicrobial agents.
    - Supplemental oxygen.
    - Immunotherapy.
viii. The indications for and the efficacy of influenza and pneumococcal vaccines.

b) Skills: Students should be able to demonstrate specific skills, including:
i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease including:
    - Existence, duration, and severity of dyspnea, orthopnea, paroxysmal nocturnal dyspnea, cough, sputum production, wheezing, fever, chills, sweats, chest pain, hemoptysis.
    - Smoking history and passive exposure to tobacco smoke.
    - Occupational history.
    - Family history of pulmonary problems.
ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease including:
    - Accurately determining respiratory rate and level of respiratory distress.
    - Assessing the use of accessory muscles for breathing.
    - Identifying bronchial breath sounds, rales, rhonchi, and wheezes.
    - Identifying signs of pulmonary consolidation, pleural effusion, and pneumothorax.
    - Identifying the signs of pulmonary hyperresonance/hyperexpansion.
iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a diagnosis of chronic bronchitis, emphysema, asthma, or other conditions with similar findings.
iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on

the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences. Laboratory and diagnostic tests should include, when appropriate:

- Pulse oximitry.
- ABG.
- Chest radiograph.
- Pulmonary function tests.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:

- The use of bronchodilators and inhaled corticosteroids.
- The key components of the care of patients admitted with acute exacerbations of COPD and asthma.
- Using systemic corticosteroids appropriately.
- Judicious use of antimicrobial agents.
- The principles of oxygen therapy.
- Determining when to obtain consultation from a pulmonologist or allergist/immunologist.
- Smoking cessation strategies.

N. Diabetes Mellitus

a) Knowledge: Students should be able to define, describe, and discuss:

i. Diagnostic criteria for impaired fasting glucose and impaired glucose tolerance.
ii. Diagnostic criteria for type I and type II diabetes mellitus, based on a history, physical examination, and laboratory testing.
iii. Pathophysiology, risk factors, and epidemiology of type I and type II diabetes mellitus.
iv. The basic principles of the role of genetics in diabetes mellitus.
v. Presenting symptoms and signs of type I and type II diabetes mellitus.
vi. Presenting symptoms and signs of diabetic ketoacidosis (DKA) and nonketotic hyperglycemic (NKH).
vii. Pathophysiology for the abnormal laboratory values in DKA and NKH including plasma sodium, potassium, and bicarbonate.
viii. Precipitants of DKA and NKH.
ix. Major causes of morbidity and mortality in diabetes mellitus (coronary artery disease, peripheral vascular disease, hypoglycemia, DKA, NKH coma, retinopathy, neuropathy—peripheral and autonomic, nephropathy, foot disorders, infections).
x. Laboratory tests needed to screen, diagnose, and follow diabetic patients including: glucose, electrolytes, blood urea nitrogen/creatinine, fasting lipid profile, HgA1c, urine microalbumin/creatinine ratio, urine dipstick for protein
xi. Non-pharmacologic and pharmacologic (drugs and side effects) treatment of diabetes mellitus to maintain acceptable levels of glycemic control, prevent target organ disease, and other associated complications.
xii. The specific components of the American Diabetes Association (ADA) dietary recommendations for type I and type II diabetes mellitus.
xiii. Basic management of diabetic ketoacidosis and nonketotic hyperglycemic states, including the similarities and differences in fluid and electrolyte replacement.
xiv. Basic management of blood glucoses in the hospitalized patient.
xv. The Somogyi effect and the Dawn phenomenon and the implications of each in diabetes pharmacologic management.
xvi. Basic management of hypertension and hyperlipidemia in the diabetic patient.

b) Skills: Students should be able to demonstrate specific skills including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:

- Weight changes.
- Hypo- or hyperglycemic symptoms.
- Medication history (adherence, side effects, other medications).
- Home glucose monitoring results.
- Target organ disease complications (cardiovascular, foot, gastrointestinal, infectious, neurological, sexual, skin, urinary, or vision symptoms).
- Diet history (total caloric intake, intake of sugar-containing foods, intake of saturated fat and cholesterol, physical activity level, timing of meals).

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
- Skin examination for diabetic dermopathy, furuncles/carbuncles, candidiasis, necrobiosis lipoidica diabeticorum, dermatophytosis, and acanthosis nigricans.
- Fundoscopic exam.
- Arterial pulses.
- Peripheral nerves (e.g., monofilament testing).
- Examination of the feet for corns, calluses, and ulcerations.
- In patients with DKA or NKH evaluate for mental status alterations, Kussmaul's respirations, fruity breath, and signs of volume depletion.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology for:
- Hyperglycemia.
- Hypoglycemia.
- Anion gap acidosis.
- Ketosis.
- Hyperosmolality.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences Laboratory and diagnostic tests should include, when appropriate:
- Fasting serum GLC.
- Electrolytes, BUN/Cr.
- Serum and urine ketones.
- Serum and urine osmolality.
- HbA1c.
- Fasting lipid profile.
- UA.
- Urine microalbumin/creatinine ratio.
- 24-hour urine for protein and creatinine clearance.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
- Writing appropriate fluid and insulin orders and outline critical steps for the treatment of DKA and DKH.
- Counseling patients regarding basic features of ADA diabetic diet recommendations.
- Instructing patients in home blood glucose monitoring.
- Counseling patients on behavior changes (smoking cessation, medication adherence, poor glycemic control, obesity, hypertension, dyslipidemia, and infection) to avoid the complications of diabetes.
- Counseling patients regarding basic foot care.
- Determining when to institute diet therapy, oral hypoglycemic agents, and insulin therapy.

- Calculating an appropriate insulin dose for a diabetic patient.
- Using community resources (ADA, hospital and community-based education programs) to aid the patient in understanding and managing his or her illness.
- Determining when to obtain consultation from an endocrinologist, nephrologist, ophthalmologist, podiatrist, and dietician.

O. Heart Failure

a) Knowledge: Students should be able to define, describe, and discuss:

i. Types of processes and most common disease entities that cause HF (i.e., ischemic, valvular, hypertrophic, infiltrative, inflammatory, etc.).
ii. The basic role of genetics in certain forms of cardiomyopathy.
iii. Staging system for heart failure:
- Stage A: high risk for HF but no structural heart disease is present.
- Stage B: structural heart disease is present but never any symptoms.
- Stage C: past or current symptoms associated with structural heart disease.
- Stage D: end-stage disease with requirements for specialized treatment.

iv. Types of processes that cause systolic vs. diastolic dysfunction.
v. Symptoms and signs of left-sided vs. right-sided heart failure.
vi. Compensatory mechanisms of heart failure including cardiac remodeling and activation of endogenous neurohormonal systems.
vii. Factors leading to symptomatic exacerbation of HF, including ischemia, arrhythmias, hypoxemia, anemia, fever, hypertension, thyroid disorders, non-compliance with medications and dietary restrictions and use of nonsteroidal anti-inflammatory drugs.
viii. Importance of age, gender and ethnicity on the prevalence and prognosis of HF.
ix. Physiological basis and scientific evidence supporting each type of treatment, intervention, or procedure commonly used in the management of patients who present with HF.
x. The general approach to the evaluation and treatment of atrial fibrillation .
xi. Role of critical pathways or practice guidelines in delivering high-quality, cost effective care for patients presenting with new or recurrent heart failure.
xii. The Centers for Medicare & Medicaid Services (CMS) and the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) quality measures for HF treatment.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, including:
- Differentiating between various etiologies of heart failure (answers the question: Why is the patient in heart failure?).
- Identifying clinical factors responsible for symptomatic exacerbation (answers the question: Why is the patient worse now?).
- Exercise intolerance (fatigue, dyspnea on exertion).
- Fluid retention (peripheral edema, dyspnea).
- Changes in sleep pattern (orthopnea, paroxysmal nocturnal dyspnea [PND], nocturia).
- Assessing the functional capacity of patients with HF (walking distance, New York Heart classification).
- Cardiac risk factors.

ii. Physical exam skills: Students should be able to perform a focused physical exam to help establish the diagnosis of HF and estimate its severity:
- Measurement of vital signs including weight and respiratory rate/pattern.
- Accurate measurement of arterial blood pressure and recognition of the typical blood

pressure findings that occur in patients with aortic stenosis, aortic insufficiency and pulsus paradoxus.
- Assessment of major arterial pulses for abnormalities, including bruits.
- Assessment of the neck veins for jugular venous distention and, when necessary, evaluation for abdominal jugular reflux.
- Assessment of the conjunctiva and optic fundus.
- Assessment of the extremities to ascertain for skin conditions, including color, temperature and the presence of edema, cyanosis or clubbing.
- Assessment of the lungs for crackles, rhonchi and decreased breath sounds.
- Inspection and palpation of the anterior chest to identify right and left sided heaves, lifts and thrills.
- Auscultation of the heart to determine rhythm, intensity of heart sounds, splitting of S2 and the presence of rubs, gallops (S3, S4, summation) or extra heart sounds (e.g., clicks).
- Auscultation of the heart to detect the presence of heart murmurs; when a murmur is present, students should be able to:
- Identify timing (systolic vs. diastolic, holosystolic vs. ejection).
- Describe pitch, location and pattern of radiation.
- Gauge significance (innocent vs. pathologic, sclerosis vs. stenosis).
- Assessment of the abdomen to determine the presence of hepatomegaly, ascites, abnormal pulsations and bruits.

iii. Differential diagnosis**:** Students should be able to generate a prioritized differential diagnosis and recognize specific history, physical exam and/or laboratory findings that:
- Help support or refute a clinical diagnosis of heart failure.
- Distinguish between various underlying etiologies of HF, including disease processes that primarily affect:
  - Pericardium (constrictive pericarditis, pericardial tamponade).
  - Endocardium (valvular [congenital, acquired], endocarditis).
  - Myocardium (hypertrophic, restrictive, congestive).

iv. Laboratory interpretation: Students should be able interpret specific diagnostic tests and procedures that are commonly ordered to evaluate patients who present with heart failure. Test interpretation should take into account: Laboratory and diagnostic tests should include, when appropriate:
- 12-lead ECG.
- Chest radiograph.

- Students should be able to define the indications for, and interpret (with consultation) the results of the following diagnostic tests and procedures:
  - Echocardiography.
  - Treadmill and nuclear exercise testing.
  - Radionuclide ventriculogram.
  - Cardiac.
  - Coronary angiography.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
- Recognize the importance of early detection and treatment of risk factors that may lead to the development of heart failure.
- Identifying the indications, contraindications, mechanisms of action, adverse reactions, significant interactions, and relative costs of the following treatments/interventions:
  - Non-pharmacological management.
  - Sodium restriction.
  - Physical activity and limitations.

    - Pharmacological management (recommended for routine use).
    - Diuretics.
    - ACE-I/ARB.
    - Beta-blockers.
    - Aldosterone antagonists (spironolactone, eplerenone).
    - Digoxin.
- Developing a timely and appropriate evaluation and treatment plan for patients with heart failure due to diastolic dysfunction, including:
    - Control of physiologic factors (blood pressure, heart rate).
    - Reduction in central blood volume by judicious use of diuretics.
    - Alleviation of myocardial ischemia.
    - Use of calcium channel blockers.
- Describing use of other agents and interventions that may be useful in treating patients with refractory, end-stage heart failure:
    - Intravenous vasodilators.
    - Intravenous positive inotropic agents.
    - Infusion of B-type natriuretic peptide (nesiritide).
    - Ventricular assist devices.
    - Heart transplantation.
- Defining and describing how the diagnosis and treatment of HF in special populations may differ (e.g., very elderly, associated co-morbidities).
- Determining when to consult a cardiologist.
- Identifying when palliative care may be appropriate for patients with refractory symptoms associated with end-stage disease.

P. Hypertension

a) Knowledge: Students should be able to define, describe and discuss:

i. The etiologies and relative prevalence of primary and secondary hypertension.
ii. The basic principles of the role of genetics in hypertension.
iii. The definition of hypertensive urgency and emergency, citing examples of both.
iv. The difference between essential (primary) and secondary hypertension.
v. Symptoms and signs of the following disorders associated with secondary hypertension:
    - Renovascular hypertension.
    - Renal failure.
    - Polycystic kidney disease.
    - Cushing's disease or syndrome.
    - Hyperaldosteronism.
    - Hyperthyroidism.
    - Hypercalcemia.
    - Medication, alcohol, and illicit drug use.
    - Coarctation of the aorta.
    - Sleep apnea.
vi. The manifestations of target-organ disease due to hypertension.
vii. Classification of blood pressure (SBP and DBP for all age 18 or older).
viii. Basic approaches to the pharmacological management of acute and chronic hypertension, including the physiologic basis and scientific evidence supporting these approaches, and causes for lack of responsiveness to therapy.
ix. Prevention strategies for reducing hypertension (including lifestyle factors, such as dietary intake of sodium, weight, and exercise level), and explain the physiologic basis and/or scientific evidence

supporting each strategy.

x. Steps in management of patients with a hypertensive emergency.

xi. Factors that contribute to non-adherence with antihypertensive medications.

b) Skills: Students should demonstrate specific skills including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:

- Duration and levels of elevated blood pressure.
- History of symptoms of cardiovascular, cerebrovascular, peripheral vascular or renal disease; diabetes; dyslipidemia; or gout.
- History of symptoms suggesting secondary hypertension.
- History of weight gain, leisure-time physical activities, and smoking or other tobacco use.
- Family history of high blood pressure, premature CHD, stroke, CVD, diabetes mellitus and dyslipidemia.
- Psychosocial and environmental factors that may elevate blood pressure (family situation, employment status, working conditions, education level).
- Dietary assessment, including sodium intake and intake of saturated fat and cholesterol.
- Results and side effects of previous antihypertensive therapy.
- Use of commonly prescribed, over-the -counter, and illicit medications that may raise blood pressure or interfere with the effectiveness of antihypertensive medications.
- Alcohol intake.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:

- Blood pressure measurements to detect and confirm the presence of high blood pressure.
- Examination of the fundus for arteriolar narrowing, arteriovenous nicking, hemorrhages, exudates, or papilledema.
- Neck for carotid bruits, distended veins, or an enlarged thyroid gland.
- Heart for increased rate, increased size, precordial heave, clicks, murmurs, arrhythmias, and third (S3) and fourth (S4) sounds.
- Abdomen for bruits, enlarged kidneys, masses, and abnormal aortic pulsation.
- Extremities for diminished, delayed, or absent peripheral arterial pulsations, bruits, and edema.
- Peripheral pulses specifically femoral arterial pulses.
- Body habitus, looking for changes associated with secondary hypertension.
- Peripheral and central nervous system for ischemic changes.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history, physical exam, and laboratory findings that suggest a specific etiology of hypertension.

iv. Laboratory interpretation: Students should be able to recommend and interpret diagnostic and laboratory tests, when appropriate:

- UA.
- CBC.
- Blood glucose (fasting if possible).
- Electrolytes, BUN/Cr.
- Uric acid.
- Fasting lipid profile.
- ECG.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment

plan for patients that includes:

- Treating acute and chronic hypertension.
- Treating primary (essential) hypertension versus secondary hypertension.
- Prescribing preventative strategies to diminish hypertension, including:
    - Accessing and utilizing appropriate information systems and resources

Q. Liver Disease

a) Knowledge: Students should be able to define, describe, and discuss:

i. The biochemical/physiologic/mechanistic approach to hyperbilirubinemia, including:
    - Increased production.
    - Decreased hepatocyte uptake.
    - Decreased conjugation.
    - Decreased excretion from the hepatocyte.
    - Decreased small duct transport (intrahepatic cholestasis).
    - Decreased large duct transport (extrahepatic cholestasis, obstructive jaundice).

ii. The biochemistry and common causes of unconjugated and conjugated hyperbilirubinemia.

iii. The use of serum markers of liver injury (e.g., AST, ALT, GGT, Alk Phos) and function (e.g., bilirubin, ALB, PT/INR) in the diagnostic evaluation of hepatobiliary disease.

iv. The clinical significance of asymptomatic, isolated elevation of AST, ALT, GGT, and/or Alk Phos.

v. The common pathologic patterns of liver disease and their common causes, including:
    - Steatosis (fatty liver).
    - Hepatitis.
    - Cirrhosis.
    - Infiltrative.
    - Intrahepatic cholestasis.
    - Extrahepatic cholestasis (obstructive jaundice).

vi. The epidemiology, symptoms, signs, typical clinical course, and prevention of viral hepatitis.

vii. The distinctions between acute and chronic hepatitis.

viii. The indications for and efficacy of hepatitis A and B vaccinations.

ix. The common causes and clinical significance of hepatic steatosis and steatohepatis.

x. The epidemiology, symptoms, signs, and typical clinical course of autoimmune liver diseases such as autoimmune hepatitis, primary biliary cirrhosis, and primary sclerosing cholangitis.

xi. The epidemiology, symptoms, signs, and typical clinical course of cirrhosis.

xii. The pathophysiologic manifestations, symptoms, signs, and complications of alcohol-induced liver disease.)

xiii. The symptoms, signs, and complications of portal hypertension.

xiv. The pathophysiology and common causes of ascites.

xv. The pathophysiologic manifestations, symptoms, and signs of spontaneous bacterial peritonitis.

xvi. The basic pathophysiology, symptoms, signs, typical clinical course, and precipitants of hepatic encephalopathy.

xvii. The basic pathophysiology, symptoms, signs, and typical clinical course of the hepatorenal syndrome.

xviii. The analysis of ascitic fluid and its use in the diagnostic evaluation of liver disease.

xix. Common causes of drug-induced liver injury.

xx. Genetic considerations in liver disease (i.e., hemochromatosis, Wilson's disease, alpha-1 antitrypsin deficiency, Gilbert's syndrome).

xxi. The epidemiology, pathophysiology, symptoms, signs, and typical clinical course of cholelithiasis and cholecystitis.

xxii. The clinical syndrome of "ascending cholangitis" including its common causes and typical clinical course.

xxiii. The indications for and risks of paracentesis and liver biopsy.

xxiv. The indications for and utility of hepatobiliary imaging studies, including:
- Ultrasound.
- Nuclear medicine studies.
- CT.
- MRI.
- Magnetic resonance cholangiopancreatography (MRCP).
- Endoscopic retrograde cholangiopancreatography (ERCP).

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:
- Jaundice, discolored urine, pruritis, light-colored stool, unintentional weight loss, fever, nausea, emesis, diarrhea, altered mental status, abdominal pain, increased abdominal girth, edema, rectal bleeding, hematemesis.
- DM.
- Alcohol use.
- Prescription, over-the-counter, and illicit drug use.
- Transfusions and other sources of potential blood-born pathogen exposure.
- Consumption of uncooked shellfish and other food items potentially contaminated with fecal matter.
- Sexual history.
- Vaccination history.
- Family history of liver diseases.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
- Jaundice.
- Complete abdominal examination including findings consistent with ascites (e.g., bulging flanks, shifting dullness, fluid wave).
- Findings compatible with chronic alcohol use and portal hypertension (e.g., palmar erythema, spider angiomas, gynecomastia, testicular atrophy, Dupuytren's contracture, muscle wasting, splenomegaly, ascites, edema, caput medusa, hemorrhoids).
- Findings compatible with hepatic (portosystemic) encephalopathy (e.g., disturbances of consciousness and behavior, fluctuating neurologic signs, asterixis).

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology of liver disease.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, when appropriate:
- CBC.
- Electrolytes, BUN/Cr, GLC.
- ALB, TP, total bilirubin, direct bilirubin, PT/INR, AST, ALT, Alk Phos.)
- Hepatitis serology.
- Ascitic fluid ALB, amylase, cell counts, staining, cultures, and the serum-ascites albumin gradient (SAAG).
- Students should be able to define the indications for and interpret (with consultation) the results of:
- Ultrasound.
- Nuclear medicine studies.
- CT.

v. Communication skills: Students should be able to:

- Communicate the diagnosis, treatment plan, and subsequent follow-up to the patient and his or her family.
- Elicit input and questions from the patient and his or her family about the management plan.
- Discuss the avoidance of known hepatotoxins.
- Counsel patients regarding alcohol abstinence.
- Discuss the importance of hepatitis A and B vaccinations for nonimmune patients.

vi. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:

- The diagnostic evaluation of asymptomatic, isolated elevation of the transaminases and/or Alk Phos.
- The diagnostic evaluation of patients with jaundice and unconjugated or conjugated hyperbilirubinemia.
- The basic management of steatosis, hepatitis, cirrhosis, intra- and extra hepatic cholestasis, acute cholecystitis, ascites, portal hypertension, spontaneous bacterial peritonitis, and hepatic encephalopathy.
- Determining when to obtain consultation from a gastroenterologist, hepatologist, or biliary surgeon.

R. Nosocomial Infections

a) Knowledge: Students should be able to define, describe, and discuss:

i. The epidemiology and significance of nosocomial infections in the Canada.

ii. The general clinical risk factors for nosocomial infection. including:

- Immunocompromise.
- Immunosuppressive drugs.
- Extremes of age.
- Compromise of the skin and mucosal surfaces secondary to:
    - Drugs.
    - Irradiation.
    - Trauma.
    - Invasive diagnostic and therapeutic procedures.
    - Invasive indwelling devises (e.g., intravenous catheter, bladder catheter, endotracheal tube, etc.).

iii. The major routes of nosocomial infection transmission, including:

- Contact.
- Droplet.
- Airborne.
- Common vehicle.

iv. The epidemiology, pathophysiology, microbiology, symptoms, signs, typical clinical course, and preventive strategies for the most common nosocomial infections, including:

- Urinary tract infection.
- Pneumonia.
- Surgical site infection.
- Intravascular devised-related bloodstream infections.
- Skin infections.
- Health care associated diarrhea.

v. Empiric antibiotic therapy for the most common nosocomial infections.

vi. The epidemiology, pathophysiology, microbiology, symptoms, signs, typical clinical course, and preventive strategies for colonization or infection with the following organisms:

- Vancomycin-resistant enterococci.
- Clostridium difficile.
- Methicillin-resistant Staphylococcus aureus. (MRSA)
- Multidrug-resistant Gram-negative bacteria.

vii. The crucial importance of judicious antibiotic use.
viii. The effect of widespread use of broad spectrum anti-microbial agents on endogenous body flora and the hospital microbial flora.
ix. The types of isolation procedures and their indications:
- Standard.
- Airborne.
- Contact.
- Droplet.

x. The Centers for Disease Control and Prevention (CDC) guidelines for hand hygiene.
xi. Preventive strategies for needlestick and sharps injuries intended to reduce the transmission of blood-borne pathogens (hepatitis B, hepatitis C, and HIV.
xii. Local hospital post-exposure (i.e., after an eye/mucous membrane splash, needlestick or other sharps injury) protocols for prompt reporting, evaluation, counseling, treatment, and follow-up.
xiii. The indications, efficacy, and side effects of post-exposure prophylaxis for hepatitis B and HIV/AIDS.
xiv. Negative-pressure ventilation isolation for known or suspected tuberculosis patients.
xv. National Institute for Occupational Safety and Health (NIOSH) approved personal respiratory protective equipment (i.e., N95 respirator) use for the prevention of transmission of Mycobacterium tuberculosis to health care workers.

b) Skills: Students should be able to demonstrate specific skills, including:
i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease in the organ systems likely to be involved with nosocomial infection.
ii. Physical exam skills: Students should be able to perform a physical examination of skin, vascular access sites, lungs, abdomen, wounds, and catheter and drain sites and recognize signs of local or systemic infection.
iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis of the likely sites and organisms involved, recognizing specific history and physical exam findings that suggest a specific etiology.
iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based o the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences. Laboratory and diagnostic tests should include, when appropriate:
- Urinalysis and culture and sensitivities.
- Sputum Gram stain and culture and sensitivities.
- Chest radiograph.
- Wound cultures and sensitivities.
- Clostridium difficile toxin assay.
- Hepatitis serologies.
- HIV ELISA and western blot.
- Sputum AFB staining and culture.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
- Assessing a hospitalized patient who develops a new fever 48 or more hours after admission.

- Developing a plan for the evaluation and treatment of hospital acquired infection.
- Demonstrating appropriate choice of antimicrobial drugs which considers mechanisms of action, spectrum of activity, pharmacokinetics, drug interactions, and adverse reactions.
- Recognizing when indwelling intravascular and urinary collection devices should be removed.
- Requesting appropriate isolation measures to protect other patients and health care workers.
- Determining when to obtain consultation from an infectious diseases specialist.
- Contacting hospital infection control experts when appropriate.

S. Pneumonia

a) Knowledge: Students should be able to define, describe, and discuss:

i. The epidemiology, pathophysiology, symptoms, signs, and typical clinical course of community-acquired, nosocomial, and aspiration pneumonia and pneumonia in the immunocompromised host.
ii. The conceptualization of "typical" and "atypical" pneumonia and its limitations.
iii. Common pneumonia pathogens (viral, bacterial, mycobacterial, and fungal) in immunocompetent and immunocompromised hosts).
iv. Identify patients who are at risk for impaired immunity.
v. Indications for hospitalization and ICU admission of patient with pneumonia.
vi. The radiographic findings of the various types of pneumonia.
vii. The antimicrobial treatments (e.g., antiviral, antibacterial, antimycobacterial, and antifungal) for community-acquired, nosocomial, and aspiration pneumonia, and pneumonia in the immunocompromised host.
viii. The implications of antimicrobial resistance.
ix. The pathogenesis, symptoms, and signs of the complications of acute bacterial pneumonia including: bacteremia, sepsis, parapneumonic effusion, empyema, meningitis, and metastatic microabscesses.
x. The indications for and complications of chest tube placement.
xi. The indications for and efficacy of influenza and pneumococcal vaccinations.
xii. The indications and procedures for respiratory isolation.
xiii. The Centers for Medicare & Medicaid Services (CMS) and the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) quality measures for community-acquired pneumonia treatment.

b) Skills: Students should be able to demonstrate specific skills including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:
   - The presence and quantification of fever, chills, sweats, cough, sputum, hemoptysis, dyspnea, and chest pain.
   - Historical features consistent with potential immunocompromise.
   - Potential tuberculosis exposure.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
   - Accurately determining respiratory rate and level of respiratory distress.
   - Identifying bronchial breath sounds, rales, rhonchi, and wheezes.
   - Identifying signs of pulmonary consolidation.
   - Identifying signs of pleural effusion.
   - Identifying signs of the complications of pneumonia.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology of pneumonia and other possible diagnoses, including:

- Common cold.
- Acute bronchitis.
- Influenza.
- Acute exacerbation of COPD.
- Asthma exacerbation.
- CHF.
- Pulmonary embolism.
- Aspiration.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them when appropriate:
- CBC.
- Blood cultures.
- ABG.
- Pleural fluid chemistry, cell counts, staining, and culture.
- Chest radiograph.
- Students should be able to define the indications for and interpret (with consultation) the results of:
  - Chest CT.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
- Selecting an appropriate empiric antibiotic regimen for community-acquired, nosocomial, immunocompromised-host, and aspiration pneumonia, taking into account pertinent patient features.
- Adjusting antimicrobial treatment according to the sputum staining and culture results.
- Recognizing the complications of pneumonia.
- Determining when to obtain consultation from a pulmonologist or infectious diseases specialist.

T. Rheumatoligic Problems

a) Knowledge: Students should be able to define, describe, and discuss:

i. The effect of the time course of symptoms on the potential causes of joint pain (acute vs. subacute vs. chronic).
ii. The difference between and pathophysiology of arthralgia vs. arthritis and mechanical vs. inflammatory joint pain.
iii. The distinguishing features of intra-articular and periarticular complaints (joint pain vs. bursitis and tendonitis).
iv. The effect of the features of joint involvement on the potential causes of joint pain (monoarticular vs. oligoarticular vs. polyarticular, symmetric vs. asymmetric, axial and/or appendicular, small vs. large joints, additive vs. migratory vs. intermittent).
v. Indications for performing an arthrocentesis and the results of synovial fluid analysis.
vi. The pathophysiology and common signs and symptoms of:
- Osteoarthritis.
- Crystalline arthropathies.
- Septic arthritis.

vii. Indications for and effectiveness of intra-articular steroid injections.
viii. Treatment options for gout (e.g., colchicine, NSAIDs, steroids, uricosurics, xanthine oxidase inhibitors).
ix. The basic pathophysiology of autoimmunity and autoimmune diseases.
x. The common signs and symptoms of and diagnostic approach to:
- Rheumatoid arthritis.

- Spondyloarthropathies (reactive arthritis/Reiter's syndrome, ankylosing spondylitis, psoriatic arthritis).
- Systemic lupus erythematosus.
- Systemic sclerosis.
- Raynaud's syndrome/phenomenon.
- Sjögren's syndrome.
- Temporal arteritis and polymyalgia rheumatica.
- Other systemic vasculitides.
- Polymyositis and dermatomyositis.
- Fibromyalgia.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills**:** Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:

- Eliciting features of joint complaints:
  - Pain.
  - Stiffness.
  - Location.
  - Mode of onset.
  - Duration.
  - Severity.
  - Exacerbating and alleviating factors.
  - Warmth, redness, and tenderness.
  - Associated nonarticular symptoms.
- Determining when in the course of acute arthritis it is necessary to obtain a sexual history.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:

- A systematic examination of all joints identifying the following abnormal findings:
  - Erythema, warmth, tenderness, and swelling.
  - Effusion.
  - Crepitus.
  - Altered range of motion.
  - Ulnar deviation.
  - Synovial thickening.
  - Joint alignment deformities (e.g., varus and valgus).
  - Muscular bulk, strength, and tenderness.
- Examination of the skin identifying the following abnormal findings:
  - Rheumatoid and tophaceous nodules.
  - Alopecia.
  - Malar rash.
  - Sclerodactyly.
  - Telangiectasias.
  - Raynaud's phenomenon.
  - Psoriasis.
  - Cutaneous manifestations of vasculitis (e.g., palpable purpura).

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology:

- Osteoarthritis.
- Crystalline arthropathies.

- Septic arthritis.
- Rheumatoid arthritis.
- Spondyloarthropathies (reactive arthritis/Reiter's syndrome, ankylosing spondylitis, psoriatic arthritis).
- Systemic lupus erythematosus.
- Systemic sclerosis.
- Raynaud's syndrome/phenomenon.
- Sjörgren's syndrome.
- Temporal arteritis and polymyalgia rheumatica.
- Other systemic vasculitides.
- Polymyositis and dermatomyositis.
- Fibromyalgia.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them when appropriate:

- CBC with differential.
- Synovial fluid analysis (Gram stain, culture, crystal exam, cell count with differential, and glucose).
- Uric acid.
- ESR.
- Rheumatoid factor (RF).
- Antinuclear antibody test (ANA) and anti-DNA test.

- Students should be able to define the indications for and interpret (with consultation) the results of:
  - Plain radiographs of the shoulder, elbow, wrist, hand, hip, knee, ankle, and foot.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:

- Selecting appropriate medications for the relief of joint pain.
- Prescribing acute and preventative treatment for crystalline arthropathies.
- Prescribing basic treatment options for septic arthritis.
- Prescribing basic treatment options for systemic rheumatologic conditions.
- Determining when to obtain consultation from a rheumatologist and orthopedic surgeon.

U. Substance Abuse

a) Knowledge: Students should be able to define, describe, and discuss:

i. Presenting signs and symptoms of abuse of the following substances:

- Alcohol.
- Opioids.
- Cocaine.
- Amphetamines.
- Hallucinogens.
- Barbiturates.
- Marijuana.
- Anabolic steroids.
- Benzodiazepines.

ii. Signs, symptoms, risk factors for, and major causes of morbidity and mortality secondary to alcohol and drug abuse, intoxication, overdose, and withdrawal.

iii. Diagnostic criteria for substance abuse, dependency and addiction.

iv. Questions in the CAGE questionnaire:

- Cut down.

- Annoyed/angry.
- Guilty.
- Eye opener.

v. Health benefits of substance abuse cessation.
vi. The potential role of genetics in substance abuse vulnerability.

b) Skills: Students should demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:
   - Social history that is elicited in a nonjudgmental, supportive manner, using appropriate questioning (e.g., CAGE questions, etc.).
   - Use of injection drugs and shared needles.
   - Relevant medication history.
   - Immune status.
   - Family history of substance abuse.
   - Lifestyle factors that will influence patient's access to illicit substances and interfere with ability to enable effective treatment.
   - Screening for depression and other psychiatric disease.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
   - Accurate recognition of signs that may indicate intoxication or withdrawal (e.g., behavioral or speech changes, changes in pupil size, conjunctival or nasal injection, tachycardia, sweating, piloerection, yawning, unsteady gait, etc.).
   - Examination of the nose for septal perforation as complication of cocaine use.
   - Examination of the skin for track marks or signs of needle use.
   - Identification of stigmata of secondary disease states (e.g., cirrhosis – splenomegaly, gynecomastia, telangiectasias, caput medusa, etc.).
   - Assessing for signs of endocarditis (e.g., fever, murmur, rash, etc).
   - Obtaining full mental status examination.

iii. Differential diagnosis: Students should be able to generate a differential diagnosis recognizing history, physical exam and/or laboratory findings to determine the diagnosis of abuse of drugs or alcohol and their sequelae.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, when appropriate:
   - Blood alcohol level.
   - Urine and serum toxicology screens.
   - Hepatic function panel.
   - Amylase and lipase levels.
   - Tests for HIV, hepatitis B and hepatitis C.
   - CBC.
   - Blood cultures.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan that includes:
   - Assessing the patient's motivation for achieving sobriety/abstinence.
   - Understanding the principles of acute management of drug/alcohol intoxication and withdrawal versus long-term treatment planning.
   - Using Clinical Institute Withdrawal Assessment for Alcohol. (CIWA-Ar) scale in acute alcohol withdrawal to prevent seizures or delirium tremens.
   - Recommending appropriate use of benzodiazepines for alcohol withdrawal.

- Determining when to obtain consultation from a psychiatrist.

V. Venous Thromboembolism

a) Knowledge: Students should be able to define, describe and discuss:

i. Risk factors for developing DVT, including:
- Prior history of DVT/PE.
- Immobility/hospitalization.
- Increasing age.
- Obesity.
- Trauma.
- Smoking.
- Surgery.
- Cancer.
- Acute MI.
- Stroke and neurologic trauma.
- Coagulopathy.
- Pregnancy.
- Oral estrogens.

ii. Genetic considerations predisposing to venous thrombosis.

iii. The symptoms and signs of DVT and PE.

iv. The differential diagnosis of DVT including the many causes of unilateral leg pain and swelling:
- Venous stasis and the postphlebitic syndrome.
- Lymphedema.
- Cellulitis.
- Superficial thrombophlebitis.
- Ruptured popliteal cyst.
- Musculoskeletal injury.
- Arterial occlusive disorders.

v. The differential diagnosis of PE including the many causes of chest pain and dyspnea:
- MI/unstable angina.
- Congestive heart failure.
- Pericarditis.
- Pneumonia/bronchitis/COPD exacerbation.
- Asthma.
- Pulmonary hypertension.
- Pneumothorax.
- Musculoskeletal pain (e.g., rib fracture, costochondritis).

vi. Treatment modalities for DVT/PE, including:
- Unfractionated heparin.
- Low-molecular-weight heparin.
- Warfarin.
- Thrombolytics.

vii. The risks, benefits, and indications for inferior vena cava filters

viii. The long-term sequelae of DVT and PE.

ix. Methods of DVT/PE prophylaxis, their indications and efficacy, including:
- Ambulation.
- Graded compression stockings.
- Pneumatic compression devices.

- Unfractionated heparin.
- Low-molecular-weight heparin.
- Warfarin.

b) Skills: Students should demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document and present an age-appropriate medical history that suggests the diagnosis of DVT or PE, including:
   - The presence or absence of known risk factors.
   - Presence or absence of leg pain, swelling, warmth, discoloration, and palpable cord.
   - The presence or absence of dyspnea, chest pain, palpitations, cough, hemoptysis.

ii. Physical exam skills: Students should be able to perform a physical examination to establish the diagnosis and severity of disease, including:
   - Assessment of vital signs (i.e., hypotension, tachycardia, tachypnea, fever) and general appearance (i.e., degree of respiratory distress, anxiety).
   - Accurate identification of leg swelling, erythema, warmth, and tenderness. Inspection for signs of lower extremity trauma, arthritis, or joint effusion.
   - Identification of pleural friction rubs, wheezes, rales, rhonchi, and signs of pneumothorax.

iii. Differential diagnosis: Students should be able to generate a differential diagnosis for a patient suspected of having DVT/PE, recognizing specific history, physical examination and laboratory findings which suggest DVT/PE, including the disease states noted above.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them where appropriate:
   - Pulse oximetry.
   - 12-lead ECG.
   - Chest radiograph.
   - ABG.
   - D-dimer.
- Students should be able to define the indications for and interpret (with consultation) the results of:
   - Duplex venous ultrasonography.
   - Ventilation perfusion (V/Q) scan.
   - CT angiography.
   - Pulmonary angiography.
   - Echocardiography.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
   - Outlining the acute and long-term treatment of isolated calf vein phlebitis, superficial thrombophlebitis, DVT, and thromboembolism, including appropriate use and monitoring of heparin and warfarin.
   - Understanding the indications for placement of inferior vena cava filter, indications and complications of thrombolytic therapy, as well as indications for performing a hypercoaguability work-up.
   - Determining when to obtain consultation from a pulmonologist or interventional radiologist.

(a) Basic Skills

Venipuncture, I.V. cannulation, Urinary catheter insertion, Nasogastric tube insertion, ECG recording

(b) Additional Skills

Arterial Puncture, Sigmoidoscopy, Thoracentesis, Lumbar puncture, Bone Marrow aspiration

1) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
2) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
3) Perform a physical examination without causing the patient embarrassment.
4) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
5) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
6) Recognize risk factors and be able to counsel patients on risk reduction.
7) Identify the rights and legal responsibilities of physicians to patients and the community.
8) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
9) Apply the concept of cost-effectiveness to public health interventions.
10) Demonstrate skill in self-directed learning by:
    i. Ability to identify areas of deficiency in one's own knowledge and skills.
    ii. Ability to find appropriate educational resources.
    iii. Ability to evaluate personal learning progress.
    iv. Ability to use new knowledge in the care of patients.
11) Determine the validity and applicability of published data through critical appraisal.
12) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
13) Collaborate effectively with patients and families without having to take charge.
14) Demonstrate skill in finding common ground when differences of opinion exist.
15) Establish effective relationships with colleagues and other member of the health care team by:
    i. Considering their suggestions and criticisms.
    ii. Tactful handling of differences of opinion.
16) Demonstrates the ability to place the needs of patients and families first.
17) Demonstrates honesty and trustworthiness in assessment, study and learning.
18) Demonstrates responsibility and respect.
19) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
20) Be willing to seek help, advice or consultation when needed.
21) Respond to personal and family needs and develop effective support systems
22) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
23) Use the concepts of evidence-based medicine to guide patient care decisions.
24) Identify potential conflict between individual and population interests and seek advice from others.
25) Assess the effectiveness of practice and engage in continuous quality improvement.

These basic skills as listed are considered fundamental for the graduating student. The additional skills are those which are considered highly desirable for the student to have achieved but for which it is recognized that practical opportunities may be limited in the undergraduate curriculum. Students are urged to try to develop expertise in these procedures whenever the opportunity presents itself, recognizing that this opportunity is a function of the services to which they are assigned.

FUNCTIONAL PROGRAM

During an individual clinical elective, the senior Year 4 student will be assigned to a specific clinical service. Where possible, emphasis will be placed on ambulatory medicine, and every effort will be made to avoid the

duties of senior Phase IV clerks from overlapping or interfering with the third-year clerkship. The senior Year 4 student's duties may vary from service to service and are clearly set out in the Department of Medicine clinical elective "catalogue" (following). At times, this may involve participation in an "on-call" schedule. The clinical elective supervisor will act as the senior Year 4 student's mentor/advisor and will be responsible for his or her end-of-rotation evaluation.

In general terms, the student will be expected to apply and develop the skills acquired during the clinical clerkship. The Clinical Science Electives programme offers an opportunity for the student to strengthen those skills he/she feels may be weak and to enhance her/his knowledge in areas of interest. These objectives are best served by active participation in patient care, investigation and clinical decision making and an enthusiastic approach to the learning process.

EVALUATION

This will be based on observation of the student's performance. The primary purpose is to help students identify how much they have learned, and how much they have yet to learn. A secondary purpose is to determine whether the student, at the end of the clinical elective, has met minimum requirements of acceptable performance or achieved excellence.

Appraisal of personal-professional attributes in various aspects of clinical skills will be based on the student's performance during the clinical elective. When necessary, the supervisor will discuss strengths or weaknesses with the student during the rotation. At the end of the rotation the supervisor will complete the standard assessment form and forward it (via the Medicine Coordinator) to the Dean's Office.

There is also opportunity for the student to evaluate the clinical elective learning experience. The Dean's Office will be collecting information from you that can guide future students seeking Clinical Science Electives and provide important feedback to clinical elective supervisors about strengths and weaknesses of individual Clinical Science Electives.

SUMMARY OF MEDICINE ELECTIVES

*** May be required to participate in On-call** **** City-wide rotation**

SERVICE	# PLACES AVAILABLE IN EACH HOSPITAL/PER BLOCK		
	LHSC VICTORIA	LHSC UNIVERSITY	SJHC
Allergy/Immunology **	1	N/A	N/A
Ambulatory General Internal Medicine	1	1 Rotation will assign site	
Cardiology	1*	2*	N/A
Critical Care Medicine	2* Rotation will assign site		N/A
Emergency Medicine	3*	3*	N/A
Endocrinology**	N/A	N/A	1
Gastroenterology	1	1	N/A
General Medicine Team (GACTU)	1*	1*	N/A
Geriatrics ** (includes Parkwood)	N/A	N/A	1
Hematology	1	N/A	N/A
Infectious Diseases	1* Rotation will assign site		N/A
Nephrology	1	1	N/A
Respirology	1* Rotation will assign site		N/A
Rheumatology	N/A	N/A	1

ENDOCRINOLOGY

Supervisor: Dr. Ruth McManus, ruth.mcmanus@sjhc.london.on.ca (519) 646-6371 FAX: (519) 646-6372

This citywide elective will provide the student an excellent opportunity to assess and manage ambulatory patients with diabetes mellitus, thyroid problems, lipid and other endocrine disorders. The student will work closely with the supervising consultants. Nine half-day clinics per week include Diabetes, General Endocrine, Thyroid, Lipid and Metabolic bone clinics. The student will conduct the initial assessment (history and physical) on new patients, review this with the consultant, and then with the consultant develop a plan of management for the patient's problems. The student then dictates a letter to the referring physician. The student will have an opportunity to observe thyroid aspiration and to discuss diabetic education with nurse educators and dietician at the Lawson Diabetes Centre
The student's final assessment is completed by a consensus of the consultants and resident and reviewed with Dr. McManus. The learning objectives of this elective are to provide the student with the opportunity to become more familiar with the investigation and management of common endocrine problems. No night or weekend call is expected.

Objectives:

1) To know the acute and chronic complications of diabetes.
2) To know the treatments for Type 1 and Type 2 diabetes including those for glucose control, lipid control and blood pressure control.
3) To have reliably palpated at least one enlarged thyroid gland.
4) To know the presentation of hyperthyroidism and hypothyroidism.
5) To know the investigations important to hyperthyroidism and hypothyroidism.
6) To know the treatments for hyperthyroidism and hypothyroidism.
7) To actively observe and consider the effects of chronic disease on a patient's interactions with family/work/community/physicians.
8) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
9) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
10) Perform a physical examination without causing the patient embarrassment.
11) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
12) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
13) Recognize risk factors and be able to counsel patients on risk reduction.
14) Identify the rights and legal responsibilities of physicians to patients and the community.
15) Describe the determinants of health and apply them appropriately to enhance individual and community well-being.
16) Apply the concept of cost-effectiveness to public health interventions.
17) Demonstrate skill in self-directed learning by:
18) Ability to identify areas of deficiency in one's own knowledge and skills.
19) Ability to find appropriate educational resources.
20) Ability to evaluate personal learning progress.
21) Ability to use new knowledge in the care of patients.
22) Determine the validity and applicability of published data through critical appraisal.

23) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
24) Collaborate effectively with patients and families without having to take charge.
25) Demonstrate skill in finding common ground when differences of opinion exist.
26) Establish effective relationships with colleagues and other member of the health care team by:
27) Considering their suggestions and criticisms.
28) Tactful handling of differences of opinion.
29) Demonstrates the ability to place the needs of patients and families first.
30) Demonstrates honesty and trustworthiness in assessment, study and learning.
31) Demonstrates responsibility and respect.
32) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
33) Be willing to seek help, advice or consultation when needed.
34) Respond to personal and family needs and develop effective support systems
35) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
36) Use the concepts of evidence-based medicine to guide patient care decisions.
37) Identify potential conflict between individual and population interests and seek advice from others.
38) Assess the effectiveness of practice and engage in continuous quality improvement.

***Number of Students accepted per block*: 1**

GERIATRIC MEDICINE

Supervisor: Dr. L. Diachun, laura.diachun@sjhc.london.on.ca, (519) 685-4021 FAX: (519) 685-4093

Geriatric Medicine offers the student the opportunity to become familiar with the skills necessary for assessment and management of the frail elderly with multiple medical, psychological, functional and social problems. Specialized Geriatric Services provides a wide range of in-hospital and ambulatory care services for the elderly. Common ethical issues, including capacity assessment, will be addressed. Clinical settings are diverse, including a 26-bed inpatient Geriatric Rehabilitation Unit at Parkwood Hospital, the Day Hospital, and specialty Geriatric clinics (Aging Brain, Continence, General Geriatric, Wound Clinic and Osteoporosis). Consultations on acute care wards and home visits are also possible. It is expected that the student will participate in ward rounds, learn how to function as part of a multidisciplinary team and communicate effectively with the elderly and their caregivers as well as become familiar with community support services. The multidisciplinary geriatric teams are comprised of:

Geriatricians	Geriatric psychiatrists	Psychologists
Social workers	Family physicians	Speech-Language Pathologists
Nurses	Pharmacists	Occupational therapists
Spiritual services	Physiotherapists	Therapeutic Recreation Specialists
Dietitians		

Outreach visits for patients unable to come into any of the specialty clinics for various reasons may be scheduled through the Regional Geriatric Program, which conducts outreach into Southwestern Ontario, seeing patients in their homes, in institutions and in acute care facilities. There is an emphasis on both patient assessment and professional provider education. This experience would be relevant to anyone contemplating community practice outside the Teaching Centres. Based on the availability of specific opportunities, an individualized schedule will be created in order to help each student meet their personal learning objectives.

No night or weekend call is required. The evaluation procedure will be formal. UWO students completing an elective in geriatric medicine will be considered for The Collins Memorial Prize in Geriatric Medicine.

Objectives:

1) At the end of the elective the student will be able to:
2) Define the components of a geriatric psychiatric assessment.
3) Define the components of a comprehensive geriatric assessment.
4) Recite what comprises ADL's / IADLS's.
5) Summarize the DSM-IV diagnostic criteria for:
    a. Dementia (e.g., Alzheimer's type)
    b. Depression
    c. Delirium.
6) List several behavioural and psychological symptoms of dementia.
7) List the features of depression that may present atypically in the elderly compared to the younger population.
8) List major areas of risk assessment for seniors with cognitive impairment who are living alone at home.
9) Identify and discuss, as evident during their patient case presentation, an awareness of common prescribing issues encountered by elderly patients and their physicians.
10) List physiological, pharmacokinetic, and pharmacodynamic changes with age and know how these changes influence dosing and medication interactions.
11) List types of community resources to help promote health and provide support for the elderly and their families.
12) Demonstrate an awareness of the burden of multiple medical and psychiatric co-morbidities through their recognition, acknowledgement and integration in the diagnosis and treatment plan of a frail elderly person.
13) At the end of the elective the student will have the following skills:
14) Administer an MMSE, GDS, TUG, clock draw, MoCA and test of verbal fluency and can interpret the results in clinical context.
15) Conduct a mental status examination and an assessment of cognition appropriate for the elderly.
16) Use principles of geriatric and psycho-geriatric assessment to evaluate, diagnose, and develop a preliminary treatment plan for a patient with dementia, depression or delirium.
17) Assess and develop a treatment plan for patients with behavioural and psychological symptoms of dementia.
18) At the end of the elective the student will be able to:
19) Obtain a thorough and comprehensive history from a geriatric patient.
20) Obtain a collaborative history from the family or caregiver(s) of the patient.
21) Demonstrate how to obtain a history from a person with sensory impairment.
22) Demonstrate skill in the presentation and discussion of elderly patients at teaching rounds and clinics.
23) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
24) Develop relationships with patients characterized by compassion, empathy, respect and genuineness, demonstrating a willingness to collaborate with the patient about management.
25) Perform a physical and cognitive assessment without causing the patient embarrassment.
26) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress or changes in condition.
27) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
28) Recognize risk factors and be able to counsel patients and their caregivers on risk reduction.
29) At the end of the elective the student will be able to:

30) Identify the rights and legal responsibilities of physicians to patients and the community.
31) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
32) Apply the concept of cost-effectiveness to public health interventions.
33) Discuss the impact of social and economic factors which predispose and/or exacerbate geriatric syndromes.
34) At the end of the elective the student will be able to:
35) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills
    b. Ability to find appropriate educational resources
    c. Ability to evaluate personal learning progress
    d. Ability to use new knowledge in the care of patients.
36) Determine the validity and applicability of published data through critical appraisal.
37) At the end of the elective the student will be able to:
38) Recognize and incorporate the skills of interdisciplinary team members in the collaborative care of the elderly.
39) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
40) Collaborate effectively with patients and families without having to take charge.
41) Demonstrate skill in finding common ground when differences of opinion exist.
42) Establish effective relationships with colleagues and other members of the health care team by:
    1. Considering their suggestions and criticisms
    2. Tactful handling of differences of opinion.
43) Demonstrate the ability to place the needs of patients and families first.
44) Demonstrate honesty and trustworthiness in assessment, study and learning.
45) Demonstrate responsibility and respect.
46) Recognize personal biases and ensure they do not interfere with the patient's best interests.
47) Be willing to seek help, advice or consultation when needed.
48) Respond to personal and family needs and develop effective support systems.
49) Acknowledge the potential of personal bias and emotional response and how this may influence one's attitude, team function, and patient care.
50) At the end of the elective the student will be able to:
51) Identify and discuss community services and programs available to help maintain the autonomy and independence of community dwelling elders.
52) Appropriately consult interdisciplinary team members in developing care plans for elderly patients.
53) Assist patients in accessing the health care system for physical, psychological, social and economic rehabilitation or long-term care.
54) Use the concepts of evidence-based medicine to guide patient care decisions.
55) Identify potential conflict between individual and population interests and seek advice from others.

***Number of Students accepted per block*: 1**

RHEUMATOLOGY

Supervisor: Dr. S. Rohekar, sherry.rohekar@sjhc.london.on.ca, (519) 646-6000, 66242 FAX: (519) 646-6348

This rotation offers outpatient experience in Rheumatology 5 days per week at the St. Joseph's under the consolidated Rheumatology Service. The student will also be involved in the care of out patients and consults. It is anticipated upon completion of the rotation that the student will have learned to carry out a

musculoskeletal examination, have become acquainted with common rheumatic disease problems and have gained experience in their investigation and management. Students will improve their injection techniques. Both in and outpatient clinical experience will be gained in this rotation. Evaluation will be continuous throughout the rotation. No night or weekend call is expected. There are regular academic rounds and teaching at Rheumatology academic half day.

Objectives:

1) Develop the ability to order and understand interpretation of common rheumatologic investigations including serology and synovial fluid analysis.
2) Differentiate inflammatory arthritis, degenerative arthritis, and fibromyalgia.
3) Develop the ability to construct a relevant history, examination, limited investigation, assessment, and management for a patient presenting with the following:
4) an acute mono-arthritis;
5) a chronic mono-arthritis;
6) an acute inflammatory oligoarthritis;
7) a persistent oligoarthritis;
8) an acute polyarthritis;
9) a more chronic polyarthritis.
10) Possess the knowledge, skills, and attitude to diagnose, initially manage and to know when to immediately refer a patient (to urgent subspecialty care if necessary) with temporal arteritis.
11) Possess the knowledge, skills, and attitude to diagnose and initially manage polymyalgia rheumatica.
12) Possess the knowledge, skills, and attitude to take a relevant history, to identify and characterize inflammatory back disorders such as ankylosing spondylitis.
13) Possess the knowledge, skills and attitude to construct an appropriate differential diagnosis and plan of patient enquiry, examination, limited investigation and assessment for a patient presenting with low back pain.
14) Specify the symptoms, signs and predisposing factors; to outline the assessment and appropriate investigations; to propose a differential diagnosis, and; to outline the principles of management of a patient with the following:
15) connective tissue disease such as systemic lupus erythematosus;
16) vasculitis
17) Possess the knowledge, skills, and attitude to take a relevant history, to identify and characterize:
18) proximal muscle weakness and/or elevated muscle enzymes;
19) glucocorticoid-induced osteoporosis.
20) Able to be familiar with the major indications, adverse effects, drug interactions and contra-indications of drugs commonly used in the management of musculoskeletal conditions. This includes analgesics, non-steroidal anti-inflammatory drugs, antidepressants in pain management, corticosteroids, hypouricaemic drugs, disease modifying and cytotoxic drugs, therapy for osteoporosis, acute and chronic pain management therapy and disease-modifying therapy.
21) Possess the knowledge, skills and attitude to diagnose and initially manage fibromyalgia.
22) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
23) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
24) Perform a physical examination without causing the patient embarrassment.
25) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
26) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.

27) Recognize risk factors and be able to counsel patients on risk reduction.
28) Identify the rights and legal responsibilities of physicians to patients and the community.
29) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
30) Apply the concept of cost-effectiveness to public health interventions.
31) Demonstrate skill in self-directed learning by:
32) Ability to identify areas of deficiency in one's own knowledge and skills.
33) Ability to find appropriate educational resources.
34) Ability to evaluate personal learning progress.
35) Ability to use new knowledge in the care of patients.
36) Determine the validity and applicability of published data through critical appraisal.
37) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
38) Collaborate effectively with patients and families without having to take charge.
39) Demonstrate skill in finding common ground when differences of opinion exist.
40) Establish effective relationships with colleagues and other member of the health care team by:
41) Considering their suggestions and criticisms.
42) Tactful handling of differences of opinion.
43) Demonstrates the ability to place the needs of patients and families first.
44) Demonstrates honesty and trustworthiness in assessment, study and learning.
45) Demonstrates responsibility and respect.
46) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
47) Be willing to seek help, advice or consultation when needed.
48) Respond to personal and family needs and develop effective support systems
49) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
50) Use the concepts of evidence-based medicine to guide patient care decisions.
51) Identify potential conflict between individual and population interests and seek advice from others.
52) Assess the effectiveness of practice and engage in continuous quality improvement.

Number of Students accepted: **1** ****ONE MONTH ELECTIVES ONLY***

AMBULATORY GENERAL INTERNAL MEDICINE
Supervisor: Dr. M. Mrkobrada, mmrkobrada@gmail.com, (519) 663-3370 FAX: (519) 663-3232

Note: Students may be assigned to either University Hospital or SJHC.

This elective incorporates an ambulatory clinic experience with an inpatient consultative experience. In the ambulatory setting the student will participate in General Medical Clinics, Urgent Medical Clinics (referrals from the ER to the outpatient setting) and Pre-Admission Clinics. In the inpatient setting, the student will participate in medical consultations on the surgical services. This is a team experience and the student will have the opportunity to work with specialty residents on this rotation. The rotation provides exposure to a diverse and challenging spectrum of medical problems. The student is not expected to take call during this service, although this can be arranged if so desired.

Number of Students accepted per block: **1**

CARDIOLOGY

Supervisor: Dr. P.W. Pflugfelder, ppflug@uwo.ca, (519) 663-3809 Fax: (519) 434-3278

The 4th year elective/selective program provides experiences with both outpatient and inpatient experiences. Outpatient clinics occur every day. The student is assigned to work up new patients who are attending the cardiology clinic. The student will have opportunity to see a wide variety of cardiovascular problems e.g. ischemic heart disease, heart failure and valvular heart disease. The consultant reviews with the student the history, clinical findings, differential diagnosis, diagnostic and therapeutic plan. The student will dictate a preliminary note to the referring physician. Opportunity for exposure to the noninvasive techniques of cardiologic evaluation eg. ECG, stress testing, echocardiography and nuclear cardiology will be available. In addition, the student will have opportunity to view invasive diagnostic procedures i.e. cardiac catherization and interventional procedures i.e. coronary angioplasty.

Objectives:

1) Performs complete and accurate cardiovascular history and physical examination
2) Develops appropriate differential diagnosis and management plan
3) Formulates a plan for diagnostic testing and incorporates results into patient management
4) Develops competence in basic ECG interpretation
5) Develops an understanding of the indications and limitations of cardiac diagnostic tests
6) Develops adequate knowledge of cardiovascular therapeutic agents
7) Recognizes, identifies and manages early and late complications of acute coronary syndromes (ACS)
8) Knows the presentation, natural history and management of other common cardiovascular disorders (esp. heart failure)
9) Knows role of revascularization procedures in coronary disease
10) Learns to risk stratify patients in the short and long term
11) Learns secondary prevention strategies
12) Communicates appropriately with patients and families
13) Communicates effectively with on-call and attending cardiologists
14) Communicates effectively with nursing and allied healthcare staff

15) Prepares concise admission notes and daily progress notes
16) Prepares concise interim discharge summaries with all relevant information
17) Provides appropriate information on lab test requisitions
18) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations
19) Develop relationships with patients characterized by compassion, empathy, respect and genuineness, demonstrating a willingness to collaborate with the patient about management
20) Perform a physical examination without causing the patient embarrassment
21) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition
22) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients
23) Recognize risk factors and be able to counsel patients on risk reduction
24) Educates patients and families about illness, compliance and healthy behavior patterns
25) Educates patients and families about risk stratification and secondary prevention
26) Identify the rights and legal responsibilities of physicians to patients and the community
27) Describe the determinants of health an apply them appropriately to enhance individual and community well being
28) Apply the concept of cost-effectiveness to public health interventions
29) Increases knowledge base by general cardiovascular reading
30) Uses information technology (e.g., Medline, Internet) to rapidly update knowledge base
31) Knows and applies principles of evidence-based care
32) Prepares and presents topics and cases as requested
33) Demonstrate skill in self-directed learning by:
34) Ability to identify areas of deficiency in one's own knowledge and skills
35) Ability to find appropriate educational resources
36) Ability to evaluate personal learning progress
37) Ability to use new knowledge in the care of patients
38) Determine the validity and applicability of published data through critical appraisal
39) Works closely with the attending cardiologist, cardiology subspecialty resident, senior house staff and nurse practitioners ensuring clear lines of communication
40) Works closely with nursing and allied healthcare staff
41) Develops insight into own strengths and weaknesses
42) Delivers evidence-based care with integrity, honesty and compassion
43) Understands the professional, legal and ethical codes by which physicians are bound
44) Demonstrate the ability to work effectively as a member of a team, as participant or leader
45) Collaborate effectively with patients and families without having to take charge
46) Demonstrate skill in finding common ground when differences of opinion exist
47) Establish effective relationships with colleagues and other members of the health care team by:
    - Considering their suggestions and criticisms
    - Tactful handling of differences of opinion
48) Demonstrates the ability to place the needs of patients and families first
49) Demonstrates honesty and trustworthiness in assessment, study and learning
50) Demonstrates responsibility and respect
51) Recognize personal biases and ensure that they do not interfere with the patient's best interests
52) Be willing to seek help, advice or consultation when needed
53) Respond to personal and family needs and develop effective support systems
54) Coordinates scheduling of diagnostic tests and procedures in an efficient manner
55) Learns cost effectiveness of various therapeutic interventions
56) Understands cost effectiveness regarding risk stratification using invasive and non-invasive techniques

57) Shows good time management skills
58) Assist patients in accessing the health care system for physical, psychological, social and economic rehabilitation or long-term care
59) Use the concepts of evidence-based medicine to guide patient care decisions
60) Identify potential conflict between individual and population interests and seek advice from others
61) Assess the effectiveness of practice and engage in continuous quality improvement.

***Number of Students accepted per block*: 2**

EMERGENCY MEDICINE

Supervisor: Dr. J. Fuss, Jeffrey.Fuss@lhsc.on.ca (519) 667-6538 Fax: (519) 667-6769

This clinical oriented elective provides the students with an opportunity for first contact with a wide range of clinical problems. Students will be expected to assess and manage emergency and non-emergency patients as they present to the Emergency Department. Students will participate as a member of the Emergency team in resuscitating critically ill patients. Students will be responsible for attending formal Emergency Medicine rounds once weekly. Due to the nature of the Emergency Medicine rotation, students will be expected to work varying shifts and at both UH & VIC sites some weekends. Students will be evaluated by all Emergency staff physicians based on their clinical performance in Emergency.

Objectives:

1) Distinguish the seriously ill and injured patients from those with minor conditions.
2) Recognize and rapidly treat life-threatening or limb-threatening conditions as they initially present to the Emergency Department.
3) Stabilize the acutely ill patient and initiate appropriate management and referral.
4) Establish priorities in management of multiple patients.
5) Recognize and initiate treatment of minor or non-acute illnesses and injuries.
6) Be familiar with and make efficient use of laboratory and other investigational modalities available to the Emergency Department.
7) Demonstrate clinical judgment in decisions regarding referral of patients and/or requirement for follow-up care.
8) Have some familiarity with basic procedural skills and techniques essential to the practice of Emergency Medicine.
9) Have a rudimentary understanding of special areas of expertise in Emergency Medicine outside of the Emergency Department (e.g., pre-hospital care, trauma systems, disaster planning, poison control systems, etc)
10) Show an understanding of the principles of consent to treatment in the Emergency setting.
11) The following specific areas of learning should be included (but not considered comprehensive):
    - Resuscitation
    - Acute disorders by body system
    - Trauma
    - Toxicology
    - Environmental disorders
    - Acute age-related disorders
    - Emergency medical services systems
    - Technical/procedural skills in Emergency Medicine

12) The clinical clerk will demonstrate an approach to the assessment and management of patients presenting in the Emergency Department with any complaint/problem, including:
    - Chest pain
    - Shock
    - Upper gastrointestinal hemorrhage
    - Acute shortness of breath
    - Upper airway obstruction/compromise
    - Upper and lower respiratory infections
    - Acute abdominal pain
    - Acute flank pain
    - Vomiting
    - Vaginal bleeding
    - Pelvic pain
    - Red eye
    - Hypothermia, hyperthermia
    - Joint pain
    - Back pain
    - Neck pain
    - Dysuria
    - Sexual assault
    - Decreased level of consciousness
    - Acute intoxication
    - Seizures
    - Headache
    - Weakness
    - Acute confusion
    - Suicidal ideation
    - Acute behavioural disturbances
    - Epitaxis
    - Extremity injuries
    - Burns
    - Electrical injuries
    - Animal bites
13) The trainee will demonstrate technical competence as well as be able to list or describe the indications for, contraindications to, complications and adverse effects of, and the obtaining of informed consent for the following procedures:
    - Upper airway management including intubation
    - Ventilator support and oxygen therapy
    - External chest compression (CPR)
    - Arterial puncture
    - Venous access
    - Spinal and extremity immobilization including collar, fracture board, splint
    - Gastric intubation
    - Needle and tube thoracostomy
    - Local anaesthetic
    - Wound management, including suturing
    - Anterior nasal packing
    - Slit lamp eye assessment and tonometry
    - Incision and drainage of abscesses
    - Electrocardiography

- Application of external pacemakers
- Spirometry
- Defibrillation/cardioversion
- Foreign body removal – soft tissue and eye.

14) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
15) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
16) Perform a physical examination without causing the patient embarrassment.
17) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
18) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
19) Recognize risk factors and be able to counsel patients on risk reduction.
20) Identify the rights and legal responsibilities of physicians to patients and the community.
21) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
22) Apply the concept of cost-effectiveness to public health interventions.
23) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
24) Determine the validity and applicability of published data through critical appraisal.
25) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
26) Collaborate effectively with patients and families without having to take charge.
27) Demonstrate skill in finding common ground when differences of opinion exist.
28) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
29) Demonstrates the ability to place the needs of patients and families first.
30) Demonstrates honesty and trustworthiness in assessment, study and learning.
31) Demonstrates responsibility and respect.
32) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
33) Be willing to seek help, advice or consultation when needed.
34) Respond to personal and family needs and develop effective support systems
35) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
36) Use the concepts of evidence-based medicine to guide patient care decisions.
37) Identify potential conflict between individual and population interests and seek advice from others.
38) Assess the effectiveness of practice and engage in continuous quality improvement.

***Number of Students accepted per block*: 3**

GASTROENTEROLOGY

Supervisor: Dr. P. Adams, padams@uwo.ca, (519) 663-5375 - Fax: (519) 663-3549

General description and type of clinical experience: The 4th year elective/selective program is an outpatient

experience. The student is assigned a new patient attending the outpatient clinic on referral from a family physician. The student obtains a complete history, does a physical, formulates a problem list, and makes a differential diagnosis, diagnostic and therapeutic plans for each problem. After thorough discussion with the consultant the student dictates and then corrects the consultation note to the referring physician. If the patient returns for a diagnostic procedure in the endoscopy unit the student may view that procedure.

Objectives:

1) Obtain a basic knowledge and understanding of the wide spectrum of the GI disease.
2) Experience in sigmoidoscopy is usually obtained.
3) The clinical presentation of the common GI diseases will be stressed as well as the most efficient use of the diagnostic resources used in the investigation of these diseases.
4) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
5) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
6) Perform a physical examination without causing the patient embarrassment.
7) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
8) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
9) Recognize risk factors and be able to counsel patients on risk reduction.
10) Identify the rights and legal responsibilities of physicians to patients and the community.
11) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
12) Apply the concept of cost-effectiveness to public health interventions.
13) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
14) Determine the validity and applicability of published data through critical appraisal.
15) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
16) Collaborate effectively with patients and families without having to take charge.
17) Demonstrate skill in finding common ground when differences of opinion exist.
18) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
19) Demonstrates the ability to place the needs of patients and families first.
20) Demonstrates honesty and trustworthiness in assessment, study and learning.
21) Demonstrates responsibility and respect.
22) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
23) Be willing to seek help, advice or consultation when needed.
24) Respond to personal and family needs and develop effective support systems
25) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
26) Use the concepts of evidence-based medicine to guide patient care decisions.
27) Identify potential conflict between individual and population interests and seek advice from others.
28) Assess the effectiveness of practice and engage in continuous quality improvement.

Evaluation procedure: The consultants and senior residents with whom the student has had contact will evaluate the student. The evaluation procedure will be similar to that used for clinical trainees on the service and is based upon non-cognitive skills relating to patient contact and interpersonal skills with co-workers as well as an assessment of clinical skills and competence in compiling a clinical record.

Expectations and attendance requirements: The student is required to attend the outpatient clinics (which currently are scheduled every afternoon of the week). In addition the student is required to participate in the rounds and teaching conferences of the department, which include GI-pathology rounds, sessions in Hepatology and Gastroenterology, all of these are held weekly. The student is expected to attend the twice-monthly GI rounds and monthly interhospital GI rounds. The student will not be responsible for the care of inpatients. The student is not required to participate in the on-call schedule.

Number of Students accepted per block: **1**

GENERAL INTERNAL MEDICINE CLINICAL TEACHING UNIT

Supervisors:
Team 1: Dr. M. Goldszmidt, mgoldszm@uwo.ca (519) 685-5800, ext: 35995, Fax: (519) 663-3232
Team 2: Dr. K. Myers, Kathryn.myers@sjhc.london.on.ca, (519) 519 646-6000, ext: 66142, Fax: (519) 646-6064
Team 3: Dr. B. Larocque, larocque@uwo.ca, (519) 646-6117, Fax: (519) 646-6064

Note: Students will be assigned to a Team at the discretion of the scheduler.

This 4th year elective is an inpatient experience on the General Internal Medicine Clinical Teaching Unit. The fourth-year clinical clerk choosing this elective is expected to integrate with the team and assume responsibility for the initial work-up and continuing care for a proportion of the team's patients. This implies participation in team rounds and sharing in the call schedule. This elective is designed to develop clinical skills in history taking and physical examination, to facilitate clinical decision-making under supervision, and to allow time for independent reading and learning. Each student should also anticipate at least one clinical presentation at the weekly team rounds. Evaluations are carried out by the Consultants and team Resident and are conveyed to the trainee at the end of the rotation.

Number of Students accepted per block: **1**

NEPHROLOGY

Supervisor: Dr. F. Rehman, Faisal.Rehman@lhsc.on.ca (519) 663-3285 Fax: (519) 663-3449

The 4th-year clinical elective student is encouraged to participate in both the clinical and research activities within the nephrology program. The medical staff includes seven nephrology consultants. Students are expected to participate in both the inpatient and outpatient activities of the service. Nephrology inpatients are, in general, admitted under one of the general internal medicine teams, with nephrology providing consultative support. Renal transplant patients are accommodated in the 12-bed Multi Organ Transplant Unit on the 4th floor. Staff provides a nephrology consultative service throughout the hospital, with an average of 3-5 new consults weekly. Ten to thirteen outpatient clinics occur weekly, including transplant follow up clinics, general nephrology clinic and a chronic kidney disease clinic. There is approximately 300-patients/month that flow through the various outpatient clinics. Students can thus expect to encounter a broad range of

nephrological patients in both the inpatient and outpatient settings. Students will be exposed to the range of practical procedures unique to nephrology including renal biopsy and the placement of temporary and permanent indwelling dialysis catheters. The service also runs a busy chronic hemodialysis service, with 14 in-centre stations and approximately 100 patients on satellite dialysis in the community, as well as providing renal transplant services (70-80 transplants annually) for the Southwestern Ontario region and much of Northern Ontario. Research activities of staff members range from basic research into immunologic aspects of renal disease and organ transplantation to clinical research.

Objectives:

A. Fluid and Electrolyte Disorders

1. Knowledge

Students should be able to define, describe and discuss:

a. The pathophysiology of
   - Hypo- and hypervolemia
   - Hypo- and hypernatremia
   - Hypo- and hyperkalemia
   - Hypo- and hypercalcemia
   - Simple and mixed acid-base disorders
   - Respiratory acidosis and alkalosis
   - Metabolic acidosis and alkalosis.

b. Presenting symptoms and signs of the above disorders.
c. The importance of total body water and its distribution.
d. The differential diagnosis of hypo- and hypernatremia in the setting of volume depletion, euvolemia, and hypervolemia.
e. How to distinguish hyponatremia from pseudohyponatremia.
f. How to identify spurious hyperkalemia or acidosis-related hyperkalemia.
g. Risks of too rapid or delayed therapy for hyponatremia.
h. The most common causes of respiratory acidosis, respiratory alkalosis, metabolic acidosis and metabolic alkalosis.
i. How to calculate the anion gap and explain its relevance to determining the cause of a metabolic acidosis.
j. Changes in total body water distribution that occur with aging.
k. How altered mental status can contribute to electrolyte disorders.
l. Tests to use in the evaluation of fluid, electrolyte, and acid-base disorders.
m. Indications for obtaining an ABG.
n. The types of fluid preparations to use in the treatment of fluid and electrolyte disorders.

2. Skills

a. History-Taking Skills – students should be able to obtain, document and present an age-appropriate medical history that differentiates among etiologies of disease including:
   - Eliciting appropriate information from patients with volume overload, including recent weight gain, edema or ascites, symptoms of heart failure, dietary sodium intake, changes in medications, noncompliance and intravenous fluid regimens.
   - Eliciting appropriate information from patients with volume depletion, including recent weight loss, thirst, gastrointestinal losses, urinary losses, oral intake, insensible losses, and intravenous fluid regimens.
   - Eliciting appropriate information from patients with electrolyte problems, including use of diuretics and other medications, gastrointestinal losses, and history of relevant medical

conditions (e.g., heart failure, liver disease, renal disease, pulmonary disease, central nervous system disease, and malignancy).

b. Physical Exam Skills – students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
   - Measurement of orthostatic vital signs.
   - Identification of signs of volume overload including peripheral edema, pulmonary edema, ascites, edema.
   - Identification of signs of volume depletion including tachycardia, orthostatic hypotension, dry mucous membranes, poor skin turgor.
   - Identification of signs of sodium disorders including lethargy, weakness, encephalopathy, delirium, seizures.
   - Identification of signs of potassium disorders including weakness, fatigue, constipation, ileus, cramping, tetany, hypo- or hyperreflexia.
   - Indentification of signs of calcium disorders including cramping, tetany, Chvostek's and Trousseau's sign, seizures, anorexia, constipation, polyuria, hypo- or hyperreflexia, stupor, coma.

c. Differential Diagnosis – students should be able to generate a prioritized differential diagnosis recognizing specific history, physical exam, and laboratory findings that distinguish between:
   - Hypo- and hypervolemia
   - Hypo- and hypernatremia
   - Hypo- and hyperkalemia
   - Hypo- and hypercalcemia
   - Hypo – and hyperphosphatemia
   - Hypo- and hypermagnesemia
   - Respiratory acidosis and alkalosis
   - Metabolic acidosis and alkalosis.

d. Laboratory Interpretation – Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences. Laboratory and diagnostic tests should include, when appropriate:
   - Serum electrolytes, BUN/Cr
   - Anion gap
   - ABG
   - Serum and urine osmolality
   - Urinary sodium
   - Fractional excretion of sodium
   - ECG findings in hyper- and hypokalemia
   - Serum BUN to Cr ratio.

e. Basic and Advanced Procedural Skills – students should be able to:
   - Insert a peripheral intravenous catheter
   - Obtain an ABG
   - Assist in the insertion of a central venous catheter
   - Perform a urine microscopic examination.

f. Management Skills – Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
   - Writing appropriate fluid orders for the treatment of hypo- and hypervolemia, hypo- and hypernatremia, hypo- and hyperkalemia, hypo- and hypercalcemia.
   - Writing appropriate orders for replacing sodium, potassium, calcium, phosphates and magnesium.

- Writing appropriate orders for correcting hyperkalemia, hypercalcemia, hyperphosphatemia and phyermagnesemia.
- Calculating the water deficit that needs to be corrected to treat hypernatremia.
- Identifying indications for administration of bicarbonate.

B. Acute Kidney Injury and Chronic Kidney Disease
   1. Knowledge
      a. Students should be able to define, describe and discuss:
         - The distinction between the three major pathophysiologic etiologies for acute renal failure (ARF):
         - Decreased renal perfusion (prerenal)
         - Intrinsic renal disease (renal)
         - Acute renal obstruction (postrenal).
         - The pathophysiology of the major etiologies of “prerenal” ARF, including:
         - Hypovolemia
         - Decreased cardiac output
         - Systemic vasodilation
         - Renal vasoconstriction.
         - The pathophysiology of the major etiologies of intrinsic “renal” ARF, including:
         - Vascular lesions
         - Glomerular lesions
         - Interstitial nephritis
         - Intra-tubule deposition/obstruction
         - Acute tubular necrosis (ATN).
         - The pathophysiology of the major etiologies of “postrenal” ARF, including:
         - Urethral (e.g., tumors, calculi, clot, sloughed papillae, retroperitoneal fibrosis, lymphadenopathy)
         - Bladder neck (e.g., tumors, calculi, prostatic hypertrophy or carcinoma, neurogenic)
         - Urethral (e.g., stricture, tumors, obstructed indwelling catheters).
         - The pathophysiology and clinical findings of uremia.
         - The natural history, initial evaluation and treatment, and complications of ARF.
         - The most common etiologies of chronic kidney disease (CKD):
         - DM
         - Hypertension
         - Glomerulonephritis
         - Polycystic kidney disease
         - Autoimmune diseases (e.g., systemic lupus erythematosus)
         - The staging scheme for CKD
         - The significance for proteinuria in CKD
         - The use of ACE-Is and ARBs in the management of CKD
         - The importance of secondary hyperparathyroidism in CKD
         - The pathophysiology of anemia in CKD
         - The value of glycemic and hypertension control in limiting the progression of CKD
         - The value of CAD risk factor modification in patients with CKD, particularly those treated with dialysis
         - The basic principles of renal replacement therapy (e.g., hemodialysis and peritoneal dialysis) as well as the complications.

2. Skills
    a. History-Taking Skills – students should be able to obtain, document and present an age-appropriate medical history that differentiates among etiologies of disease including:
        - Eliciting an age-appropriate history that distinguishes among the three major reasons for ARF (pre-renal, renal, post-renal), including the predisposing conditions, nephrotoxic drugs or agents, and systemic disease and the major causes f CKD
        - Eliciting appropriate information from patients with volume overload, including recent weight gain, edema or ascites, symptoms of heart failure, dietary sodium intake, changes in medications, noncompliance and intravenous fluid regimens.
        - Eliciting appropriate information from patients with volume depletion, including recent weight loss, thirst, gastrointestinal losses, urinary losses, oral intake, insensible losses, and intravenous fluid regimens.
    b. Physical Exam Skills – Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
        - The determination of a patient's volume status through estimation of the central venous pressure using the height of jugular venous distention and measurement of pulse and blood pressure in the lying/standing positions.
        - Palpitation and percussion of the bladder to recognize bladder distention
        - Palpation of the prostate
        - Determination of the presence of pulmonary edema, peripheral edema, ascites, and signs of heart failure
        - Findings consistent with uremia
        - Examination for evidence of systemic disease, including but limited to skin, joints, and nails.
    c. Differential Diagnosis – Students should be able to generate a prioritized differential diagnosis recognizing specific history, physical exam, and laboratory findings that distinguish between:
        - Acute renal failure and chronic kidney disease.
    d. Laboratory Interpretation—Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences. Laboratory and diagnostic tests should include, when appropriate:
        - Serum electrolytes, BUN/Cr
        - Anion gap
        - ABG
        - Urinary sodium
        - Fractional excretion of sodium
        - Serum BUN to Cr ratio
        - CBC, ferritin
        - Performing and interpreting a urinalysis, including microscopic examination for casts, red blood cells, white blood cells, and crystals.
        - Calculating fractional excretion of sodium and appreciate its usefulness in distinguishing between pre-renal and intrinsic renal disease
        - Calculating creatinine clearance using the Cockcroft-Gault or MDRD ("modification of diet in renal disease study") equations
        - Serum parathyroid hormone level
        - ECG findings in hyperkalemia
        - Renal ultrasonography.
    e. Basic and Advanced Procedural Skills – Students should be able to :
        - Insert a peripheral intravenous catheter
        - Obtain an ABG

- Assist in the insertion of a central venous catheter
- Perform a urine microscopic examination.

f. Management Skills – Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
   - Designing an appropriate management plan for initial management of ARF, including volume management, dietary recommendations, drug dosage alterations, electrolyte monitoring, and indications for dialysis.
   - Developing a management plan to effectively treat HTN and DM
   - Recommending treatment with phosphate binders, calcium replacement, and Vitamin D replacement
   - Recommending treatment for dyslipidemia
   - Recommending treatment for anemia secondary to CKD
   - Recommending acute treatment for hyperkalemia
   - Determining when to obtain consultation from a nephrologist
   - Using a cost-effective approach based on the differential diagnosis.
   - Accessing and utilizing appropriate information systems and resources to help delineate issues related to renal failure
   - Incorporating patient preferences.

OBJECTIVES:

1) Explain to a patient and his or her family why intravenous fluids are needed.
2) Communicate the diagnosis, treatment plan, and subsequent follow up to the patient and his or her family.
3) Elicit input and questions from the patient and family about the management plan.
4) Counsel patients regarding a renal diet.
5) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
6) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
7) Perform a physical examination without causing the patient embarrassment.
8) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
9) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
10) Recognize risk factors and be able to counsel patients on risk reduction.
11) Identify the rights and legal responsibilities of physicians to patients and the community.
12) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
13) Apply the concept of cost-effectiveness to public health interventions.
14) Demonstrate skill in self-directed learning by:
15) Ability to identify areas of deficiency in one's own knowledge and skills.
16) Ability to find appropriate educational resources.
17) Ability to evaluate personal learning progress.
18) Ability to use new knowledge in the care of patients.
19) Determine the validity and applicability of published data through critical appraisal.
20) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
21) Collaborate effectively with patients and families without having to take charge.
22) Demonstrate skill in finding common ground when differences of opinion exist.
23) Establish effective relationships with colleagues and other member of the health care team by:
24) Considering their suggestions and criticisms.
25) Tactful handling of differences of opinion.

26) Demonstrates the ability to place the needs of patients and families first.
27) Demonstrates honesty and trustworthiness in assessment, study and learning.
28) Demonstrates responsibility and respect.
29) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
30) Be willing to seek help, advice or consultation when needed.
31) Respond to personal and family needs and develop effective support systems
32) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
33) Use the concepts of evidence-based medicine to guide patient care decisions.
34) Identify potential conflict between individual and population interests and seek advice from others.
35) Assess the effectiveness of practice and engage in continuous quality improvement.

***Number of Students accepted per block*: 1**

ALLERGY/CLINICAL IMMUNOLOGY

Supervisor: Dr. D.W. Moote, moote@uwo.ca (519) 685-8167 Fax: (519) 685-8274

This elective in Clinical Immunology and Allergy is based out of South Street Hospital. Specialty clinics in this block consist of the following: Allergy Clinic, Immunodeficiency Clinic, Adverse Drug Reaction Clinic, Venom Allergy Clinic, and adult Asthma Clinic. This rotation will be predominantly an outpatient clinical experience, with an opportunity for inpatient consultations and hospital rounds. The student will learn unique aspects of the history and physical exam applicable to Allergy and Clinical Immunology, as well as how to apply and interpret skin tests, and develop an approach to immunodeficiency. Seminars are held at least twice monthly on common diseases. The student will be expected to attend the clinics and teaching sessions and will have clinics with at least three consultants. A presentation may be required. There will be immediate feedback after each patient is reviewed and teaching will occur around all CanMEDS roles. Learners will have their dictated notes reviewed by a consultant and provided with feedback. No night or weekend call is expected.

***Number of Students accepted per block*: 1**

AMBULATORY GENERAL INTERNAL MEDICINE

Supervisor: Dr. George Dresser, George.dresser@lhsc.on.ca, (519) 663-3342; Fax: (519) 663-3388

The student puts together a weekly schedule of morning and afternoon clinics, choosing from both GIM and (if desired) subspecialties. This demands some initiative on the part of the trainee to organize but the combination of attendance at teaching rounds and the morning and afternoon clinics gives trainees a chance to see ambulatory medicine, with exposure to a different set of patients compared to the Emergency Department and inpatient CTU. A daily morning Urgent Medical Clinic provides wide variety of medical diagnoses. This rotation offers the chance to see pre- and post-op patients with a wide variety of medical and surgical problems. The trainee works alone or with a consult resident and is supervised directly one-on-one contact with the involved consultant. Decision making is developed in terms of recognizing relevant issues, prioritizing interventions and focussing on key aspects of preoperative medicine. The student is not expected to take call during this service, although this can be arranged if so desired.

***Number of Students accepted per block*: 1**

CARDIOLOGY

Supervisor: Dr. P.W. Pflugfelder, ppflug@uwo.ca, (519) 663-3809 Fax: (519) 434-3278

The elective in clinical cardiology offers the student an opportunity to gain experience in the approach to patients with acute cardiac problems. Students are assigned as clerks to the in-patient cardiology service (Red Team). The learning objectives may include: refinement of cardiovascular clinical skills; assessment of patients wtih chest pain, angina, acute MI, heart failure, arrhythmia; understanding the indications for and information obtained from the commonly used diagnostic tests in cardiology; and performance and basic interpretation of 12 lead ECGs. There will be opportunity for outpatient experience and the elective may also include a CCU

experience. Night and weekend call for the cardiology ward may be required; evaluation will be performed on the basis of ongoing supervision of clinical activities.

Objectives:

1) Performs complete and accurate cardiovascular history and physical examination
2) Develops appropriate differential diagnosis and management plan
3) Formulates a plan for diagnostic testing and incorporates results into patient management
4) Develops competence in basic ECG interpretation
5) Develops an understanding of the indications and limitations of cardiac diagnostic tests
6) Develops adequate knowledge of cardiovascular therapeutic agents
7) Recognizes, identifies and manages early and late complications of acute coronary syndromes (ACS)
8) Knows the presentation, natural history and management of other common cardiovascular disorders (esp. heart failure)
9) Knows role of revascularization procedures in coronary disease
10) Learns to risk stratify patients in the short and long term
11) Learns secondary prevention strategies
12) Communicates appropriately with patients and families
13) Communicates effectively with on-call and attending cardiologists
14) Communicates effectively with nursing and allied healthcare staff
15) Prepares concise admission notes and daily progress notes
16) Prepares concise interim discharge summaries with all relevant information
17) Provides appropriate information on lab test requisitions
18) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations
19) Develop relationships with patients characterized by compassion, empathy, respect and genuineness, demonstrating a willingness to collaborate with the patient about management
20) Perform a physical examination without causing the patient embarrassment
21) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition
22) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients
23) Recognize risk factors and be able to counsel patients on risk reduction
24) Educates patients and families about illness, compliance and healthy behavior patterns
25) Educates patients and families about risk stratification and secondary prevention
26) Identify the rights and legal responsibilities of physicians to patients and the community
27) Describe the determinants of health an apply them appropriately to enhance individual and community well being
28) Apply the concept of cost-effectiveness to public health interventions
29) Increases knowledge base by general cardiovascular reading
30) Uses information technology (e.g., Medline, Internet) to rapidly update knowledge base
31) Knows and applies principles of evidence-based care
32) Prepares and presents topics and cases as requested
33) Demonstrate skill in self-directed learning by:
34) Ability to identify areas of deficiency in one's own knowledge and skills
35) Ability to find appropriate educational resources
36) Ability to evaluate personal learning progress
37) Ability to use new knowledge in the care of patients
38) Determine the validity and applicability of published data through critical appraisal

39) Works closely with the attending cardiologist, cardiology subspecialty resident, senior house staff and nurse practitioners ensuring clear lines of communication
40) Works closely with nursing and allied healthcare staff
41) Develops insight into own strengths and weaknesses
42) Delivers evidence-based care with integrity, honesty and compassion
43) Understands the professional, legal and ethical codes by which physicians are bound
44) Demonstrate the ability to work effectively as a member of a team, as participant or leader
45) Collaborate effectively with patients and families without having to take charge
46) Demonstrate skill in finding common ground when differences of opinion exist
47) Establish effective relationships with colleagues and other members of the health care team by:
    - Considering their suggestions and criticisms
    - Tactful handling of differences of opinion
54) Demonstrates the ability to place the needs of patients and families first
55) Demonstrates honesty and trustworthiness in assessment, study and learning
56) Demonstrates responsibility and respect
57) Recognize personal biases and ensure that they do not interfere with the patient's best interests
58) Be willing to seek help, advice or consultation when needed
59) Respond to personal and family needs and develop effective support systems
60) Coordinates scheduling of diagnostic tests and procedures in an efficient manner
61) Learns cost effectiveness of various therapeutic interventions
62) Understands cost effectiveness regarding risk stratification using invasive and non-invasive techniques
63) Shows good time management skills
64) Assist patients in accessing the health care system for physical, psychological, social and economic rehabilitation or long-term care
65) Use the concepts of evidence-based medicine to guide patient care decisions
66) Identify potential conflict between individual and population interests and seek advice from others
67) Assess the effectiveness of practice and engage in continuous quality improvement.

***Number of Students accepted per block*: 1**

CRITICAL CARE TRAUMA CENTRE

Supervisor: Dr. Mithu Sen, mithu.sen@lhsc.on.ca (519) 667-6577 Fax: (519) 685-8089

An elective in critical care will offer exposure to patients with multiple systems organ failure and acute traumatic illnesses admitted to Victoria Hospital's Critical Care Trauma Centre (CCTC). This 30 bed unit and major referral centre for Southwestern Ontario will provide exposure to critically ill patients with diverse diagnoses including multitrauma, medical and surgical patients, as well as obstetrics and the neurosciences.

This rotation will help develop the student's ability to assess, resuscitate based on ACLS and ATLS guidelines, and manage critically ill patients by being an integral member of the critical care team. We tailor the experience to the students' abilities, needs and interests. Our educational sessions occur daily in the form of: fundamentals of critical care morning seminars, quality improvement lectures (including CCTC morbidity and mortality, ethical critical care, and chest xray interpretation), luncheon seminars, journal club, practice megacode sessions and multidisciplinary Critical Care rounds form an integral part of the educational process.

We provide the student with an opportunity to acquire confidence in the clinical assessment of critically-ill patients. These valuable skills and knowledge will help to prepare the student for any discipline or type of centre the student will eventually choose as a career path.

Objectives:

1) Correctly interpret a blood gas.
2) Interpret a CXR and provide a differential diagnosis for the findings.
3) Describe the basic approach to the initial stabilization and management of a patient with increased intracranial pressure.
4) Define acute lung injury and demonstrate an understanding of some of the management strategies.
5) Demonstrate an understanding of the basic physiologic principles, differential diagnosis and initial management of shock.
6) Demonstrate an understanding of the principles of mechanical ventilation.
7) Explain the principles of infection control in the ICU setting and understand the role that resistant organisms play in the clinical course of critically ill children.
8) Describe the possible presentation of metabolic disorders in pediatric patients in the critical care setting.
9) Be able to list a differential diagnosis and initial management plan for a child with a suspected underlying metabolic disorder.
10) Demonstrate the ability to rapidly ascertain the clinical stability of the acutely ill child and to prioritize therapeutic interventions.
11) Demonstrate an appreciation of the patterns of physiological dysfunction associated with multi-system failure.
12) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
13) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
14) Perform a physical examination without causing the patient embarrassment.
15) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
16) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
17) Recognize risk factors and be able to counsel patients on risk reduction.
18) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
19) Apply the concept of cost-effectiveness to public health interventions.
20) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
21) Determine the validity and applicability of published data through critical appraisal.
22) Is punctual in attending organized unit activities, e.g., hand-over rounds, journal club and teaching sessions.
23) In dress and behaviour to project a professional image.
24) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
25) Collaborate effectively with patients and families without having to take charge.
26) Demonstrate skill in finding common ground when differences of opinion exist.
27) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.

b. Tactful handling of differences of opinion.

28) Demonstrates the ability to place the needs of patients and families first.
29) Demonstrates honesty and trustworthiness in assessment, study and learning.
30) Demonstrates responsibility and respect.
31) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
32) Be willing to seek help, advice or consultation when needed.
33) Respond to personal and family needs and develop effective support systems.
34) Incorporate the concepts of evidence-based medicine to guide patient care decisions but recognize the limitations of this pattern of practice.
35) Identify potential conflict between individual and population interests and seek advice from others.
36) Assess the effectiveness of practice and engage in continuous quality improvement.

Expectations and attendance requirements:
Students will be expected to accept responsibility for the initial and daily evaluation of patient(s), as assigned by the senior resident and consultant and to attend all components of the Critical Care Teaching Program. On call coverage is not mandatory.

Evaluation: This will include clinical skills assessment in the bedside evaluation of critically ill patients. Enthusiasm is a must!

Number of Students accepted per block*: 2 **Students may be assigned to the MSICU at UH

EMERGENCY MEDICINE

Supervisor: Dr. J. Fuss, Jeffrey.Fuss@lhsc.on.ca (519) 667-6538 Fax: (519) 667-6769

This clinical oriented elective provides the students with an opportunity for first contact with a wide range of clinical problems. Students will be expected to assess and manage emergency and non-emergency patients as they present to the Emergency Department. Students will participate as a member of the Emergency team in resuscitating critically ill patients. Students will be responsible for attending formal Emergency Medicine rounds once weekly. Due to the nature of the Emergency Medicine rotation, students will be expected to work varying shifts and at both UH & VIC sites some weekends. Students will be evaluated by all Emergency staff physicians based on their clinical performance in Emergency.

Objectives:

1) Distinguish the seriously ill and injured patients from those with minor conditions.
2) Recognize and rapidly treat life-threatening or limb-threatening conditions as they initially present to the Emergency Department.
3) Stabilize the acutely ill patient and initiate appropriate management and referral.
4) Establish priorities in management of multiple patients.
5) Recognize and initiate treatment of minor or non-acute illnesses and injuries.
6) Be familiar with and make efficient use of laboratory and other investigational modalities available to the Emergency Department.
7) Demonstrate clinical judgment in decisions regarding referral of patients and/or requirement for follow-up care.
8) Have some familiarity with basic procedural skills and techniques essential to the practice of Emergency Medicine.

9) Have a rudimentary understanding of special areas of expertise in Emergency Medicine outside of the Emergency Department (e.g., pre-hospital care, trauma systems, disaster planning, poison control systems, etc)
10) Show an understanding of the principles of consent to treatment in the Emergency setting.
11) The following specific areas of learning should be included (but not considered comprehensive):
    - Resuscitation
    - Acute disorders by body system
    - Trauma
    - Toxicology
    - Environmental disorders
    - Acute age-related disorders
    - Emergency medical services systems
    - Technical/procedural skills in Emergency Medicine
12) The clinical clerk will demonstrate an approach to the assessment and management of patients presenting in the Emergency Department with any complaint/problem, including:
    - Chest pain
    - Shock
    - Upper gastrointestinal hemorrhage
    - Acute shortness of breath
    - Upper airway obstruction/compromise
    - Upper and lower respiratory infections
    - Acute abdominal pain
    - Acute flank pain
    - Vomiting
    - Vaginal bleeding
    - Pelvic pain
    - Red eye
    - Hypothermia, hyperthermia
    - Joint pain
    - Back pain
    - Neck pain
    - Dysuria
    - Sexual assault
    - Decreased level of consciousness
    - Acute intoxication
    - Seizures
    - Headache
    - Weakness
    - Acute confusion
    - Suicidal ideation
    - Acute behavioural disturbances
    - Epitaxis
    - Extremity injuries
    - Burns
    - Electrical injuries
    - Animal bites
13) The trainee will demonstrate technical competence as well as be able to list or describe the indications for, contraindications to, complications and adverse effects of, and the obtaining of informed consent for the following procedures:
    - Upper airway management including intubation

- Ventilator support and oxygen therapy
- External chest compression (CPR)
- Arterial puncture
- Venous access
- Spinal and extremity immobilization including collar, fracture board, splint
- Gastric intubation
- Needle and tube thoracostomy
- Local anaesthetic
- Wound management, including suturing
- Anterior nasal packing
- Slit lamp eye assessment and tonometry
- Incision and drainage of abscesses
- Electrocardiography
- Application of external pacemakers
- Spirometry
- Defibrillation/cardioversion
- Foreign body removal – soft tissue and eye.

14) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
15) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
16) Perform a physical examination without causing the patient embarrassment.
17) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
18) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
19) Recognize risk factors and be able to counsel patients on risk reduction.
20) Identify the rights and legal responsibilities of physicians to patients and the community.
21) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
22) Apply the concept of cost-effectiveness to public health interventions.
23) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
24) Determine the validity and applicability of published data through critical appraisal.
25) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
26) Collaborate effectively with patients and families without having to take charge.
27) Demonstrate skill in finding common ground when differences of opinion exist.
28) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
29) Demonstrates the ability to place the needs of patients and families first.
30) Demonstrates honesty and trustworthiness in assessment, study and learning.
31) Demonstrates responsibility and respect.
32) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
33) Be willing to seek help, advice or consultation when needed.
34) Respond to personal and family needs and develop effective support systems

35) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
36) Use the concepts of evidence-based medicine to guide patient care decisions.
37) Identify potential conflict between individual and population interests and seek advice from others.
38) Assess the effectiveness of practice and engage in continuous quality improvement.

***Number of Students accepted per block*: 3**

GASTROENTEROLOGY

Supervisor: Dr. T. Ponich, terry.ponich@lhsc.on.ca (519) 667-6582 Fax: (519) 667-6820

The students will see gastroenterological patients at the outpatient clinics and on the wards. They will be given the opportunity to prepare and present patients and do a number of the in-hospital consultations. They will have the opportunity to see most, if not all, of the GI procedures.

Experience in sigmoidoscopy is usually obtained. The objective of the elective is to obtain a basic knowledge and understanding of the wide spectrum of the GI disease. The clinical presentation of the common GI diseases will be stressed, as well as the most efficient use of the diagnostic resources used in the investigation of these diseases. The student will receive both inpatient and outpatient clinical experience with both adults and children. The evaluation procedure is by consensus of the attending consultants. No night or weekend call is expected.

The students can expect good exposure to adult and paediatric gastroenterology. Since 90% of what is important in arriving at the diagnosis comes from the history, they will learn the value of a thorough history in GI diagnosis. They will also have the opportunity to see how rapidly and precisely endoscopic techniques permit the precise corroboration of the diagnosis.

Objectives:

1) Obtain a basic knowledge and understanding of the wide spectrum of the GI disease.
2) Experience in sigmoidoscopy is usually obtained.
3) The clinical presentation of the common GI diseases will be stressed as well as the most efficient use of the diagnostic resources used in the investigation of these diseases.
4) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
5) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
6) Perform a physical examination without causing the patient embarrassment.
7) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
8) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
9) Recognize risk factors and be able to counsel patients on risk reduction.
10) Identify the rights and legal responsibilities of physicians to patients and the community.
11) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
12) Apply the concept of cost-effectiveness to public health interventions.

13) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
14) Determine the validity and applicability of published data through critical appraisal.
15) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
16) Collaborate effectively with patients and families without having to take charge.
17) Demonstrate skill in finding common ground when differences of opinion exist.
18) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
19) Demonstrates the ability to place the needs of patients and families first.
20) Demonstrates honesty and trustworthiness in assessment, study and learning.
21) Demonstrates responsibility and respect.
22) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
23) Be willing to seek help, advice or consultation when needed.
24) Respond to personal and family needs and develop effective support systems
25) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
26) Use the concepts of evidence-based medicine to guide patient care decisions.
27) Identify potential conflict between individual and population interests and seek advice from others.
28) Assess the effectiveness of practice and engage in continuous quality improvement.

***Number of Students accepted per block*: 1**

GENERAL INTERNAL MEDICINE CLINICAL TEACHING UNIT

Supervisor: Dr. T. Ponich, terry.ponich@lhsc.on.ca, (519) 667-6582, (519) 667-6820

General Internal Medicine Clinical Teaching Unit at Victoria Hospital is comprised of specialists in Internal Medicine. The patients admitted by these Consultants are cared for by a team consisting of a General Medicine Resident, Intern (1 or 2 either rotating or straight medicine) and Clerk (1 or 2). The patient census varies between 10 and 20. The fourth-year clinical clerk choosing this elective is expected to integrate with the team and assume responsibility for the initial work -up and continuing care for a proportion of the team's patients. This implies participation in team rounds and sharing in the call schedule. This elective is designed to develop clinical skills in history taking and physical examination, to facilitate clinical decision-making under supervision, and to allow time for independent reading and learning. Each student should also anticipate at least one clinical presentation at the weekly team rounds. Evaluations are carried out by the Consultants and team Resident and are conveyed to the trainee at the end of the rotation.

***Number of Students accepted per block*: 1**

HEMATOLOGY

Supervisor: Dr. J. Mangel, joy.mangel@lhsc.on.ca (519) 685-8500 Ext: 55232 Fax: (519) 685-8477

In a very busy outpatient service, students would see patients with all types of haematological malignancies (lymphomas, myelomas, leukemias, etc.). In addition there is a steady flow of consultations on benign haematological disorders including coagulation disorders, all aspects of anemias and cytopenias, hemoglobinopathies, etc. The student has the opportunity to spend time in the Haematology Laboratory to get a good introduction into interpretative morphology and other aspects of laboratory haematology and blood banking. The objectives of this elective are to learn to manage common haematological disorders. The student is expected to see follow-up patients and consultations on his/her own and discuss the findings and his/her approach with a consultant for teaching and management purposes. All aspects of clinical and laboratory haematology and blood banking can be studied in this large general haematology service. The student will be evaluated by the quality of his/her clinical approach including history taking, physical examination skills and case presentations and his/her written reports. No night or weekend call is expected. The rotation takes place primarily at LHSC-VH and London Regional Cancer Program. The David Meltzer Award is applicable to this student elective. This elective offers the opportunity to compete for the Dr. David Meltzer Undergraduate Award in Haematology/Oncology. Interested students who complete this elective are to submit an essay in the field by March 31 to Dr. Mangel.

Objectives:

1) During the Haematology rotation, the student should:
   - Develop an approach to the assessment of patients presenting with haematologic problems, including eliciting a relevant, concise, and accurate medical history.
   - Learn to perform an appropriate physical examination in haematology patients, including examination of the lymph node regions, liver and spleen.
   - Learn how to select medically appropriate investigative tools for the work-up of patients with haematological disorders.
   - Observe (and potentially attempt) the most common procedure used in the diagnosis and management of haematologic patients, the bone marrow aspiration and biopsy.
   - Become exposed to morphological examination of blood films and bone marrow aspirates.

2) During the Haematology rotation, the student should:
   - Recognize the importance of good communication in the therapeutic relationship between patient and physician.
   - Develop relationships with patients characterized by compassion, empathy, mutual respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
   - Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
   - Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
   - Deliver care with integrity, honesty and compassion.
   - Understand the ethical issues relevant to the care of the haematology patient (end of life care, consent to transfusion of blood products, etc).

3) During the Haematology rotation, the student should be able to:
   - Identify the important determinants of health as they contribute to haematologic diseases, such as nutritional anemias and secondary malignancies.

- Understand the importance of preventative strategies in haematologic disease.
- Recognize populations “at risk” for haematologic diseases and contribute to promotion of health in “at risk” groups.
- Recognize and respond to issues, settings, circumstances, or situations in which advocacy on behalf of patients, professions, or society is appropriate.

4) During the Haematology rotation, the student should:
   - Demonstrate skill in self-directed learning by:
   - Ability to identify areas of deficiency in one's own knowledge and skills.
   - Ability to find appropriate educational resources.
   - Ability to evaluate personal learning progress.
   - Ability to use new knowledge in the care of patients.
   - Learn the physiology of important topics in haematology, including haematopoiesis, the immune system, and haemostasis.
   - Learn the pathophysiology underlying the common haematological disorders, such as disorders of iron and haemoglobin, autoimmune destruction of red cells and platelets, haematologic malignancies, venous thromboembolism and bleeding disorders.
   - Learn about the medications commonly used in patients with haematological disorders.
   - Determine the validity and applicability of published data through critical appraisal.

5) During the Haematology rotation, the student should:
   - Recognize and respect the roles of physicians, nursing staff, physiotherapists, occupational therapists, pharmacists and social workers in provision of optimal care of the haematology patient.
   - Work together with all the members of a multidisciplinary health care team to develop care plans for haematology patients, including investigation, treatment and continuing care.
   - Establish effective relationships with colleagues and other members of the health care team.
   - Demonstrate responsibility and respect.
   - Recognize personal biases and ensure that they do not interfere with the patient's best interests.
   - Be willing to seek help, advice or consultation when needed.
   - Respond to personal and family needs and develop effective support systems.
   - Exhibit appropriate personal and interpersonal professional behaviours.

6) During the Haematology rotation, the student should:
   - Assist patients in accessing the health care system.
   - Use the concepts of evidence-based medicine to guide patient care decisions.
   - Identify potential conflicts between individual and population interests and seek advice from others including ethicists, when necessary, to help resolve issues.
   - Demonstrate effective organizational and time management skills to achieve balance between career and personal responsibilities.
   - Use diagnostic tests appropriately and consider cost-benefit issues when selecting diagnostic and therapeutic strategies.

7) During the Haematology rotation, the student should:
   - Assess the effectiveness of practice and engage in continuous quality improvement.
   - Support and value the work of scientists as vital to the health of patients with haematological problems.

***Number of Students accepted per block*: 1**

NEPHROLOGY

Supervisor: Dr. Rita Suri, rita.suri@lhsc.on.ca, 519-685-8500, ext. 58066, Fax #: 519-685-8266

This 2-week rotation will provide exposure to the nephrology ward inpatient service, nephrology consultation service, outpatient nephrology clinics, and hemodialysis and peritoneal dialysis.

Two weeks before the rotation, the student will receive an email to their UWOMEDS ACCOUNT from Dr. Suri's assistant, Ms. Robin Ljunggren. Please check this account. The email will contain an orientation package, clinic scheudule, and indicate where to report for duties.

Dr. Suri will try to meet with you personally on the first Monday at 8:45 am in the Renal Clinic. If she is away, please report for duties according the schedule provided to you by Ms. Ljunggren. (If you have not received the orientation package, please report to C6-100 at 9:15 to attend ward rounds and contact Ms. Ljunggren later that day to get your package).

DUTIES:

A. One week on the ward service (C6-100)

The student will function as part of the nephrology team with the junior and senior residents. The student will be expected to take responsibility for the care of at least 3 patients with appropriate supervision, commensurate with their level of training and experience. Please see orientation package for details.

1. One week on clinics AND consult service

a) *CLINICS*
The student is expected to attend at least 5 outpatient clinics. You will receive a clinic schedule with your orientation package. You may choose clinics that have no more than one learner. Please email Ms. Robin Ljunggren or Dr. Suri with the clinics you have chosen to attend.

The student will see patients on his/her own, review them with the consultant in the clinic, and then dictate an appropriate new consultation or follow-up note. The 3rd year students are encouraged to start with follow-up patients, while 4th students may see new consultations.

b) *CONSULTS*
When the student is not in clinic, they are expected to round on the consult service with the nephrology fellow (please page the consult fellow on your first day to set up a schedule). The student may also be asked to see new consults and write follow-up notes on 2-3 patients per day to enhance their learning experience.

EVALUATIONS:

Please get your evaluation filled out by the consultant you worked with the most during your rotation, and hand in to Dr. Suri's office on the SECOND LAST DAY. Please fill out your online evaluation of the rotation to provide feedback so that we may improve future rotations for others.

OBJECTIVES:

The following objectives pertain to the Medical Expert/Decision Maker part of the CanMEDS Roles. For the other roles, please see the Undergraduate Medial Curriculum Competencies (page 9).

By the end of the rotation, the student will become familiar with the following:

1) Volume Status

a) Assessment of volume status (volume depletion, volume overload, and euvolemia) using history and physical exam.
b) Recognition of pulmonary and interstitial edema on CXR.
c) Strategies to treat volume depletion and volume overload.

2) Electrolyte Disorders

a) Diagnosis, pathophysiology, and acute treatment of life-threatening electrolyte disorders, including:
i) hypo and hypernatremia
ii) hypo and hyperkalemia
iii) metabolic acidosis - including normal and increased anion gap metabolic acidosis

3) Acute Kidney Injury

a) Approach to the diagnosis of pre-renal, post-renal, and renal causes of AKI - *specifically understanding the importance of urinalysis in arriving at a diagnosis*
b) Management of pre-renal and post-renal causes of AKI
c) Recognition of indications for urgent dialysis
d) Recognition of when urgent nephrology referral is required for diagnosis and/or management of AKI
    -eg. renal causes such as ATN, AIN, nephritic / nephrotic syndrome, TTP/HUS
    -eg. urgent dialysis indicated

4) Chronic Kidney Disease

a) Understanding measures of renal function, including:
i) how to interpret serum creatinine, creatinine clearance, and eGFR
ii) approach to persisent hematuria and proteinuria
c) Appropriate management of cardiovascular risk factors in patients with CKD
d) Recognition of complications of CKD, including uremic symptoms, anemia, and abnormalities of phosphate metabolism
e) Recognition of when nephrology referral is required for management of CKD

5) Drugs and the Kidney

a) Recognition of commonly prescribed nephrotoxic drugs
b) Recognition of when dose adjustments are required for reduced renal function

11) Procedures

3) Recognize the indications for central venous access
4) Understand common complications of obtaining central venous access
5) Assist the fellow or consultant in insertion of dialysis catheters (optional)

It is your responsibility to ensure you have covered these topics during the rotation. Please read, ask questions, and seek help from the residents, fellows, and consultants.

***Number of Students accepted per block*: 1**

RESPIROLOGY

Supervisor: Dr. D. McCormack, david.mccormack@lhsc.on.ca, (519) 667-6767 FAX: (519) 685-8406

Note: Students will be assigned to either the SERD Team located at Victoria Hospital or to the NERD Team at University Hospital.

This elective is a combined in-patient and out-patient rotation offering exposure to (1) patients with chest problems admitted to the Respirology Unit, (2) out-patient (clinic) referrals and (3) diagnostic services: radiology rounds, procedures (bronchoscopy, etc.) and pulmonary function tests.

Objectives:

1) Develop proficiency in clinical evaluation of patients with common chest problems;
2) Apply an understanding of pulmonary pathophysiology to disease processes;
3) Learn indications for common diagnostic modalities (pulmonary function tests, bronchoscopy, radiologic evaluations, etc);
4) Acquire a practical approach to the management of common chest problems.
5) Exposure to patients with sleep disorders is an optional objective.
6) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
7) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
8) Perform a physical examination without causing the patient embarrassment.
9) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
10) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
11) Recognize risk factors and be able to counsel patients on risk reduction.
12) Identify the rights and legal responsibilities of physicians to patients and the community.
13) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
14) Apply the concept of cost-effectiveness to public health interventions.
15) Demonstrate skill in self-directed learning by:
16) Ability to identify areas of deficiency in one's own knowledge and skills.
17) Ability to find appropriate educational resources.
18) Ability to evaluate personal learning progress.
19) Ability to use new knowledge in the care of patients.
20) Determine the validity and applicability of published data through critical appraisal.
21) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
22) Collaborate effectively with patients and families without having to take charge.
23) Demonstrate skill in finding common ground when differences of opinion exist.
24) Establish effective relationships with colleagues and other member of the health care team by:
25) Considering their suggestions and criticisms.
26) Tactful handling of differences of opinion.
27) Demonstrates the ability to place the needs of patients and families first.
28) Demonstrates honesty and trustworthiness in assessment, study and learning.
29) Demonstrates responsibility and respect.
30) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
31) Be willing to seek help, advice or consultation when needed.

32) Respond to personal and family needs and develop effective support systems
33) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
34) Use the concepts of evidence-based medicine to guide patient care decisions.
35) Identify potential conflict between individual and population interests and seek advice from others.
36) Assess the effectiveness of practice and engage in continuous quality improvement.
37) Exposure to patients with sleep disorders is an optional objective.

The student will participate in in-patient care and/or attend out-patient clinics. The proportion of in-patient and ambulatory experience can be tailored to the students' needs.

The student will be expected to attend all clinical teaching sessions. Formal sessions (journal club, respirology teaching rounds, city-wide lecture series, and a multi disciplinary Radiology Round - each held once weekly) provide focus for the educational experience. The evaluation will include assessment in out-patient clinics and during clinical and diagnostic rounds. Off-hours experience is voluntary.

***Number of Students accepted per block*: 1**

OBSTETRICS & GYNAECOLOGY

COORDINATOR: Dr. Rob Gratton
OFFICE LOCATION: St. Joseph's Health Care
ADMINISTRATOR Vicki Douvalis Email: Vicki.douvalis@sjhc.london.on.ca

Please note that this description has not been updated. It is subject to change.

General Description:

The fourth year Clinical Science Electives in the Department of Obstetrics and Gynaecology offer the student the opportunity to enhance his/her skills in out-patient diagnosis and management. The student is expected to attend according to the schedule agreed upon with the supervisor, including call duty, rounds etc. for the full block. Students with specific learning objectives for their experience should arrange a time to meet with the supervisor to discuss them.

General Learning Objectives:

Upon completion of the clinical elective, students should:

1. Demonstrate competence in patient assessment, assigning priorities to new problems presented and weighing the relevance of the information obtained.
2. Be able to present a succinct history in verbal or written form.
3. Be capable of developing a differential diagnosis from history and physical examination.
4. Be comfortable with and competent to perform bi-manual examination, pap smear and vaginal swab.
5. Be able to develop an optimum plan for further investigation and treatment of patient problems based on the patient's individual needs, an evidence-based approach and a consideration of resource availability.
6. Be aware of the nature and principles of management of tertiary problems within the specialty of obstetrics and gynaecology.
7. Have a satisfactory understanding of the nature of the practice of obstetrics and gynaecology and the lifestyle of the obstetrician/gynaecologist.
8. Be capable of making a well-informed decision regarding the selection of this specialty as a vocation.

Objectives:

A. Obstetrics

a) Perform a complete history, physical examination, establish and confirm gestational age and identify risk factors during an initial antenatal assessment.
b) Identify health issues and counsel patients with respect to nutrition, activity and exercise, sexual activity, smoking and drug use in pregnancy.
c) Discuss the importance of routine prenatal laboratory investigations, prenatal diagnostic options (IPS, Quad screen, amniocentesis, CVS) and ultrasound assessment of fetal morphology.
d) Participate in ongoing antenatal care and investigations (GDM screening, Rh prophylaxis, GBS screening, term cervical assessment) to ensure maternal health and normal fetal growth and wellbeing.
e) Provide assessments of normal healing at 6 weeks post partum, counselling of approximate VBAC considerations, and counselling on contraceptive options.

B. Gynaecology

a) Perform a sensitive, organized history (including menstrual, contraceptive, sexual and gynaecologic history) in ambulatory patients presenting with gynaecologic problems.

b) Perform a complete physical examination with an emphasis on the gynaecologic examination (abdominal exam, bimanual pelvic exam, speculum exam and pap smear) in ambulatory patients presenting with gynaecologic problems.
c) Develop a differential diagnosis and management plan for common gynaecologic problems (dysmenorrhea, dysfunctional uterine bleeding, contraception, infertility, pelvic mass, menopausal symptoms, post menopausal bleeding, pelvic relaxation and urinary incontinence).
d) Understand the importance of screening for cervical cancer and current screening programs. Discuss the results of an abnormal pap smear and outline appropriate follow up or investigations.

1) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
2) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
3) Perform a physical examination without causing the patient embarrassment.
4) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
5) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
6) Recognize risk factors and be able to counsel patients on risk reduction.
7) Identify the rights and legal responsibilities of physicians to patients and the community.
8) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
9) Apply the concept of cost-effectiveness to public health interventions.
10) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
11) Determine the validity and applicability of published data through critical appraisal.
12) Collaborate effectively with patients and families without having to take charge.
13) Demonstrates the ability to place the needs of patients and families first.
14) Demonstrates honesty and trustworthiness in assessment, study and learning.
15) Demonstrates responsibility and respect.
16) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
17) Be willing to seek help, advice or consultation when needed.
18) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
19) Use the concepts of evidence-based medicine to guide patient care decisions.
20) Identify potential conflict between individual and population interests and seek advice from others.
21) Assess the effectiveness of practice and engage in continuous quality improvement.

GENERAL OBSTETRICS AND GYNAECOLOGY (LHSC - WC)

Supervisor: Dr. Michael Maruncic 519-685-8193

Objectives:
1. To provide exposure to a wide variety of obstetrical and gynaecologic problems in both in-patient and out-patient settings.
2. To provide an elective experience that is more in keeping with the day-to-day practice pattern of members of our department who practice obstetrics and gynaecology, allowing an opportunity to assess this career path.
3. To develop expertise in the delivery of routine care to the antenatal patient through all stages of pregnancy, including intrapartum and postpartum care.

This elective will improve knowledge base and skills as they relate to the practice of obstetrics and gynaecology.

Number of Students Accepted: One student per block. Two-week electives available in all blocks.

GYNAECOLOGY AND REPRODUCTIVE MEDICINE (LHSC-UH)

Supervisor: Dr. Jackie Hollett-Caines
Consultant Staff: Drs. Valter Feyles, Steve Power, Jackie Hollett-Caines and Maggie Rebel.

This elective encourages participation in the reproductive endocrinology and infertility subspecialty. The rotation would include ambulatory clinics and exposure to assisted reproductive technologies and the laboratory support for the area.

Please contact Susan Badcock at 685-8500 ext. 32916 to inquire as to time and location to report to on beginning the elective.

Objectives:
1. Familiarity with basic reproductive physiology and pathophysiology.
2. Familiarity with basic infertility and perimenopause investigations and treatments.
3. Observation of assisted reproductive technology monitoring, procedures and laboratory techniques.

Number of Students Accepted: One student per block. Two-week electives available in all blocks.

MATERNAL/FETAL MEDICINE (SJHC)

Supervisor: Dr. B. deVrijer 519-646-6106
Consultant Staff: Drs. Barbra deVrijer, Robert Gratton, Laudelino Lopes, Renato Natale, Bryan Richardson and Jordan Schmidt

Clinical training is offered in a broad range of activities related to high- risk obstetrical care. The 4-week elective includes structured time in:

- high-risk obstetrical clinics (4 clinics per week)
- obstetrical endocrine clinic (1 clinic per week)
- low-risk obstetrical clinic (1 clinic per week)
- perinatal outreach program (1 outreach visit)
- in-patient maternal-fetal medicine (consultations)

Number of Students Accepted: One student per block. 4-WEEK ELECTIVES ONLY.

UROGYNAECOLOGY

Supervisor: Dr. Barry MacMillan
Consultant Staff: Drs. Dr. Queena Chou and Barry MacMIllan

Students should call Dr. MacMillan's secretary at ext. 66247 to arrange meeting time and place at the start of each rotation.

Learning Objectives:
The student will be introduced to the subspecialty of Urogynaecology and Reconstructive Pelvic Surgery and gain experience in the clinical assessment, medical and surgical treatment of all disorders involving the lower genital tract in women. In particular, there will be a focus on the assessment, investigation and treatment of urinary incontinence and genital prolapse. There will also be exposure to general gynaecology and obstetrical patients and an expectation to participate.

Number of Students Accepted: One student per block. Two-week electives available in all blocks.

GYNAECOLOGICAL ONCOLOGY

Supervisor : Dr. Monique Bertrand
Consultant Staff: Drs. Monique Bertrand, Akira Sugimoto and Michel Préfontaine

Learning Objectives:
The elective student will have a multidisciplinary experience involving ambulatory clinics, colposcopy, and surgery. Students will have an understanding of the approach to the diagnosis and management.

Number of Students Accepted: One student per block. 2 or 4 week electives available.

GENERAL GYNAECOLOGY LHSC- Women's Clinic Elective

Supervisor: Dr. Ron Robins 519-432-7657

This elective at WHCC (LHSC-WC) will provide students with a clinical educational opportunity in pregnancy options and counselling, first trimester surgical abortion, colposcopy, and general gynaecology issues.

Learning Objectives:
1. Provision of impartial pregnancy options counselling, recognizing the prevalence and incidence of unplanned pregnancy and some of the factors contributing to unplanned pregnancy.
2. Learn necessary components of pre-operative abortion care, including preparation and/or dilating the cervix prior to surgical abortion, and methods of effective pain control.
3. Know the general principles of performing a first trimester surgical abortion (suction curettage, manual vacuum aspiration) as well as the complications of a first trimester surgical abortion and their respective incidences.
4. Understand the principles of post-abortion care, including contraception and the management of common complaints.

Skills Acquired Include:
1. Establishing peripheral intravenous access
2. Bimanual pelvic exam
3. Speculum exam
4. Local cervical block
5. Mechanical cervical dilatation
6. Suction Curettage
7. PAP Smears
8. Contraception counselling
9. Basic colposcopic assessment
10. STD assessment and treatment

Number of Students Accepted: One student per block. Two-week electives available in all blocks.

This elective will improve knowledge base and skills as they relate to the practice of obstetrics and gynaecology.

GENERAL OBSTETRICS AND GYNAECOLOGY (SJHC)

Supervisor: Dr. Debbie Penava
Consultant Staff: Drs. Tracey Crumley, Rob Di Cecco, Fraser Fellows, Erin Lovett, and Debbie Penava

Objectives:
1. To provide exposure to a wide variety of obstetrical and gynaecologic problems in both in-patient and out-patient settings.
2. To provide an elective experience that is more in keeping with the day-to-day practice pattern of members of our department who practice obstetrics and gynaecology, allowing an opportunity to assess this career path.
3. To develop expertise in the delivery of routine care to the antenatal patient through all stages of pregnancy, including intrapartum and postpartum care.
4. Provision of impartial pregnancy options counselling, recognizing the prevalence and incidence of unplanned pregnancy and some of the factors contributing to unplanned pregnancy.
5. Learn necessary components of pre-operative abortion care, including preparation and/or dilating the cervix prior to surgical abortion, and methods of effective pain control.
6. Know the general principles of performing a first trimester surgical abortion (suction curettage, manual vacuum aspiration) as well as the complications of a surgical abortion and their respective incidences.
7. Understand the principles of post-abortion care, including contraception and the management of common complaints.

This elective will improve knowledge base and skills as they relate to the practice of obstetrics and gynaecology.

Number of Students Accepted: One student per block. 4-WEEK ELECTIVES ONLY.

SCHEDULED TEACHING SESSIONS AND OTHER SCHOLARLY ACTIVITIES:

Thursdays (0800) Clinical Clerk Teaching Seminar: Roney Auditorium B, SJHC.
Wednesdays (0800) Obs/Gyn Grand Rounds: Inquire regarding location.
Fridays (0800) Hospital Rounds at each site.

OCCUPATIONAL MEDICINE AND FAMILY MEDICINE ELECTIVE IN WINDSOR, ESSEX COUNTY AND LAMBTON COUNTY

DEPARTMENT: **FAMILY MEDICINE**

EDUCATION COORDINATOR: Dr. Haider Hasnain Tel 519-979-5260,
Fax 519-979-8085,
Pager 519-790-7826, email tecmedclinic@bellnet.ca

OFFICE LOCATION: TECUMSEH COMMUNITY HEALTHCARE CENTRE
13390 LANOUE STREET,
TECUMSEH, ONTARIO N8N 5E1,
519-979-5260

Please note that this description has not been updated. It is subject to change.

INTRODUCTION:

Electives in Occupational Medicine can usually be geared for a 2-week or a 4-week block. These can be geared to meet the needs of the individual.

A) **General Description**:

Occupational Medicine at the satellite medical school in Windsor, Ontario and surrounding areas. Transportation to the different sites will be provided from the central office location. Work site visits include Caesars Windsor, Navistar (International Trucks), Nova Chemicals Ltd., many numerous small plants and workplaces, and also include workers being sent to our facility. The other companies include Johnson Controls, Schukra, and Magna, HBPO Automotive as well as a Big 3 automotive manufacturer and a mushroom plant.

The prospective student will get extensive training in WSIB (Workplace and Safety Insurance Board) legislation as it impacts upon the worker/patient's injury and illness. Training in return to work issues, disability issues, assessment of soft tissue injuries, and assessment of exposure to mercury, isocyanates, benzene and other designated substances. There is also training in ordering of appropriate tests, physical examinations, and treatment plans.

The student will report to Dr. Hasnain on the first day of the elective in Tecumseh, Ontario or at one of the above facilities. Please contact 2 weeks in advance to discuss details.

B) **Learning Objectives**:

At the Conclusion of the elective the student should;

1. Be able to describe the workings of the Compensation System.
2. Be able to manage the most common soft tissue injuries sustained in the workplace.
3. Be able to conduct a Plant Walk-Through critically.
4. Have a clear understanding of the most appropriate investigations to consider and order, be able to form a differential diagnosis, and also a treatment plan
5. Have participated in the small group sessions and any other meetings as appropriate.

C) **Type of Clinical Experience**

In Patient	( )
Out Patient	(X)
On site visits	(X)

D) **Night and Weekend Call**

No (X)

E) **Evaluation Procedure**

Written Exam ( )
Oral Exam ( )
Informal Clinical Eval. (X)

F) **Number of Students Accepted**

Each Block: **1**

G) **Other Comments, Regulations, and Expectations**

The student is expected to show initiative in some self-directed learning and asking questions and also in seeing as many cases as possible. There will be one problem-based group learning session per month after regular hours. These may be up to two per month. An internet accessible computer is also available.

Note: Registration for this elective is NOT through the lottery.

ONCOLOGY

www.uwo.ca/oncology

Please note that Medical Oncology and Radiation Oncology have different objectives for each elective.

Elective Program Administrator: (Admin)
Ms. Jen Foxcroft
Room A4-901C
LHSC – London Regional Cancer Centre (Victoria Campus)
Phone: 519-685-8500 ext 53177
Fax: 519-685-8739
Email: jen.foxcroft@lhsc.on.ca

General Description

The London Regional Cancer Program (LRCP) offers clinical electives to undergraduates in fourth year providing a more focussed outpatient and inpatient ward experience in Medical or Radiation Oncology with clinical assignments.

Additionally, there are some opportunities to do a number of diagnostic/therapeutic procedures under the supervision of the consultant, i.e. paracentesis, thoracocentesis.

At the end of this rotation, students will

- Have an understanding of an approach to the management of common malignancies
- Be comfortable with oncology as expected of an undifferentiated physician
- Have an understanding of how cancer care is delivered in Ontario/Canada
- Be aware of oncology as a career choice.

Medical Oncology Undergraduate Education Director:
Dr. Michael Sanatani
Room A3-915
LHSC – London Regional Cancer Program (Victoria Campus)
Phone: 519-685-8600 x 58640
Email: Michael.Sanatani@lhsc.on.ca

Medical Oncology:

We currently offer 4 different disease site tracks. Elective students can choose to do a combination of 2 of these 4 disease sites tracks while doing a two week elective in Medical Oncology.

The four disease sites offered are:

1. Breast Cancer track
2. Thoracic track
3. GI/H&N track
4. GU track

Objectives for each of these tracks are:

1. **Breast Cancer Track:**
   Demonstrate knowledge of the pathogenesis of breast cancer including the influence of risk factors: dietary, genetic, environmental, lifestyle, prior malignancy and prior therapy.

Describe, in general terms the sub-classification of breast cancer into subtypes based on genetic profiling and histologic characteristics (ER/PR status, Her2NEU status, etc.) and the clinical significance of this.

Describe the indications for mastectomy vs. breast conserving surgery, sentinel node biopsy vs. axillary node dissection.

Presented with a patient with early stage breast cancer, describe in general terms the roles of surgery, radiation, and adjuvant chemotherapy or hormonal therapy.

Compare adjuvant systemic therapies (chemotherapy, trastuzumab, hormonal) and contrast the indications for their use. Presented with a patient with resected breast cancer, list factors used in deciding which adjuvant therapy to offer.

Presented with a patient with metastatic breast cancer, compare hormonal vs. chemotherapeutic treatment options and list factors used to guide choice of agents.

2. **Thoracic track:**

Demonstrate knowledge of the data and controversies regarding different screening methods for lung cancer

i) Sputum cytology
ii) Chest x-ray
iii) CAT scan

Demonstrate knowledge of the pathogenesis of Lung Cancer including the risk factors

i) Smoking
ii) Impact of smoking cessation
iii) Asbestos exposure: occupational, non-occupational
iv) Environmental exposures
v) Underlying lung diseases

Demonstrate knowledge of the general classification of lung cancers: Non-Small Cell Lung Cancer

i) Adenocarcinoma and subtypes
ii) Squamous Cell Carcinoma
iii) Large Cell Carcinoma
iv) Neuroendocrine Tumors (Well-differentiated bronchial neuroendocrine tumors, Atypical bronchial neuroendocrine tumors, Large Cell Neuroendocrine Carcinoma, Small Cell Carcinoma)

Presented with a patient with early stage lung cancer, describe in general terms the roles of surgery, radiation, and adjuvant chemotherapy.

Presented with a patient with locally advanced non small cell lung cancer, compare and contrast palliative versus curative treatment strategies.

Presented with a patient with a patient with stage IV non-small cell lung cancer, outline in general terms which systemic treatment modalities are employed, and the rationale for using chemotherapy.

Describe the significance of EGFR mutations for the management of lung cancer.

Describe the role of chemotherapy in managing small cell lung cancer, and compare to the management of non-small cell lung cancer.

3. **GI/H&N Track:**
Demonstrate knowledge of the pathogenesis of Head and Neck (H&N) cancers, recognizing the influence of tobacco and alcohol in pathogenesis and multiplicative risk relationship between certain viruses and H&N cancers.

Demonstrate knowledge of the typical histologies of common GI cancers, including gastroesophageal cancer, pancreatic cancer, and colorectal cancer as well as one risk factor for fir each of these primary sites.

Presented with a patient with resectable GI or head and neck cancer, indicate whether neoadjuvant (or adjuvant) systemic therapy is *usually* recommended, and which patient and tumour features are taken into consideration in arriving at a treatment decision.

Presented with a patient with advanced gastro-esophageal cancer, outline first line systemic treatment options.

Presented with a patient with advanced pancreatic cancer, outline first line systemic treatment options.

Presented with a patient with advanced colorectal cancer, outline first line systemic treatment options.

4. **GU Track:**
Demonstrate knowledge of risk factors for and typical presentation of urothelial, renal, prostate, and germ cell cancers.

Presented with a patient with localized bladder cancer, outline the necessary staging investigations to determine whether neoadjuvant therapy is needed.

Presented with a patient with testicular germ cell cancer, describe the treatment options for stage I disease . Outline the use of the International Prognostic System as a guide for treatment and prognostication of advanced disease.

Discuss the pros and cons of prostate cancer screening by PSA.

Presented with a patient with advanced renal cell carcinoma, indicate two systemic agents that could be used to offer palliation.

Compare and contrast the management priorities and likely disease trajectories for a patient with metastatic muscle-invasive bladder cancer versus a patient with previously untreated prostate cancer.

Outline the role of bisphosphonates in the management of prostate cancer.

Radiation Oncology Undergraduate Medical Education Director:
Dr. Belal Ahmad
Room A3-907
LHSC – London Regional Cancer Centre (Victoria Campus)
Phone: 519-685-8500 ext 53301
Email: belal.ahmad@lhsc.on.ca

Radiation Oncology:

We offer a two week elective with an assigned preceptor in Radiation Oncology. During the elective, you will attend all new patient, follow up and patient review clinics, CT simulation sessions, OR activities and inpatient activities. Applicants may request their ordered preference of the five **MAJOR** disease sites, and we will try our best to accommodate the request. Your preceptor will treat at least **ONE MAJOR** site.

1) Breast (Breast Cancer, DCIS)
2) Genitourinary (Prostate, Bladder, Testicle, Kidney)
3) Gastrointestinal (Colorectum, Stomach, Pancreas, Anus)
4) Thoracic (Lung, Esophagus)
5) Gynecology (Cervix, Uterus, Vulva)

Students interested in a brachytherapy experience should make the request in their application. Other disease sites that a student may experience include:

1) Head and Neck
2) Sarcoma
3) Pediatrics
4) Skin
5) Palliative

Knowledge Objectives:

1. For the most common diseases within each **MAJOR** Disease Site that the student is exposed to, we expect the clerk to learn: risk factors, epidemiology, histologies, staging investigations, TNM staging, radical, adjuvant and palliative treatment options, outcomes of treatments, and general side effects of treatments

More specific to Radiation Oncology:

a) Understand the basic principles of radiation physics (radioactive isotopes vs linear accelerators, photons vs electrons, measurements of radiation energy and dose)
b) Understand the basic principles of radiobiology (Cell Cycle, 4 R's of Radiotherapy, radiosensitivity vs radioresistancy)
c) Understand the basic principles of radiation safety
d) The role of radiotherapy in the management of patients with cancer, and the complications and side effects that can result from radiotherapy
e) The importance of a multidisciplinary approach to cancer management through MDT clinics and DST rounds
f) The process by which treatment plans are generated from an understanding of tumor volume, normal tissue considerations and natural history of the disease by visiting the CT simulation room and reviewing approved plans

g) The implementation of radiotherapy treatment plans by visiting a treatment unit and observing immobilization device use, treatment verification , and use of radiotherapy equipment.

ELECTIVES DESCRIPTION SUMMARY

i) Radiation Oncology
- 2 week rotation
- 1 student assigned to a radiation oncologist for one week at a time
- attends O.P. clinics and MDT rounds
- to cover main tumour sites
- performs in-hospital consultations
- attend simulations
- attend all rounds
- inpatient care as per attending
- attend O.R. as per attending

Night and Weekend Call - No

Evaluation Procedure - Pass/Fail

Number of Students Accepted - **Each Block: Only 1 student each Block.**

Orientation is held at 8:30 a.m., on the first day of the elective. Please contact Jen Foxcroft regarding the location one day prior to your start at above email or phone number provided.

The Ivan H. Smith Memorial Prize

Awarded to the final two years medical student demonstrating outstanding interest in Oncology. Donated by the friends of the late Dr. Ivan Hamilton Smith. *$300 (Book Prize)*
http://www4.registrar.uwo.ca/FinancialServices/AwardSearchProc.cfm?Letter=I

OPHTHALMOLOGY

COORDINATOR: Dr. Alain Proulx
ADMINISTRATOR: Lyn Clark, Phone: 519 646-6382
Email: lyn.clark@lhsc.on.ca

OFFICE LOCATION: Ivey Institute of Ophthalmology, Room B2-072, St. Joseph's Health Care

2-WEEK ONLY ELECTIVES IN OPHTHALMOLOGY

Please note that this description has not been updated. It is subject to change.

DESCRIPTION

A) **General Description**

Exposure to the clinical ophthalmology in out-Patient Departments of the three teaching hospitals. Association with in-patient services, investigative and surgical procedures and post-operative management.

B) **Learning Objectives**

Recognition of the clinical problems confronted by those rendering eye medical services, and ability to discriminate between minor eye problems and those requiring secondary to tertiary care.

Routine eye examination as part of a general physical examination will be stressed, and treatment of eye conditions within the scope of the family physician.

Sufficient exposure will be provided to those who may be interested in tertiary eye care levels to stimulate their interest in the speciality.

1) The Eye Examination
    a. Describe normal ocular anatomy.
    b. Measure and record visual acuity.
    c. Determine and record colour vision.
    d. Perform Schiotz tonometry.
    e. Use the slit-lamp.
    f. Use the direct ophthalmoscope for fundus examination.
    g. Differentiate a normal from an abnormal fundus.
    h. Determine whether reduced visual acuity is due to ocular, systemic or neurological disease
    i. Dilate pupils.
2) Acute & Chronic Visual Loss
    a. Obtain an accurate history regarding the onset of visual loss and modify the general history to take into account possible systemic causes.
    b. Distinguish acute visual loss caused by medical opacity from that caused by retinal and optic nerve disease, using a penlight and direct ophthalmoscope.
    c. Recognize a normal from an abnormal optic disc.
    d. Perform a Schiotz tonometry.
    e. Recognize a cataract and determine its effect on vision.
    f. Determine if a cataract is the only cause of a patient's visual loss.
    g. Examine the macula and recognize a macular abnormality.

3) Red Eye
    a. Perform the appropriate diagnostic steps for the red eye.
    b. Recognize the dangerous signs and symptoms that may accompany red eye and recognize those problems that should be referred to an ophthalmologist.
    c. Describe the treatment for those conditions that can be treated by undifferentiated physician.
    d. Describe the serious complications of prolonged use of topical anaesthetic and corticosteroid drops.
4) Injuries
    a. Modify history and examination in order to determine the problem quickly and efficiently.
    b. Describe and initiate immediate treatment in true ocular emergencies (e.g., chemical burn).
    c. Describe and demonstrate procedure required to examine an injured eye and record visual activity as accurately as possible.
    d. Describe the treatment of those common ocular and orbital injuries that can be managed by the undifferentiated physician and identify those that require referral.
    e. Demonstrate common treatment skills required to handle eye injuries.
5) Amblypoia and Strabismus
    a. Measure or estimate visual acuity in children.
    b. Detect strabismus by gross inspection, the corneal light reflex and the cover test.
    c. Perform ophthalmoscopy on a child to rule out organic causes of reduced acuity or strabismus.
    d. Describe to the parents the effects of amblyopia and explain the need for prompt treatment by an ophthalmologist.
6) Neuro-Ophthalmology
    a. Detect abnormalities of visual acuity.
    b. Examine and detect abnormalities in papillary reactions and interpret abnormal papillary reactions.
    c. Examine and detect abnormalities in the function of the extraocular muscles.
    d. Examine and detect abnormalities in peripheral vision (visual fields) and interpret their meaning.
    e. Examine and detect abnormalities of the optic nerve head.
7) Ocular Manifestations of Systemic Disease
    a. Recognize, on ophthalmoscopic examination, the characteristic features of nonproliferative and proliferative diabetic retinopathy.
    b. Explain to the patient (or parent) the natural history of untreated diabetic retinopathy and the expectations of laser therapy.
8) Drugs and the Eye
    a. Demonstrate the correct application of eye drops to the conjunctival sac.
    b. Discuss and detect the ocular effect and complications of topical ocular anaesthetics, mydriatics and corticosteroids.
    c. Discuss and detect the ocular side effects of systemically administered corticosteroids, chloroquines, digitalis, dephenylhydantion, ethambutol and the phenothiazines.
    d. Discuss and detect the systemic side effects of topically administered beta-adrenergic blockers, the cholinergic simulators and the adrenergic drugs.
9) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
10) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
11) Perform a physical examination without causing the patient embarrassment.
12) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.

13) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
14) Recognize risk factors and be able to counsel patients on risk reduction.
15) Identify the rights and legal responsibilities of physicians to patients and the community.
16) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
17) Apply the concept of cost-effectiveness to public health interventions.
18) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
19) Determine the validity and applicability of published data through critical appraisal.
20) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
21) Collaborate effectively with patients and families without having to take charge.
22) Demonstrate skill in finding common ground when differences of opinion exist.
23) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
24) Demonstrates the ability to place the needs of patients and families first.
25) Demonstrates honesty and trustworthiness in assessment, study and learning.
26) Demonstrates responsibility and respect.
27) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
28) Be willing to seek help, advice or consultation when needed.
29) Respond to personal and family needs and develop effective support systems
30) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
31) Use the concepts of evidence-based medicine to guide patient care decisions.
32) Identify potential conflict between individual and population interests and seek advice from others.
33) Assess the effectiveness of practice and engage in continuous quality improvement.

C) <u>Type of Clinical Experience</u>

In Patient	( )
Out Patient	( )
Both	(xx)

D) <u>Night and Weekend Call</u>

Yes	( )
No	(xx)

E) <u>Evaluation Procedure</u>

Written Exam	( )
Oral Exam	( )
Informal Clin. Exam	(xx)

F) <u>Number of Students Accepted</u>
Each block: 1 per block

G) <u>Other Comments, Regulations or Expectations</u>
It is expected that a fourth year clinical elective will spend time at each of the three teaching hospitals in the eye department -- with exposure to all facets of the department's activities.

OTOLARYNGOLOGY – HEAD AND NECK SURGERY

COORDINATOR: Dr. Kevin Fung
LHSC - Victoria Hospital, Room B3-427A
Phone: 685-8599
Fax: (519) 685-8567
Email: Kevin.Fung@lhsc.on.ca

ADMINISTRATIVE ASSISTANT: Ms. Angelika Edwards
LHSC – Victoria Hospital, Room B3-453
Phone: (519) 685-8500 Extension 55807
Fax: (519) 685-8468
Email: Angelika.Edwards@lhsc.on.ca

A) Introduction

Clinical elective students are defined as medical students spending an intensive continuous period in the Department of Otolaryngology – Head and Neck Surgery. An elective block is typically 2 to 4 weeks. It is understood that elective students have a particular interest in the specialty beyond the experience obtained during their core medical curriculum.

B) Description

The Otolaryngology program at the University of Western Ontario is based at three teaching hospitals in London, Ontario: London Health Sciences Centre - Victoria Hospital, University Hospital, and St. Joseph's Health Care. UWO is the only major referral centre for Southwestern Ontario, and provides comprehensive tertiary level care in every Otolaryngology subspecialty, including:

- Head and Neck Oncology
- Head and Neck Microvascular Reconstructive Surgery
- Otology and Neuro-otology
- Pediatric Otolaryngology
- Laryngology and Professional voice
- Rhinosinology and Endoscopic skull base surgery
- Facial Plastic & Reconstructive Surgery, Facial Cosmetic Surgery, and Trauma

As well, the teaching hospitals deliver general otolaryngologic care to the city of London and surrounding areas. This unique situation enables students to better appreciate the scope of the specialty.

More detailed information about our department can be found on the internet at: http://www.uwoent.ca/

Every attempt will be made to allow the student to critically evaluate Otolaryngology as a career choice and to objectively view the residency training program at the University of Western Ontario. As such, the student will be fully integrated into the clinical environment and will have the opportunity to be a vital part of the surgical team. Time will be spent in the operating rooms, providing inpatient care, and participating in outpatient clinics. It will be expected that students participate in the call schedule and have the opportunity to evaluate emergency patients with resident/consultant supervision. Students are also expected to attend weekly Grand Rounds and monthly Journal Club.

Optional academic endeavours such as formal round presentations will be welcomed if schedules permit during the student's tenure. As well, students wishing to participate in clinical projects such as case presentations or retrospective reviews are encouraged to discuss their interest with residents and consultants.

Students will be contacted by email by Ms. Edwards a week before their elective and will be given the opportunity to help structure their schedule based on their individual interests.

C) Objectives

Otolaryngology is a surgical subspecialty with tremendous breadth and depth. Problems that affect structures of the head and neck significantly impact patients' function and quality of life (e.g., smell, hearing, breathing, swallowing, phonation). Our patient population ranges from neonates to the elderly. Clinical problems can be life-threatening (e.g., airway obstruction), urgent (e.g., head and neck cancer), and elective (e.g., cosmetic surgery). Our surgical procedures are diverse, ranging from intricate (e.g., paediatric airway surgery), technologically and anatomically complex (e.g., endoscopic sinus surgery with 3D-image guidance), really small (operating on the smallest bones of the body in the ear), really large (head and neck cancer resection with free flap reconstruction), creative (cosmetic surgery), and most of all….rewarding.

1.0 Medical Expert / Decision Maker

A. Skills

a) Ear
   i. Otologic history taking for common otologic problems:
      - Ear discharge
      - Otalgia
      - Infant hearing loss
      - Adult hearing loss
      - Dizziness
      - Facial weakness
   ii. Removal of ear wax
   iii. Otoscopy including pneumatic otoscopy
   iv. Tuning fork tests
   v. Interpretation of basic audiogram (hearing test)
   vi. Otoneurologic examination
      - Dix-Hallpike maneuver and the Particle Repositioning Maneuver
      - Cranial nerve examination
      - Cerebellar function

b) Nose and Paranasal Sinus
   i. History taking for common nasal problems:
      - Nasal obstruction
      - Nasal discharge
      - Facial pain
      - Anosmia
      - Epistaxis
   ii. Anterior rhinoscopy
   iii. Exposure to endoscopic examination of the full nasal cavity
   iv. Identification of normal structures within the nasal cavity
   v. Examination of the external nasal structures
   vi. General appreciation of plain films and CT scans of the nose and paranasal sinuses

c) Oral Cavity
    i. History taking for common oral cavity problems:
        - Sore mouth
        - Drooling
        - Salivary gland problems
        - Lip lesion
        - Tongue mass
    ii. Examination of the oral cavity including bimanual palpitation
    iii. Identification of salivary duct openings
    iv. Assessment of the oropharynx
d) Pharynx and Larynx
    i. History taking for common throat problems:
        - Sore throat
        - Foreign body sensation (globus)
        - Hoarseness
        - Sleep apnea
        - Stridor
    ii. Examination of the pharynx and larynx via mirror as well as an exposure to endoscopic examination of these anatomical areas
e) Neck
    i. History taking for common neck/visceral problems:
        - Thyroid nodule
        - Neck mass
    ii. Examination of the head and neck and its viscera
    iii. Appreciation of normal anatomy
        - Identification of the triangles in the neck
        - Identification of surface anatomy of normal anatomical structures, such as the carotid artery, thyroid gland, salivary glands, laryngeal structures
    iv. Observe the technique of fine needle aspiration

B. Knowledge

a) Ear Infection
    i. Demonstrate knowledge of the differential diagnosis of otorrhea and otalgia (local and referred) with an emphasis on external otitis, acute and chronic otitis media and their complications
b) Hearing Loss / Tinnitus
    i. Show an understanding of the need for the early diagnosis of hearing loss in infants including the need for a high "index of suspicion" (early warning signs) and the need for early audiologic testing and habilitation. The protocol followed by the *Universal Infant Hearing Program* should be known to you.
    ii. Describe the common causes of conductive hearing loss (external canal to the staples footplate)
    iii. Develop a differential diagnosis of sensory neural hearing loss (sudden *vs* gradual), appreciate the need for preventative measures in the workplace (noise reduction) and the devices available for rehabilitation (hearing aids and assistive devices)
    iv. Provide a working knowledge of tinnitus (subjective and objective)
c) Vertigo
    i. Differentiate vestibular vertigo from other causes of imbalance vertigo
    ii. Distinguish peripheral *vs* central vertigo
    iii. Provide a DDx of vertigo with and without hearing loss
    iv. Diagnose benign paroxysmal vertigo based on the history and clinical findings

d) Facial Paralysis
    i. Differentiate peripheral *vs* central paralysis and show an understanding of peripheral facial paralysis from an ENT-HNS perspective (i.e., intracranial, temporal bone, extratemporal)
e) Nose and Paranasal Sinuses
    i. Describe the functions of the nose (airway, mucocillary system, warming and humidification)
    ii. Demonstrate knowledge of the DDx of nasal obstruction with and without rhinitis
    iii. Recognize, investigate, and treat acute sinusitis
    iv. Formulate an approach to a patient with acute epistaxis (anterior and posterior)
f) Pharynx
    i. Demonstrate an understanding of obstructive sleep apnea. Who is at risk? What are the symptoms and long term complications?
    ii. Describe the mechanisms that are in place that allow one to maintain and protect the lower respiratory tract (i.e., DDx of aspiration)
    iii. Describe the signs and symptoms that might arise due to the presence of an infection/mass lesion (structural abnormality or loss of function, e.g., carcinoma of the tongue base) in this area (i.e., the effect on swallowing, breathing, phonation, pain, foreign body sensation, odynophagia, referred otalgia)
g) Larynx and Upper Airway
    i. Describe the supraglottic region and understand that it extends up into the pharyngeal airway and thus pathology in this region presents in a way similar to other pharyngeal airway pathologies
    ii. Formulate a DDx for dysphonia (hoarseness)
    iii. Demonstrate knowledge of the different types of stridor that present from the different sites of the upper airway
    iv. Describe the acute management of upper airway obstruction using positioning, artificial airways, and tracheotomy
h) Oral Cavity and Pharynx
    i. Outline the three phases of swallowing with emphasis on the oro-pharyngeal phases for ENT purposes
    ii. Demonstrate a basic knowledge of dental abnormalities as they might be included as the primary cause of oral symptoms and signs
    iii. Have knowledge of the DDx of mucosal lesions in the oral cavity
    iv. Demonstrate knowledge of the differential diagnosis of dysphagia
    v. Show an understanding of the lymphatic drainage of the oropharynx as a route of metastatic spread
i) Salivary Glands
    i. Demonstrate knowledge of the anatomy of the three major salivary glands
    ii. Discuss the DDx of salivary gland swelling (single gland, multiple glands)
j) Congenital Masses
    i. The DDx of congenital lesions found in the neck (midline and lateral), and have knowledge of the pertinent embryology
k) Lymphatics
    i. The anatomy (nomenclature) of the regional lymph nodes
    ii. The importance of the regional lymphatic drainage and its relevance in the DDx of primary lymph node pathology
    iii. Other pathologic entities that might occupy a lymph node
    iv. The importance of a thorough head and neck functional inquiry in investigating a possible metastatic neck mass from a primary in the upper aerodigestive tract (the functional inquiry often leads to the primary site of pathology)
    v. Risk factors in developing H&N cancer malignancies

vi. General principles in the treatment of H&N squamous cell malignancies and the multidisciplinary nature of H&N cancer treatment
vii. Quality of life issues inherent in choosing or not choosing different treatment modalities

l) Thyroid Viscera
i. The anatomy of the thyroid gland
ii. DDx of a thyroid mass (functional *vs* neoplastic) for ENT emphasis on neoplastic thyroid abnormalities

D) Evaluation

During the student's elective period, the consultants and residents with whom the student has spent time will complete evaluations. All evaluations are reviewed and compiled by the Undergraduate Director and a report is made available to the student at the end of the rotation on One45.

An outgoing interview will take place with the ENT On-site Chief of the hospital in which the student spends his last week of elective in order to answer further questions the student may have, and to provide the student with an overall assessment from the department.

E) Type of Clinical Experience

In patient	( )
Out Patient	( )
Both	(x)

F) Night and Weekend Call

Yes	(x)

G) Evaluation Procedure

Written Exam	( )
Oral Exam	( )
Informal Clin. Eval.	(x)

H) Number of Students Accepted

Each block:	**2**

PAEDIATRICS & PAEDIATRIC CLINICAL GENETICS

COORDINATOR: Rachel Huys
Phone: 519-685-8500 x52328
Address: Room B1-431, Children's Hospital
Email: rachel.huys@lhsc.on.ca

A) **General Description**

Clinical Paediatrics – Office, Emergency, Newborn & Ward:

Clinical paediatric electives are located in London at Children's Hospital. The nature and responsibilities of the rotation depend upon the elective chosen. Students will work closely with paediatricians and may be involved in one or more of the following activities.

- caring for patients in the outpatient subspecialty and general paediatric clinics
- caring for patients in the Emergency Department
- caring for patients on the inpatient unit in the form on consultations or on-going care
- being on-call
- attending rounds
- presenting rounds

Neonatology	**- 1 student per block**	***- 4***
Paediatric Emergency Medicine	**- 1 student per block**	***- 2***
Clinical Pharmacology	**- 1 student per block**	***- 4***
Paediatric Cardiology	**- 1 student per block**	***- 4***
Paediatric Critical Care	**- 1 student per block**	***- 2***
Paediatric Endocrinology	**- 1 student per block**	***- 4***
Paediatric Gastroenterology	**- 1 student per block**	***- 4***
Paediatric Clinical Genetics	**- 1 student per block**	***- 4***
Paediatric Haematology/Oncology	**- 1 student per block**	***- 4***
Paediatric Nephrology	**- 1 student per block**	***- 2***
Paediatric Neurology	**- 1 student per block**	***- 2***

NOTE: The - 4 signifies that 4-week electives ONLY can be chosen.

* During the block in Paediatric Emergency, students will be expected to work rotating shifts that will include Saturday and Sunday. Students are expected to keep their weekend(s) open.

B) **GENERAL LEARNING OBJECTIVES**

1. To put into practice and build upon the clinical skills acquired during the paediatric clerkship.

2. To expand upon knowledge of paediatrics and paediatric subspecialties through interaction with medical staff, residents, interns and reading, stimulated by patient exposure in paediatric offices, the hospital Emergency Department and the wards.

3. To develop problem solving skills by first contact with a spectrum of more common paediatric problems.

The student is able to:

- Demonstrate proficiency in acquiring a complete and accurate paediatric history with consideration of the child's age, development, and the family's cultural, socioeconomic and educational background.
- Describe differences between the medical management of paediatric patients versus adult patients.
- Recognize an acutely ill child and describe an initial management plan.
- Demonstrate an approach (the generation of a differential diagnoses, appropriate initial diagnostic investigations, and management plan) to the following core clinical paediatric presentations:

** Listed under each core clinical paediatric presentation are key topics/conditions. The key conditions are neither a differential diagnosis nor a scheme (approach to the clinical presentation). The highlighted conditions are those that may be unique to paediatrics, that are essential, or that are common. Some conditions could have different presentations, but for simplicity are listed under one core presentations. **

Paediatric Health Supervision

- Infant / child nutrition
- Colic
- Infant sleeping
- Injury prevention
- Healthy active lifestyle
- Immunizations
- Normal development

Newborn

- Prematurity
- Transition from intrauterine to extrauterine environment with respect to:
  - Temperature regulation
  - Cardiac / respiratory physiology
  - Glucose regulation
  - Initiation of feeding

Neonatal Jaundice

- Biliary atresia
- TORCH infections
- Neonatal hepatitis
- Sepsis
- Breast feeding jaundice
- Breast milk jaundice
- Physiologic jaundice
- Birth trauma/bruising
- Isoimmune/hemolysis
- Kernicterus

Fever

- Kawasaki Disease
- Meningitis
- Sepsis
- Occult bacteremia

Dehydration

- Mild / moderate and severe dehydration
- Diabetes / Diabetic ketoacidosis

Respiratory Distress/Cough

- Pneumonia
- Bronchiolitis
- Asthma
- Cystic fibrosis
- Pertussis
- Croup
- Foreign body
- Epiglottitis
- Congestive heart failure
- Anaphylaxis

Developmental & Behavioral Problems

- Autism / Pervasive developmental delay
- Attention deficit hyperactivity disorder
- Isolated and global developmental delay
- Down Syndrome
- Fetal alcohol syndrome
- Common behavioral challenges (temper tantrums, sleep problems)

Growth Problems

- Failure to thrive
- Hypothyroidism
- Precocious and delayed puberty
- Short and tall stature
- Obesity
- Anorexia
- Turner's syndrome

Inadequately Explained Injury (child abuse)

- Physical, sexual, neglect and domestic violence

Abdominal Pain

- Appendicitis
- Intussception
- Constipation
- Recurrent abdominal pain of childhood

Vomiting

- Viral gastroenteritis
- Pyloric stenosis
- Malrotation / volvulus
- Gastroesophageal reflux disease

Diarrhea

- Viral and bacterial enteritis
- Inflammatory bowel disease
- Cow's milk protein intolerance
- Toddler's diarrhea

Altered Level of Consciousness - Seizure/Paroxysmal Event

- Epilepsy
- Febrile seizures
- Syncope
- Poisoning / intoxication
- Head injury / concussion
- Hypoglycemia
- ALTE
- Breath holding spell

Headache

- Migraine
- Brain tumor
- Increased ICP

Murmur and/or Cyanosis

- Innocent murmurs (Stills and venous hum)
- VSD
- Coarctation of the aorta
- ASD
- Tetralogy of Fallot
- Transposition of the great arteries

Rash

- Cellulitis
- Varicella
- Atopic dermatitis
- Diaper dermatitis
- Viral exanthems
- Scarlet fever
- Scabies
- Acne
- Impetigo
- Seborrhea
- Urticaria

Bruising & Bleeding

- Leukemia
- Pancytopenia
- Hemophilia
- Von Willebrand disease
- Idiopathic thrombocytopenic purpura

Pallor (anemia)

- Iron deficiency
- Anemia of chronic disease
- Hemolysis
- Inherited hemoglobinopathies (sickle cell anemia and thalassemia)

Lymphadenopathy

- Reactive / benign
- Cervical adentitis
- Malignancy (leukemia / lymphoma)
- Mononucleosis

Limp/Extremity Pain

- Osteomyelitis
- Septic arthritis
- Transient synovitis
- Developmental dysplasia of the hip
- Legg Calve Perthes disease
- Slipped capital femoral epiphysis

Urinary Complaints (polyuria/frequency/dysuria/hematuria)

- Diabetes / diabetic ketoacidosis
- Urinary tract infection
- Enuresis
- Post infectious glomreulonephritis
- Henoch-Schonlein purpura

Edema

- Nephrotic syndrome – minimal change disease

Sore Ear

- Otitis media and externa

Sore Throat/Sore Mouth

- Pharyngitis
- Peritonsillar and retropharyngeal abscess
- Thrush

Sore Eye/Red Eye

- Periorbital/orbital cellulitis
- Conjunctivitis

Demonstrate competence with the following paediatric physical examination skills in addition to general physical examination skills:

- Position and immobilize patient for certain physical exam skills
- Measure and interpret height, weight, head circumference (including plotting on growth curve and calculation of BMI)
- Measure and interpret vital signs

- Palpate for fontanelles and suture lines
- Perform red reflex and cover-uncover test
- Perform otoscopy
- Inspect for dysmorphic features
- Elicit primitive reflexes
- Inspect for and describe common newborn skin rashes
- Assess for features that distinguish innocent from organic murmurs
- Perform infant hip examination
- Assess the lumbosacral spine for abnormalities
- Assess for scoliosis
- Palpate femoral pulses
- Examine external genitalia
- Assess for sexual maturity rating (Tanner staging)

CARDIOLOGY OBJECTIVES

A. Knowledge

a) The student will be able to:
   i. Describe the presentation of congestive heart failure in the infant;
   ii. Provide a differential diagnosis of cyanosis in a newborn;
   iii. Describe an approach to paediatric chest pain.

B. Skills

1) The student will demonstrate competence in:
   i. Differentiation between innocent and organic murmurs;
   ii. Recognize signs of heart failure;
   iii. Demonstrate an approach to interpretation of an ECG in a child.

2) Take an appropriate history from a child and parent with cardiac symptoms.
3) Explain the nature of an innocent murmur to a patient's family/families.
4) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
5) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
6) Perform a physical examination without causing the patient embarrassment.
7) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
8) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
9) Recognize risk factors and be able to counsel patients on risk reduction.
10) List conditions requiring endocarditis precautions.
11) Appreciate impact of adolescent hypertension and obesity.
12) Identify the rights and legal responsibilities of physicians to patients and the community.
13) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
14) Apply the concept of cost-effectiveness to public health interventions.
15) Demonstrate skill in self-directed learning by:
    a. Recognizing the limitation of evidence in some areas of clinical decision making.
    b. Conduct internet or database searches to resolve clinical controversies.
    c. Ability to identify areas of deficiency in one's own knowledge and skills.

d. Ability to find appropriate educational resources.
e. Ability to evaluate personal learning progress.
f. Ability to use new knowledge in the care of patients.

16) Determine the validity and applicability of published data through critical appraisal.
17) The multi-disciplinary team in cardiology includes the following: Nurses, social workers, technologists, as well as cardiologists. The student will be able to:
18) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
19) Collaborate effectively with patients and families without having to take charge.
20) Demonstrate skill in finding common ground when differences of opinion exist.
21) Establish effective relationships with colleagues and other member of the health care team by:
    g. Considering their suggestions and criticisms.
    h. Tactful handling of differences of opinion.
22) Demonstrates the ability to place the needs of patients and families first.
23) Demonstrates honesty and trustworthiness in assessment, study and learning.
24) Demonstrates responsibility and respect.
25) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
26) Be willing to seek help, advice or consultation when needed.
27) Respond to personal and family needs and develop effective support systems.
28) Understand the role of the nurse practitioner in providing family-centred care.
29) Demonstrate rational use of cardiac investigations.
30) Understand prioritization of outpatient bookings.
31) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
32) Use the concepts of evidence-based medicine to guide patient care decisions.
33) Identify potential conflict between individual and population interests and seek advice from others.
34) Assess the effectiveness of practice and engage in continuous quality improvement.

CLINICAL PHARMACOLOGY OBJECTIVES

1) To appreciate the importance of developmental pharmacology in planning therapy for children.
2) To have an approach to developing a therapeutic plan for a child.
3) To have an approach to the management of suspected adverse drug reactions in children.
4) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
5) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
6) Perform a physical examination without causing the patient embarrassment.
7) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
8) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
9) Recognize risk factors and be able to counsel patients on risk reduction.
10) Identify the rights and legal responsibilities of physicians to patients and the community.
11) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
12) Apply the concept of cost-effectiveness to public health interventions.
13) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.

14) Determine the validity and applicability of published data through critical appraisal.
15) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
16) Collaborate effectively with patients and families without having to take charge.
17) Demonstrate skill in finding common ground when differences of opinion exist.
18) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
19) Demonstrates the ability to place the needs of patients and families first.
20) Demonstrates honesty and trustworthiness in assessment, study and learning.
21) Demonstrates responsibility and respect.
22) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
23) Be willing to seek help, advice or consultation when needed.
24) Respond to personal and family needs and develop effective support systems
25) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
26) Use the concepts of evidence-based medicine to guide patient care decisions.
27) Identify potential conflict between individual and population interests and seek advice from others.
28) Assess the effectiveness of practice and engage in continuous quality improvement.

CRITICAL CARE OBJECTIVES

1) Correctly interpret a blood gas.
2) Interpret a CXR and provide a differential diagnosis for the findings.
3) Describe the basic approach to the initial stabilization and management of a patient with increased intracranial pressure.
4) Define acute lung injury and demonstrate an understanding of some of the management strategies.
5) Demonstrate an understanding of the basic physiologic principles, differential diagnosis and initial management of shock.
6) Demonstrate an understanding of the principles of mechanical ventilation.
7) Explain the principles of infection control in the ICU setting and understand the role that resistant organisms play in the clinical course of critically ill children.
8) Describe the possible presentation of metabolic disorders in pediatric patients in the critical care setting.
9) Be able to list a differential diagnosis and initial management plan for a child with a suspected underlying metabolic disorder.
10) Demonstrate the ability to rapidly ascertain the clinical stability of the acutely ill child and to prioritize therapeutic interventions.
11) Demonstrate an appreciation of the patters of physiological dysfunction associated with multi-system failure.
12) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
13) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
14) Perform a physical examination without causing the patient embarrassment.
15) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
16) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
17) Recognize risk factors and be able to counsel patients on risk reduction.
18) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
19) Apply the concept of cost-effectiveness to public health interventions.

20) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
21) Determine the validity and applicability of published data through critical appraisal.
22) Is punctual in attending organized unit activities, e.g., hand-over rounds, journal club and teaching sessions.
23) In dress and behaviour to project a professional image.
24) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
25) Collaborate effectively with patients and families without having to take charge.
26) Demonstrate skill in finding common ground when differences of opinion exist.
27) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
28) Demonstrates the ability to place the needs of patients and families first.
29) Demonstrates honesty and trustworthiness in assessment, study and learning.
30) Demonstrates responsibility and respect.
31) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
32) Be willing to seek help, advice or consultation when needed.
33) Respond to personal and family needs and develop effective support systems.
34) Incorporate the concepts of evidence-based medicine to guide patient care decisions but recognize the limitations of this patter of practice.
35) Identify potential conflict between individual and population interests and seek advice from others.
36) Assess the effectiveness of practice and engage in continuous quality improvement.

ENDOCRINOLOGY OBJECTIVES

1) Physiology and pathophysiology of the hypothalamic-pituitary axis and endocrine glands.
2) Physiology of pancreatic ß-cell function and pathology leading to Type 1 diabetes.
3) Emergency management of DKA.
4) Pathophysiology and risk factors associated with Type 2 diabetes mellitus.
5) Normal growth patterns.
6) Assessment of benign *vs* pathologic short stature.
7) Understanding of routine indications for growth hormone therapy (GHD, Turner Syndrome).
8) Physiology of normal pubertal development.
9) Assessment of delayed or precocious puberty.
10) Performance of Tanner Staging.
11) Physiology and management of thyroid disorders.
12) Physiology and management of congenital adrenal hyperplasia.
13) Assessment for complications of obesity.
14) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
15) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
16) Perform a physical examination without causing the patient embarrassment.
17) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
18) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
19) Recognize risk factors and be able to counsel patients on risk reduction.

20) Identify the rights and legal responsibilities of physicians to patients and the community.
21) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
22) Apply the concept of cost-effectiveness to public health interventions.
23) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
24) Determine the validity and applicability of published data through critical appraisal.
25) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
26) Collaborate effectively with patients and families without having to take charge.
27) Demonstrate skill in finding common ground when differences of opinion exist.
28) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
29) Demonstrates the ability to place the needs of patients and families first.
30) Demonstrates honesty and trustworthiness in assessment, study and learning.
31) Demonstrates responsibility and respect.
32) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
33) Be willing to seek help, advice or consultation when needed.
34) Respond to personal and family needs and develop effective support systems
35) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
36) Use the concepts of evidence-based medicine to guide patient care decisions.
37) Identify potential conflict between individual and population interests and seek advice from others.
38) Assess the effectiveness of practice and engage in continuous quality improvement.

GASTROENTEROLOGY OBJECTIVES

1) Create a basic diagnostic and therapeutic plan for the following paediatric gastrointestinal symptoms:
    a. Dysphagia
    b. Abdominal pain
    c. Constipation
    d. Diarrhea
    e. Failure to thrive as it pertains to the GI tract
2) List common indications for endoscopic techniques in children and contrast these from the common indications in adults.
3) Assess the contribution of psychological factors to gastrointestinal symptoms and diseases in children.
4) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
5) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
6) Perform a physical examination without causing the patient embarrassment.
7) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
8) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
9) Recognize risk factors and be able to counsel patients on risk reduction.
10) Identify the rights and legal responsibilities of physicians to patients and the community.

11) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
12) Apply the concept of cost-effectiveness to public health interventions.
13) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
14) Determine the validity and applicability of published data through critical appraisal.
15) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
16) Collaborate effectively with patients and families without having to take charge.
17) Demonstrate skill in finding common ground when differences of opinion exist.
18) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
19) Demonstrates the ability to place the needs of patients and families first.
20) Demonstrates honesty and trustworthiness in assessment, study and learning.
21) Demonstrates responsibility and respect.
22) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
23) Be willing to seek help, advice or consultation when needed.
24) Respond to personal and family needs and develop effective support systems
25) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
26) Use the concepts of evidence-based medicine to guide patient care decisions.
27) Identify potential conflict between individual and population interests and seek advice from others.
28) Assess the effectiveness of practice and engage in continuous quality improvement.

HAEMATOLOGY/ONCOLOGY OBJECTIVES

A. Knowledge
    a. Demonstrate an understanding and be able to discuss the pathophysiology, differential diagnosis, investigation and management plan for the following conditions:
        1. Thrombocytopenia
        2. Anemia (especially iron deficiency and thalassemia)
        3. Acute Lymphoblastic Leukemia
        4. Mediastinal Mass
        5. Abdominal Mass
        6. Common bone tumors (osteosarcoma, ewing sarcoma)
        7. Bleeding Disorders (thrombocytopenia, hemophilia, Von Willebrand's disease)
    b. Demonstrate a basic understanding of the prognostic variables that distinguish between high risk and standard risk ALL
    c. Demonstrate a basic understanding of the common presenting symptoms and signs of a brain tumor
    d. To develop a basic understanding of the structure and function of the formed elements of blood and understanding of normal values with age.
    e. Demonstrate a basic understanding and approach to common hematologic and oncologic emergencies including tumor lysis syndrome, mediastinal mass, .fever and neutropenia, and transfusion reactions.
    f. To develop an understanding of the social, familial and personal effects of childhood cancer on the child an family

B. Skills
    a. Demonstrate an ability to perform an age-appropriate history and physical examination in the oncology patient.
    b. Demonstrate an approach to the interpretation of a CBC and differential, INR, and PTT.
    c. Demonstrate an understanding of the different diagnostic tests and procedures in pediatric hematology/oncology patients including bone marrow aspirates and biopsies as well as lumbar punctures.
    d. Lumbar puncture in child/adolescent

1) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
2) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
3) Perform a physical examination without causing the patient embarrassment.
4) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
5) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
6) Recognize risk factors and be able to counsel patients on risk reduction.
7) Identify the rights and legal responsibilities of physicians to patients and the community.
8) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
9) Apply the concept of cost-effectiveness to public health interventions.
10) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
11) Determine the validity and applicability of published data through critical appraisal.
12) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
13) Collaborate effectively with patients and families without having to take charge.
14) Demonstrate skill in finding common ground when differences of opinion exist.
15) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
16) Demonstrates the ability to place the needs of patients and families first.
17) Demonstrates honesty and trustworthiness in assessment, study and learning.
18) Demonstrates responsibility and respect.
19) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
20) Be willing to seek help, advice or consultation when needed.
21) Respond to personal and family needs and develop effective support systems
22) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
23) Use the concepts of evidence-based medicine to guide patient care decisions.
24) Identify potential conflict between individual and population interests and seek advice from others.
25) Assess the effectiveness of practice and engage in continuous quality improvement.

NEONATOLOGY OBJECTIVES

The elective student should be able to:

1) Correctly assign and interpret a newborn APGAR score.

2) Assess the need for and correctly apply bag-and-mask ventilation to a newborn.
3) Examine a newborn infant and identify problems related to the transition from intrauterine to extrauterine life including respiratory distress, cardiac, metabolic, and thermal stress.
4) Assess the risk for neonatal sepsis, evaluate and initiate therapy for neonatal sepsis.
5) Determine the growth parameters of a newborn infant.
6) Discuss the short and long-term risks associated for an infant who is small for gestational age (SGA) or large for gestational age (LGA).
7) Describe the presentation of common neonatal problems such as trisomy 21, common congenital anomalies, sepsis, hypoglycaemia, transient tachypnea of the newborn, meconium aspiration syndrome, neonatal abstinence syndrome.
8) Participate in rounds and ask questions appropriate for level of education.
9) Write progress notes on patients that communicate accurately the patient's condition and ongoing plans.
10) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
11) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
12) Perform a physical examination without causing the patient embarrassment.
13) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
14) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
15) Recognize risk factors and be able to counsel patients on risk reduction.
16) Identify modifiable risks for prematurity and other neonatal problems.
17) Participate in discharge planning meetings.
18) Develop appropriate follow-up plans with support of the health care team.
19) Apply knowledge of the determinants of health to the newborn population.
20) Identify the rights and legal responsibilities of physicians to patients and the community.
21) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
22) Apply the concept of cost-effectiveness to public health interventions.
23) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
24) Determine the validity and applicability of published data through critical appraisal.
25) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
26) Collaborate effectively with patients and families without having to take charge.
27) Demonstrate skill in finding common ground when differences of opinion exist.
28) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
29) Demonstrate the ability to place the needs of patients and families first.
30) Demonstrate honesty and trustworthiness in assessment, study and learning.
31) Demonstrate responsibility and respect.
32) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
33) Be willing to seek help, advice or consultation when needed.
34) Respond to personal and family needs and develop effective support systems
35) Discuss the impact of specialized neonatal care on newborn outcome.

36) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
37) Use the concepts of evidence-based medicine to guide patient care decisions.
38) Identify potential conflict between individual and population interests and seek advice from others.
39) Assess the effectiveness of practice and engage in continuous quality improvement.

NEPHROLOGY OBJECTIVES

A. Knowledge
    a) Demonstrate an understanding and be able to discuss the pathophysiology, differential diagnosis, investigation and management plan for the following conditions:
        1. Hydronephrosis
        2. Urinary tract infections
        3. Hematuria
        4. Proteinuria
        5. Hypertension
        6. Acute kidney injury
        7. Chronic kidney disease ***
        8. Renal calculi ***
    b) Demonstrate a basic understanding of the theory and indications for renal replacement therapy including transplantation. ***
    c) Describe how chronic illness can influence a child's growth and development, educational achievement, and psychosocial functioning.
    d) Have an appreciation of the impact that chronic illness has on the family's emotional, economic and psychosocial functioning.
B. Skills
    a) Demonstrate an ability to perform an age-appropriate history and physical examination in the nephrology patient.
    b) Demonstrate an approach to the interpretation of nephrology lab tests including urine microscopy.
    c) Demonstrate an understanding of the different diagnostic tests and procedures in pediatric nephrology including renal U/S, VCUG, renal scan (static and dynamic), renal angiography and renal biopsy.

*** 4 week elective only.

1) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
2) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
3) Perform a physical examination without causing the patient embarrassment.
4) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
5) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
6) Recognize risk factors and be able to counsel patients on risk reduction.
7) Identify the rights and legal responsibilities of physicians to patients and the community.
8) Describe the determinants of health and apply them appropriately to enhance individual and community well being.

9) Apply the concept of cost-effectiveness to public health interventions.
10) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
11) Determine the validity and applicability of published data through critical appraisal.
12) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
13) Collaborate effectively with patients and families without having to take charge.
14) Demonstrate skill in finding common ground when differences of opinion exist.
15) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
16) Demonstrates the ability to place the needs of patients and families first.
17) Demonstrates honesty and trustworthiness in assessment, study and learning.
18) Demonstrates responsibility and respect.
19) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
20) Be willing to seek help, advice or consultation when needed.
21) Respond to personal and family needs and develop effective support systems
22) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
23) Use the concepts of evidence-based medicine to guide patient care decisions.
24) Identify potential conflict between individual and population interests and seek advice from others.
25) Assess the effectiveness of practice and engage in continuous quality improvement.

NEUROLOGY OBJECTIVES

1) Conduct a history/ interview of a presenting problem within the context of pediatric neurology, addressing issues specific to pediatric neurology.
2) Conduct an examination of the nervous system in pediatric patients of various ages.
3) To understand and incorporate the concept of neuro-localization in problem formulation and determining a differential diagnosis.
4) Demonstrate knowledge of the presentation and distinguishing clinical features of common pediatric paroxysmal disorders such as epilepsy, headaches, syncope and tics.
5) Demonstrate knowledge of typical clinical features of common pediatric neurology chronic conditions such as cerebral palsy, epilepsy, acquired brain injury, muscular dystrophy and developmental delay.
6) Become familiar with an approach to evaluate a CT scan of the brain.
7) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
8) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
9) Perform a physical examination without causing the patient embarrassment.
10) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
11) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
12) Recognize risk factors and be able to counsel patients on risk reduction.
13) Identify the rights and legal responsibilities of physicians to patients and the community.

14) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
15) Apply the concept of cost-effectiveness to public health interventions.
16) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
17) Determine the validity and applicability of published data through critical appraisal.
18) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
19) Collaborate effectively with patients and families without having to take charge.
20) Demonstrate skill in finding common ground when differences of opinion exist.
21) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
22) Demonstrates the ability to place the needs of patients and families first.
23) Demonstrates honesty and trustworthiness in assessment, study and learning.
24) Demonstrates responsibility and respect.
25) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
26) Be willing to seek help, advice or consultation when needed.
27) Respond to personal and family needs and develop effective support systems
28) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
29) Use the concepts of evidence-based medicine to guide patient care decisions.
30) Identify potential conflict between individual and population interests and seek advice from others.
31) Assess the effectiveness of practice and engage in continuous quality improvement.

C) **Type of Clinical Experience**

In Patient	( )	Oral Exam
( )		
Both	(xx)	

D) **Night and Weekend Call**

Yes	(xx)
No	( )

E) **Evaluation Procedure**

Written Exam	( )
Out Patient	( )
Informal Clin. Evaluation	(xx)

F) **Number of Students Accepted**

One to two students each month depending upon the duration of the chosen clinical elective, September through December.

G) **Other Comments, Regulations or Expectations**

For information on accommodations, regulations and expectations, please contact the supervisor for the selected block.

Supervisors:

Paediatric Emergency Medicine	- Dr. K. Helleman
Neonatology	- Dr. D. Yuen
Clinical Pharmacology	- Dr. M.J. Rieder
Paediatric Cardiology	- Dr. H. Rosenberg
Paediatric Critical Care	- Dr. R. Singh
Paediatric Endocrinology	- Dr. R. Stein
Paediatric Gastronenterology	- Dr. J. Howard
Paediatric Clinical Genetics	- Dr. S. Goobie
Paediatric Haemotology/Oncology	- Dr. S. Zelcer
Paediatric Nephrology	- Dr. J. Grimmer
Paediatric Neurology	- Dr. C. Campbell

DEPARTMENT: **PAEDIATRICS - CLINICAL GENETICS ELECTIVE**
COORDINATOR: Dr. V. Siu, Dr. J. Jung, Dr. C. Prasad & Dr. S. Goobie
OFFICE LOCATION: Children's Hospital of Western Ontario
PHONE: 519-685-8140

DESCRIPTION

A) **General Description**

Four-week intensive experience in medical genetics with emphasis on participation in all the relevant clinical activities of one or more members of the UWO Regional Medical Genetics Centre. These will include participation in all genetics, prenatal and metabolic diagnosis clinics, clinic conferences, rounds and ward consultations. In addition to the clinical experience, provisions can also be made for laboratory experience, (eg. cytogenetics) if the student wishes. The student will have available library and reference resources in medical genetics as well as audiovisual learning aids. Students should also attend at least 1-2 clinics with genetic counsellors.

B) **Objectives**

1. To allow a fourth year student an opportunity for clinical exposure to the specialty of medical genetics not provided in the medical curriculum at the University of Western Ontario. This should be particularly valuable for students anticipating careers in Family Medicine, Paediatrics or Obstetrics, Internal Medicine and Medical Genetics.

2. For a student considering a career in medical genetics, this experience will acquaint him/her with this relatively new specialty and facilitate personal decisions about directions or postgraduate medical education and career opportunities.

3. The trainee will learn to draw a pedigree, obtain family history, be familiar with basic clinical dysmorphology skills, research the problems, differential diagnosis and management issues.

1) Construct a three generation pedigree.
2) Obtain a medical history with emphasis on documentation of information relevant to the presenting problem, including symptoms suggestive of a metabolic or neurodegenerative disorder.
3) Conduct a detailed physical examination with attention to accurate physical measurements and documentation of dysmorphic features.
4) Utilize web-based resources (e.g., PubMed, OMIM and Genetests) to access current information about known genetic disorders, to generate a differential diagnosis, to determine availability of genetic testing, and to contact research laboratories.
5) Recognize the characteristic features associated with common genetic disorders.
6) Explain the significance of a positive newborn screen, integrated prenatal screen, or antenatal ultrasound finding.
7) Apply knowledge of various inheritance patterns in counseling patients about recurrence risk.
8) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
9) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
10) Perform a physical examination without causing the patient embarrassment.
11) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.

12) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
13) Recognize risk factors and be able to counsel patients on risk reduction.
14) Identify the rights and legal responsibilities of physicians to patients and the community.
15) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
16) Apply the concept of cost-effectiveness to public health interventions.
17) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
18) Determine the validity and applicability of published data through critical appraisal.
19) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
20) Collaborate effectively with patients and families without having to take charge.
21) Demonstrate skill in finding common ground when differences of opinion exist.
22) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
23) Demonstrates the ability to place the needs of patients and families first.
24) Demonstrates honesty and trustworthiness in assessment, study and learning.
25) Demonstrates responsibility and respect.
26) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
27) Be willing to seek help, advice or consultation when needed.
28) Respond to personal and family needs and develop effective support systems
29) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
30) Use the concepts of evidence-based medicine to guide patient care decisions.
31) Identify potential conflict between individual and population interests and seek advice from others.
32) Assess the effectiveness of practice and engage in continuous quality improvement.

C) **Type of Clinical Experience**

In Patient	( )
Out Patient	( )
Both	(xx)

D) **Night and Weekend Call**

Yes	( )
No	(xx)

Although there is no formal on-call commitment, we encourage students to participate in consults as well as follow up of in house patients.

E) **Evaluation Procedure**

Written Exam	( )
Oral Exam	( )
Informal Clin. Exam	(xx)

Also based on presentations (case presentations and subject review) made by the student.

F) **Number of Students Accepted**

One student each month, September through December.

PATHOLOGY

(LHSC, University Campus)

COORDINATOR: Dr. Helen Ettler, Supervisor Senior Medical Student Electives
Department of Pathology, LHSC, University Campus
685-8500 X36376
or
Dr. Keith Kwan, Supervisor Senior Medical Student Electives
Department of Pathology, LHSC, University Campus
685-8500 X36358
o**r**
Dr. Aaron Haig, Supervisor Senior Medical Student Electives
Department of Pathology, LHSC, University Campus
685-8500 X36365

ADMINISTRATOR: Cheryl Campbell, Administrative Assistant
Department of Pathology, Dental Sciences, Room 4044, UWO
cheryl.campbell@schulich.uwo.ca

PHONE: 519 661-2111 X86389

ELECTIVES IN PATHOLOGY ARE NOT PART OF THE LOTTERY. THE STUDENT MUST CONTACT CHERYL CAMPBELL

DESCRIPTION:

A) **General Description**

The Department of Pathology offers an option in Clinical Anatomical Pathology to 4th year medical students during all blocks (September-December) at LHSC - University Campus. The student may initially observe and later participate in the routine activities of the Clinical Department of Pathology, including participation in autopsies and examination of gross and microscopic specimens. The student will be assigned to a staff pathologist for direction and supervision. The supervisor will negotiate with the student the terminal objectives of the rotation and the student=s learning goals.

An elective in Clinical Pathology is usually favourably seen by Program Directors of various medical and surgical disciplines.

Interested students should contact Dr. Ettler, Department of Pathology for assistance in selecting an appropriate activity.

B) **Learning Objectives**

1) Learn to use light microscope.
2) Start to acquire familiarity with normal histology and basic histopathological features.
3) Observe and assist pathologist and/or resident with surgical dissection.
4) Begin to learn methods of tissue sampling for histology.
5) Examine slides for selected routine cases and review cases with residents and/or pathologist.
6) Observe the technique and approach to frozen section diagnosis.
7) Attend autopsies; observe and assist pathologist and/or resident with dissection.
8) Be able to recognize abnormal gross autopsy findings and to correlate with pathophysiology and cause of death.

9) Learn how to submit specimens properly to pathology.
10) Learn what constitutes valid consent for autopsy.
11) Be able to review a patient chart and present a coherent summary prior to starting an autopsy.
12) Understand scenarios where the coroner may need to be contacted.
13) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients and pathologists
14) Identify the rights and legal responsibilities of physicians to patients and the community.
15) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
16) Understand the specialist's role in representing the patient's best interests with respect to disease prevention and advocating for socio-economic factors to improve health.
17) Understand the specialist's role in community intervention with regard to disease prevention.
18) Demonstrate skill in self-directed learning by:
    i. Ability to identify areas of deficiency in one's own knowledge and skills.
    ii. Ability to find appropriate educational resources.
    iii. Ability to evaluate personal learning progress.
    iv. Ability to use new knowledge in the care of patients.
19) Determine the validity and applicability of published data through critical appraisal.
20) Begin reading a standard basic pathology textbook, e.g., *Robbin's Pathologic Basis of Disease*.
21) Read around autopsy and surgical cases.
22) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
23) Demonstrate skill in finding common ground when differences of opinion exist.
24) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
25) Demonstrates honesty and trustworthiness in assessment, study and learning.
26) Demonstrates responsibility and respect.
27) Be willing to seek help, advice or consultation when needed.
28) Respond to personal and family needs and develop effective support systems.
29) Understand the role of the anatomical pathologist as a member of the health care team, providing timely, high quality service to patients and clinicians.
30) Use the concepts of evidence-based medicine to guide patient care decisions.
31) Identify potential conflict between individual and population interests and seek advice from others.
32) Assess the effectiveness of practice and engage in continuous quality improvement.

C) **Requirements**

You must be N95 Mask Test Fitted **prior to your elective**, this is mandatory for the autopsy suite. If for some reason you have not been previously fitted, please contact Occupational Health and Safety at LHSC (Ext. 33201) or drop in for a calendar of fitting dates to: Room B3-109, 3rd Floor, LHSC-UH.

D) **Type of Clinical Experience**

In Patient	( )
Out Patient	( )
Both	(x)

E) **Night and Weekend Call**

Not necessary but available

F) **Evaluation Procedure**

Written Exam	( )
Oral Exam	( )
Informal Clinical Exam	( )
Formative Evaluation	(x)

G) **Number of Students Accepted**

Subject to space constraints. Students will need to contact Cheryl Campbell directly to check on availability of space and to arrange elective ***(not in lottery).***

PHYSICAL MEDICINE AND REHABILITATION

COORDINATOR: Dr. Michael Payne
OFFICE LOCATION: Parkwood Hospital
ADMINISTRATOR: Catherine Nabudere
PHONE: 519 685-4292, X42950
FAX: 519 685-4098

THERE IS A MAXIMUM OF ONE TWO-WEEK ELECTIVE PER STUDENT unless you are a physiatry keener then let us know and you can stay longer

DESCRIPTION

A. General Description

1. Exposure to rehabilitation concepts and experience in musculoskeletal and neuromuscular disorders. The in-patient services (stroke, head injury, spinal cord injury, orthopaedic, amputee) to strengthen and provide skills to assess disability across a broad spectrum of diseases including: hemiplegia, cognitive dysfunction paraplegia, tetraplegia, amputated limbs, chronic pain, brain injury.

2. **Programs**
   2.1
   Parkwood Hospital

3. **Out Patient Clinics**
   Offers exposure to upper and lower extremity impairments, orthotics, amputees, general rehabilitation, neuromuscular impairments, sport medicine, occupational medicine, electrodiagnostic medicine, spinal cord injury, traumatic brain injury and stroke.

4. **In-Patient Services**
   Multi-disciplinary and inter-disciplinary rehabilitation teams in the assessment and treatment of stroke, neuro-locomotor, amputee, traumatic brain injury, spinal cord injury and orthopaedic rehab.

B. **Objectives**

1) Perform a screening neuromusculoskeletal examination as part of a general physical examination, when appropriate.
2) Understand concepts of impairment, disability, and handicap and be able to apply them.
3) Perform a detailed and organized musculoskeletal examination, including muscle strength testing, active and passive range of movement testing, and gait analysis, when needed.
4) Provide an effective differential diagnosis when presented with a patient with back pain, neck pain, extremity regional pain, hand numbness, localized weakness, and localized tenderness.
5) Recommend pertinent modalities and exercises.
6) Refer for an electrodiagnostic study to physiotherapy, occupational therapy, speech-language pathology, social services, psychology, vocational assessment, or pastoral care, when appropriate.
7) Refer a patient to a physiatrist, if appropriate, using a useful referral note.
8) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
9) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
10) Perform a physical examination without causing the patient embarrassment.

11) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
12) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
13) Recognize risk factors and be able to counsel patients on risk reduction.
14) Identify the rights and legal responsibilities of physicians to patients and the community.
15) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
16) Apply the concept of cost-effectiveness to public health interventions.
17) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
18) Determine the validity and applicability of published data through critical appraisal.
19) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
20) Collaborate effectively with patients and families without having to take charge.
21) Demonstrate skill in finding common ground when differences of opinion exist.
22) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
23) Demonstrates the ability to place the needs of patients and families first.
24) Demonstrates honesty and trustworthiness in assessment, study and learning.
25) Demonstrates responsibility and respect.
26) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
27) Be willing to seek help, advice or consultation when needed.
28) Respond to personal and family needs and develop effective support systems
29) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
30) Use the concepts of evidence-based medicine to guide patient care decisions.
31) Identify potential conflict between individual and population interests and seek advice from others.
32) Assess the effectiveness of practice and engage in continuous quality improvement.

C. Type of Clinical Experience
In-patient and Out-patient.

D. Night and Weekend Call
Yes ( ) No (xx)

E. Evaluation Procedure
Written and Informal

F. Number of Students Accepted
Each Block: 2

G. <u>Other Comments, Regulations, or Expectations</u>
Students will be responsible for at least one presentation of a case illustrating a topic. Students are reminded that a prize of $300 and a book (The T.H. Coffey Memorial Prize) are available for presentations and essays that are submitted.

PSYCHIATRY

COORDINATOR: DR. CARLA GARCIA Email: Carla.Garcia@lhsc.on.ca
ADMINISTRATOR: Melanie Vandenborre Email: ugepsychiatry@lhsc.on.ca
OFFICE LOCATION: LHSC – Victoria Hospital
Room B8-130
Phone: 519-685-8500 x 77781
FAX: 519-667-6564

YOU MAY TAKE TWO or FOUR WEEK ELECTIVES IN PSYCHIATRY

A. GENERAL DESCRIPTION

Clinical electives can be arranged for students in most areas of psychiatry:

- Child & Adolescent
- General Adult
- Geriatric
- Psychosis
- Mood & Anxiety Disorders
- Consultation-Liaison
- Addictions
- Forensics

Locations include London Health Sciences Centre, Children's Hospital, CPRI (Child and Parent Resource Institute), Regional Mental Health Care (London or St. Thomas campus), or other institutions associated with the University of Western Ontario (eg. Sarnia General Hospital and Chatham-Kent Health Alliance).

B. LEARNING OBJECTIVES

Psychiatry is a broad based specialty and so the learning objectives for an elective will depend on the orientation of the staff person and team with whom the student is involved. For example, involvement on a general inpatient ward, attachment to an early intervention program for psychosis, participation in a consultation-liaison service, or work with someone specializing in neuropsychiatry constitute four very different learning experiences (and these are only four of many different possibilities).

1) Demonstrate knowledge regarding the proposed etiology, clinical features, differential diagnosis and various treatment modalities for the following adult and child/adolescent psychiatric conditions:
    a. **Psychotic Disorders**: Schizophrenia, Schizophreniform Disorder, Schizoaffective Disorder, Drug-Induced Psychotic Disorder
    b. **Mood Disorders**: Major Depressive Disorder, Bipolar Disorder
    c. **Anxiety Disorder:** Generalized Anxiety Disorder, Obsessive-Compulsive Disorder,
    d. **Substance Use Disorders:** Substance Abuse, Substance Dependence, Intoxication and Withdrawal Syndromes
    e. Personality Disorders
    f. **Eating Disorders, Psychosomatic Disorders**.
    g. **Child/Adolescent Psychiatric Disorders:** ADHD, Anxiety and Mood Disorders. Developmental Disorders
2) Complete a basic psychiatric interview and mental status examination.
3) Learn effective preventive and therapeutic interventions in psychiatry.
4) Learn the ethical, legal, and professional aspects of psychiatric practice that are of particular relevance to the specialty.

5) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
6) Develop relationships with the patient characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
7) Perform a physical examination without causing the patient embarrassment.
8) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
9) Write progress notes on patients that communicate accurately the patient's condition and treatment plan.
10) Demonstrate skill in communicating information with clear, concise explanations that are understandable to patient.
11) Recognize risk factors and be able to counsel the patient on risk reduction.
12) Identify the rights and legal responsibilities of physicians to the patient and the community.
13) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
14) Apply the concept of cost-effectiveness to public health interventions.
15) Perform competent psychiatric assessments that will:
16) Effectively identify and explore significant mental health issues in patient encounters.
17) Elicit and explore patient concerns to construct a history that is relevant and accurate.
18) Demonstrate an understanding of developmental issues in the life cycle and the importance of the interaction between patient and the patient's family.
19) Use a variety of interview techniques to elicit and explore patient concerns and to respond appropriately and empathically to significant cues from the patient to deliver compassionate and patient-centred care.
20) Elicit and understand the issues from a patient's history that are amenable to psychotherapeutic interventions.
21) Provide a clear and concise oral presentation of a patient's history and mental status examination.
22) Demonstrate effective clinical reasoning, interpreting biological, social and psychological data and integrating information to generate a differential diagnosis and management plan.
23) Conduct an assessment of risk of harm to the patient or others.
24) Employ the bio-psycho-social model in understanding a patient's unique circumstances and in developing a comprehensive treatment plan which will engender the
25) Ability to diagnose primary psychiatric disorders.
26) Ability to recognize psychiatric disorders that are secondary to medical illness, the result of treatment for medical illnesses, or due to substance misuse.
27) Ability to select medically appropriate investigations to distinguish primary from secondary psychiatric disorders, particularly the value of a thorough history and physical exam.
28) Ability to understand the rational use of psychotropic medication.
29) Ability to recognize and address the psychosocial factors related to psychiatric illness.
30) Ability to identify which types of psychotherapy are suitable for particular patient issues.
31) Ability to recognize the factors interfering with treatment adherence, including lifestyle choices, neglect of personal care, barriers to treatment, and side effects of psychotropic medications, as well as strategies aimed at improving compliance.
32) Ability to develop an approach to the immediate management of psychiatric emergencies, such as in the Emergency Department or in a crisis situation in inpatient or outpatient settings.
33) Understand the ethical, legal and professional aspects involved in psychiatric practice by learning
34) The Code of Ethics developed by the Canadian Medical Association and abiding by it.
35) The special aspects of the doctor-patient relationship that take place in psychiatry
36) How boundary crossings and violations can undermine professionalism in the delivery of psychiatric care.
37) To understand how personal biases can influence the provision of psychiatric care, and that the doctor-patient relationship is a dynamic one with reciprocal influences.

38) To use one's own emotional responses to more fully understand patients and to more appropriately provide psychiatric care.
39) The basics of the Mental Health Act, obtaining informed consent, and how to conduct various capacity assessments.
40) Demonstrate skill in self-directed learning by developing the
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
41) Determine the validity and applicability of published data through critical appraisal.
42) Demonstrate the ability to work effectively as a member of a multidisciplinary team, as participant or leader.
43) Collaborate effectively with the patient and the patient's family.
44) Demonstrate skill in finding common ground when differences of opinion exist.
45) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
46) Demonstrate the ability to place the needs of the patient and the patient's family first.
47) Demonstrate honesty and trustworthiness in assessment, study and learning.
48) Demonstrate responsibility and respect.
49) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
50) Be willing to seek help, advice or consultation when needed.
51) Respond to personal and family needs and develop effective support systems.
52) Assist the patient in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
53) Use the concepts of evidence-based medicine to guide patient care decisions.
54) Identify potential conflict between individual and population interests and seek advice from others.
55) Assess the effectiveness of practice and engage in continuous quality improvement

C. TYPE OF CLINICAL EXPERIENCE

Inpatient	( )
Outpatient	( )
Both	(X)

D. NIGHT AND WEEKEND CALL

Students are NOT required to participate in Call. Calls are available if requested.

E. EVALUATION PROCEDURE

The evaluation is based on the student's clinical performance during the rotation and during a structured clinical assessment. The Schulich School of Medicine and Dentistry Electives Assessment form must be completed with a summative evaluation being a pass.

F. NUMBER OF STUDENTS ACCEPTED : 6

G. ELECTIVES AVAILABLE

The Department of Psychiatry offers a range of services from child psychiatry through to geriatric psychiatry. It also encompasses many approaches to psychiatric problems including biological, psychotherapeutic and community orientations. Students will be expected to become fully integrated into their service for the duration of the clinical elective.

Once the student has been informed of his or her clinical elective period (after the results of the medical school lottery have been published), he or she should, as soon as possible, finalize arrangements for any electives in psychiatry. It is important that making arrangements for an elective setting, supervisor, etc., is not left until the last moment. Ms. Melanie Vandenborre and Dr. Garcia must be informed of all electives that are arranged. Students are encouraged to call Dr. Garcia to arrange an appointment to review their goals and objectives and appropriate placements.

SURGERY

COORDINATOR:	Liz Radford	Email: Liz.Radford@lhsc.on.ca
OFFICE LOCATION:	LHSC - VH	Phone: 519 685-8500 x75435

Introduction

Fourth year student clinical electives in the practice of surgery are offered at LHSC-University, LHSC-Victoria Hospital and St. Joseph's Health Care London for a period of **two to four weeks** and are designed to give the student exposure to clinical areas of his/her interest in any of the following surgical services: Cardiac Surgery, General Surgery, Orthopaedic Surgery, Paediatric General Surgery, Plastic & Reconstructive Surgery, Thoracic Surgery, Urology, and Vascular Surgery.

General Description

Students are integrated into the surgical team and assist in all aspects of patient care. Depending on the service, students will be expected to take part in ward rounds, clinics and observe and assist in operative procedures, as well students may be expected to attend resident teaching.

Surgery Objectives

a) For each of the clinical conditions listed below, the student will able to:
Describe the relevant aspects of the common surgical illnesses and clinical problems, listed below, according to the following headings:

i. Definition
ii. Epidemiology
iii. Causes, including a consideration of each of the following factors:
- biological
- psychological
- social

iv. Pathogenesis and pathophysiology
v. Clinical features and complications
vi. Investigations required to confirm a diagnosis
vii. Management, including:
- medical
- surgical
- involvement of allied health care professionals
- nutritional

viii. Prognosis

I. <u>General Surgery</u>
a. Anal disease and lower gastrointestinal bleeding
b. Upper gastrointestinal bleeding
c. Appendicitis
d. Inflammatory bowel disease
e. Biliary tract disorders of benign, malignant and congenital etiology
f. Pancreatic disorders of benign, malignant and congenital etiology
g. Acute abdominal pain and peritonitis
h. Bowel obstruction and abdominal wall hernia
i. Breast disease of benign and malignant etiology
j. Colorectal disorders of benign and malignant etiology

k. Disorders of the thyroid, parathyroid, and adrenal glands
l. Disorders of the spleen and liver and portal hypertension
m. Blunt and penetrating trauma.

II. Pediatric General Surgery
    a. gastrointestinal obstruction and developmental anomalies
    b. common abdominal wall, inguinal and scrotal disorders
    c. common pediatric tumours.

III. Plastic Surgery
    a. Common skin lesions, both benign and malignant
    b. Facial trauma
    c. Burns
    d. Hand injuries including infections, fractures and lacerations.

IV. Urology
    a. Genitourinary trauma
    b. Prostate disorders both benign and malignant
    c. Common congenital and developmental urologic disorders
    d. Urolithiasis
    e. Neurogenic bladder
    f. Urologic tumours including kidney, collecting system, bladder and scrotum

V. Neurosurgery
    a. Acute spinal cord injury
    b. Cerebral trauma and hemorrhage
    c. Neurologic tumours

VI. Orthopaedic Surgery
    a. Musculoskeletal infections and tumours
    b. Ligament Injuries and dislocations and musculoskeletal exam
    c. Fracture care
    d. Surgical principles of arthritis
    e. Orthopedic trauma
    f. Principles of pediatric orthopedics
    g. Disorders of the lumbo-sacral spine

VII. Thoracic Surgery
    a. Benign and malignant disorders of the stomach and esophagus
    b. Tumours, infections and common disorders of lung, mediastinum, and pleural space.

VIII. Cardiac Surgery
    a. Coronary artery disease
    b. Valvular heart disease .

IX. Vascular Surgery
    a. Cerebrovascular disease
    b. Aortic aneurysms
    c. Limb ischemia both acute and chronic
    d. Renal and mesenteric arterial occlusive disease.

X. Anesthesia
   a. Fluids, electrolytes, and acid-base management
   b. General anesthesia and monitoring
   c. Pre-anesthetic assessment and preparation
   d. Regional anesthesia including obstetrics and post-operative pain
   e. Respiratory failure and airway management.

XI. Peri-operative Care
   a. Surgical nutrition
   b. Shock and surgical infection
   c. Wound closure and healing
   d. Preparation for surgery
   e. Common post-operative problems.

b) Technical Skills

i. Surgical procedures that each student should become familiar with during a Surgical Clerkship rotation include:

- OR sterile technique
- Wound closure (simple)
- Suture removal
- N.G. tube
- I.V.
- Airway management and intubation
- Uretheral catheter
- Local anaesthesia*
- Casting (e.g., splinting, traction etc).

Type of Clinical Experience
Inpatient and Outpatient

Call Expectations
Night and weekend call will vary depending on the service.

Evaluation Procedure
This will be based on observation of the student's performance.

Other Comments, Regulations or Expectations
Choice of surgical subspecialty and hospital are subject to student quotas as shown below. Indicate your elective choices as instructed by the Undergraduate Medical Education Office. After making your selection, you may contact Liz Radford, the fourth year coordinator for Surgery, **to request a specific preceptor.**

Student Quotas for Specific Clinical Electives
Numbers Allotted per Location per Block

TITLE OF CLINICAL ELECTIVE	SJHC	LHSC - UH	LHSC - VH
Cardiac Surgery	0	**1**	0
General Surgery	0	**3**	**3**
Orthopaedic Surgery	**2**	**2**	**1**
Paediatric General Surgery	0	0	**1**
Plastic & Reconstructive Surgery	**2**	**1**	**1**
Thoracic Surgery	0	0	**1**
Urology	**1**	**1**	**1**
Vascular Surgery	0	0	**1**

CARDIAC SURGERY OBJECTIVES

Similar to all surgical specialties, cardiac surgery has its routine and commonly encountered cases. There is also a variety of cases we see and operations performed that are quite atypical, unusual and rare. Because you are only on service for two weeks, the cases you will be involved with can vary considerably. You can certainly expect to participate in cases of coronary revascularization as well as valve repairs and replacements. Other cases with which we deal include, but are certainly not limited to, ascending aortic and arch reconstruction, ventricular remodeling, endocarditis, transplantation, cardiac tumours, congenital abnormalities and trauma. While much of your learning will focus on cases encountered during your rotation, it is important to achieve a good basic understanding of common cardiovascular diseases with which you will be confronted regardless of your chosen specialty. This would include identifying common cardiac disease and corresponding patient presentations/symptoms, natural history and management strategies. Below is a list of some of the goals and objectives we would expect you to achieve throughout your rotation.

a) Pre-Operative Cardiac Surgery History and Physical Examination
    i. Review cardiac risk factors in conjunction with past medical history
    ii. CCS classification of Angina
    iii. NYHA classification of shortness of breath
    iv. Perform complete cardiac surgery inpatient history and physicals
    v. Attend outpatient clinic with consultants on your team.
b) Basic Understanding of Cardiac Surgery Patients
    i. Indications of coronary artery bypass grafting
        - What are possible graft conduits used for CABG
    ii. Understand the rationale, indications, and benefits/drawbacks to various management strategies for coronary disease, including CABG, percutaneous coronary intervention and medical management.

iii. Approaches to coronary surgery
iv. Aortic valve diseases and indications for aortic valve surgery
    - Options for aortic valve replacement (review the types of aortic valves and indications for each type (i.e., bioprosthetic *vs* mechanical)
v. Indications for mitral valve repair or replacement
vi. Robotic heart surgery

c) Basic Understanding of Intra-Operative Cardiac Surgery Techniques
i. Obtain a basic overview of cardiopulmonary bypass
ii. Intra-operative monitoring
iii. Review the waveform of CVP
iv. What is MAP? How do you calculate it?
v. What is Cardiac Index?
vi. How does Heparin work? What is ACT? What is a good ACT for starting CPB?
vii. What is Protamine? What is Coumadin? What is Plavix?
viii. Review of Gross Anatomy of:
    - Chambers of heart
    - Electrical pathway of heart
    - Aortic/Mitral/Pulmonic valves
    - Branches of great vessels of heart
    - Review angiogram with resident and review all branches of coronary arteries
    - Understand coronary artery dominance and its relevance

d) Basic Understanding of Post-Operative Management of Cardiac Surgery Patients
i. Inotropic medications and their mechanisms of action
ii. Routine post-op ward and ICU management

e) Basic Surgical Skills
i. Surgical assistance
ii. Proper handling of surgical instruments
iii. Performing simple interrupted and running sutures and placing skin staples
iv. Knot tying

f) Management of Specific Cardiac Surgery Issues
i. Post-operative atrial fibrillation
ii. Chest pain
iii. Shortness of breath
iv. Low urine output
v. Cardiac tamponade
vi. Post-operative bleeding
vii. Review treatment of NSTEMI, STEMI, cardiogenic shock
viii. What is an IABP and how does it work

g) What is a Type A and Type B aortic dissection?
i. How are they treated

h) Clinical Signs of Endocarditis
i. Acute *vs* subacute endocarditis
ii. Treatment options

i) The remainder of assessment will be based on CANMEDS protocol.

GENERAL SURGERY OBJECTIVES

A. General

a) Participate as a full member of the General Surgery team during ward rounds, teaching rounds, clinics, operating room and participate in daily clinical duties.
N.B. On the first day, the clerk should discuss the weekly schedule with the senior resident or consultant on his/her respective team.

b) Gain knowledge of the anatomy, physiology and pathophysiology of common general surgical problems, including trauma.

c) Learn how to take a detailed history, evaluate (physical examination and ancillary tests) and develop a management plan for patients presenting with common general surgery problems as well the multiply injured trauma patient.

B. Knowledge

a) Have a basic understanding of the peri-operative evaluation of the surgical patient (including fluids and electrolytes, nutrition and common post-operative complications).

b) Have a basic knowledge of the anatomy and physiology of the GI tract, endocrine systems (thyroid, adrenal, parathyroid), breast and hernias

c) Have a basic understanding of the presentation, investigation and management of the following common general surgery problems:

i) the acute abdomen
ii) gallbladder disease
iii) hernias
iv) perianal disease
v) colorectal cancer
vi) breast cancer
vii) endocrine disorders (thyroid, parathyroid and adrenal)
viii) trauma patient

C. Skills

a) Take appropriate history and physical exam on general surgery patients in both elective and emergent scenarios.

b) Establish a management plan based on appropriate consideration of conservative, medical or surgical options for the disease process.

c) Participate in the operating room and show appropriate skills and attitudes to:

i. Prep and drape a sterile field
ii. Insert urethral catheter (Foley)
iii. Insert naso-gastric tube
iv. Identify pertinent operative anatomy
v. Perform basic surgical techniques (retraction, tissue handling, and basic suturing).

ORTHOPAEDIC SURGERY OBJECTIVES

a) Cognitive Skills – understand and describe
   i. Pathophysiology
      - Fracture healing and response to injury
      - Soft tissue healing
      - Infection: bone, joint
      - Arthritis: non-inflammatory, inflammatory
b) Psychomotor and Affective Skills – perform
   i. Proficient History
      - Patient-centred

- Accurate documentation

ii. Demonstrate Examination
- Anatomic landmarks
- Range of motion
- Peripheral nerves
- Joint instability: paediatric hip, adult knee & shoulder

iii. Patient Care: Emergency Room, Ward and Clinic
- Administration of analgesics
- Closed reduction techniques (fractures and dislocations)
- Splint and case immobilization
- Aspiration and injection
- Utilization of investigations
- Establish treatment plan for common disorders

PAEDIATRIC SURGERY OBJECTIVES

a) For each of the clinical conditions listed below, the student will be able to describe the relevant aspects of the common surgical illnesses and clinical problems, listed below, according to the following headings:
   i. Definition
   ii. Epidemiology
   iii. Causes (i.e., differential diagnosis), including a consideration of each of the following factors
      - Biological
      - Psychological
      - Social
   iv. Pathogenesis and pathophysiology
   v. Clinical features and complications
   vi. Investigations required to confirm a diagnosis
   vii. Management, including:
      - Medical
      - Surgical
      - Involvement of allied health care professionals
      - Nutritional
   viii. Prognosis

1. Bilious vomiting
2. Non-bilious vomiting
3. Acute abdominal pain
4. Chronic abdominal pain
5. Gastrointestinal bleeding
6. Constipation
7. Umbilical hernias
8. Inguinal hernias / hydroceles / undescented testes
9. Blunt and penetrating trauma
10. Appendicitis
11. Solid tumours of childhood
12. Chest wall deformities
13. Congenital lesions of the head and neck

b) Predict common post-operative complications in children and initiate their treatment.

c) Recognize the unique natural history of surgical diseases in children and use this information to reach a diagnosis.
d) Recognize the heat regulation problem in infants and the need for careful environmental control during evaluation and management.
e) Recognize the limited host resistance and high risk of nosocomial infections in newborns, and the need for aseptic protocols to minimize environmental hazards.
f) Recognize the need to individualize drug dosage and fluid administration on the basis of weight and be able to calculate expediently fluid and electrolyte requirements using standard formulas.
g) Recognize and accommodate for altered physiological systems (such as immature hepatic and renal function) that affect drug and anaesthetic administration.
h) Recognize the difference between types of sutures and choose the appropriate type and size for various wounds.
i) Predict the risk of apnea post anaesthesia and post narcotic administration in small infants.
j) Technical skills:
    i. Surgical procedures that each student should become familiar with during a paediatrics surgery rotation:
        - OR sterile technique
        - Wound closure (simple)
        - Suture removal
        - NG tube
        - IV
        - Foley catheter
        - Local anesthesia

PLASTIC & RECONSTRUCTIVE SURGERY OBJECTIVES

Plastic Surgery is a diverse specialty covering a number of body systems. The goal of the rotation in Plastic Surgery is to provide the medical student with exposure to a broad spectrum of clinical problems with a focus on several areas in particular and to develop a systematic approach to a wide spectrum of problems including but not limited to skin cancer, hand injuries, facial fractures, burn injuries, and difficult wound problems.

a) To be competent in obtaining a history from patients presenting with any of the categories listed above.
b) To be able to apply basic anatomy and physiological principles to assessment of patients presenting with problems in the various categories listed above.
c) To be able to formulate a differential diagnosis for patients presenting with the variety of categories listed above.
d) To perform a directed physical examination for a variety of common problems in the disease groupings listed.
e) To outline the steps in the initial investigation and treatment of patients with injuries in the listed categories of injury.
f) To identify appropriate timing of treatment of common problems in the listed disease groupings.
g) To perform basic procedures commensurate with their abilities such as casting, biopsy, excision of lesions, wound debridement, administering local anaesthesia, suturing, choice and application of dressings, under the supervision of consultants and residents.
h) To develop an understanding of the spectrum and importance of post-operative care for patients with a variety of surgical conditions in the listed disease groupings.
i) To achieve a basic level of competence in the following technical procedures:
    i. Incisional and/or punch biopsy of suspicious cutaneous lesions
    ii. Wound closure

iii. Incision and drainage of abscess, hematoma.

It is the goal to provide the student with a set of tools to deal comfortably with a wide variety of problems which they may encounter in their training and subsequent practice.

THORACIC SURGERY OBJECTIVES

A. General

a) Participate as a full member of the Thoracic Surgery team during ward rounds, teaching rounds, clinics, operating room and participate in daily clinical duties.
b) Gain knowledge of the anatomy, physiology and pathophysiology of the cardio-pulmonary and upper gastrointestinal systems.
c) Learn how to evaluate and develop a management plan for patients presenting with common thoracic surgery problems.

B. Knowledge

a) Have a basic knowledge of the anatomy and physiology of the heart, great vessels, pleura, trachea, bronchi, lungs, diaphragm, chest wall, phrenic and vagus nerves, mediastinum, esophagus and stomach.

b) Have a basic understanding of the presentation, investigation (including staging) and management of the following common thoracic problems:
   i. Carcinoma of the lung
   ii. Pneumothorax
   iii. Pleural effusions (hemothorax, infectious, malignant, etc.)
   iv. Gastro-esophageal reflux
   v. Benign esophageal disorders (achalasia, spasms, diverticulum)
   vi. Esophageal cancer
c) Understand basic principles of pulmonary physiology to interpret adequately an arterial blood gas and pulmonary function tests.
d) Develop an approach to the interpretation of chest radiographs.
e) Have a basic understanding of the principles of pleural drainage (chest tube insertion and management) and the functioning of various drainage systems (Heimlich valve, Pleurevac)
f) Recognize the indications and principles of endoscopic investigations (bronchoscopy and esophagogastroduodenoscopy – EGD)

C. Skills

b) Take an appropriate history and physical exam of thoracic surgery patients.
c) Order the proper investigations (CXR, CT scan, ABG, PFT's, endoscopy, etc) based on an adequate differential diagnosis and demonstrate the knowledge in the interpretation of these investigations.
d) Establish a management plan based on appropriate consideration of conservative, medical or surgical options for the disease process.
e) Know and demonstrate the basic steps involved in the insertion and removal of chest tubes, with minimal physical and emotional discomfort to the patients.
f) Participate in the operating room and show appropriate skills and attitudes to:
   i. Prep and drape a sterile field
   ii. Insert a urethral catheter (Foley)
   iii. Identify thoracic anatomy
   iv. Make reasonable suggestions and inquiry
   v. Perform basic surgical techniques (retraction, tissue handling, and basic suturing).

UROLOGY SURGERY OBJECTIVES

a) An understanding of the relevant anatomy, physiology and pathophysiology of patients' clinical conditions encountered during the selective.
b) Able to perform a thorough history and physical examination on patients assessed in the outpatient clinic and emergency department.
c) Able to present the case history of patients assessed in clinic in a concise manner, and to propose differential diagnoses and possible treatment strategies.
d) Able to perform urethral catheterization and minor suturing under supervision.
e) An understanding of the relevant investigations and indications for intervention of the following urologic conditions:
    i. Benign prostatic hyperplasia
    ii. Prostate cancer
    iii. Urinary tract infections
    iv. Erectile dysfunction
    v. Infertility
    vi. Urinary incontinence
    vii. Urinary stone disease
    viii. Bladder cancer
    ix. Kidney cancer
    x. End-stage renal failure
    xi. Enuresis

VASCULAR SURGERY OBJECTIVES

A. General

a) Participate as a full member of the vascular surgery team during ward rounds, teaching rounds, clinics, operating room and participate in daily clinical duties.
b) Learn how to evaluate and treat vascular surgery patients and to understand the systemic nature of atherosclerosis.

B. Knowledge

a) Have a basic understanding of the systemic nature of atherosclerosis and the medical management of vascular surgery patients.
b) Have a basic understanding of what an aneurysm is and the indications for repair as well as treatment options.
c) Have a basic understanding of the indications for intervention in carotid artery disease and the treatment options.
d) Have a basic understanding of the classification of peripheral vascular disease and to understand the indications for intervention and the treatment options.
e) Have a basic understanding of venous and lymphatic disease.

C. Skills

a) Take an appropriate history and physical exam of vascular surgery patients.
b) Order the appropriate investigations for vascular surgery patients.
c) Scrub in and assist in vascular surgery cases.
d) Develop basic suturing, tissue handling and surgical techniques.

Revised November 2011

DEPARTMENT INFORMATION – Windsor Location

ANESTHESIA & PERIOPERATIVE MEDICINE

Academic Director: Dr. E. Roberts
Education Assistant: Bev Nicholls
PHONE: 519 254-5577 ext 52507
EMAIL: beverlyn@uwindsor.ca
OFFICE LOCATION: Windsor Regional Hospital Rm 4306

YOU MAY TAKE TWO OR FOUR WEEK ELECTIVES IN ANESTHESIA

DESCRIPTION

A) General Description
Clinical duties in the OR and ICU.

B) Learning Objectives

The time devoted to Anaesthesia is insufficient to permit the student to administer anaesthesia unsupervised. However, many practicing physicians are exposed to some aspect of perioperative care as referring family practitioners, surgeons, internists, etc. Anaesthesia is an integral part of most patient surgical experiences. Physicians involved with surgical patients must have a basic understanding of the perioperative management of such patients. The general objectives for undergraduates are adopted from those put forth by the Association of Canadian University Departments of Anaesthesia (ACUDA).

OBJECTIVES:
The elective in Anaesthesia gives the student the opportunity to see:
c) The application of basic physiology, especially respiratory, cardiovascular and neurological, and
d) The use of major drugs studied in earlier phases.

As well as seeing the various techniques used in Anaesthesia, the student will learn to manage the unconscious patient and develop an ability to perform basic lifesaving skills in a controlled setting. The student will practice skills (e.g., endotracheal intubation, IV's, etc) useful during the management of life-threatening emergencies, particularly of the cardiovascular and respiratory systems. Management of mechanical ventilation of the lungs will be included.

With this general preamble in mind, the following are the objectives for the elective in Anaesthesia:

1) (Knowledge) Aspects of the history and physical exam that are specific in Anaesthesia:
2) includes previous anaesthetic/surgical problems such as airway problems, unusual drug reactions, etc.
3) family history of anaesthetic problems such as malignant hyperthermia
4) specific assessment such as upper airway
5) perioperative management of chronic drug treatment regimes
6) (Skills) Practical aspects of managing the unconscious patient:
7) airway protection and patency (patient positioning and intubation of the trachea)
8) cardiovascular – IV techniques
9) (Knowledge) Basic pharmacology and safe use of basic drugs, such as muscle relaxants, narcotics, sedatives, inhalational agents, vasopressor and other agents affecting the cardiac and respiratory systems.

10) (Knowledge) A basic understanding of the principles of general and regional anaesthesia.
11) (Knowledge) Immediate postanaesthetic management in the PACU:
12) acute pain management
13) life-threatening immediate-postoperative emergencies such as airway obstruction, respiratory arrest, cardiovascular instability.
14) May have opportunity to do procedures such as lumbar puncture, central venous access, arterial access for sampling and/or monitoring.
15) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
16) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
17) Perform a physical examination without causing the patient embarrassment.
18) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
19) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
20) Recognize risk factors and be able to counsel patients on risk reduction.
21) Identify the rights and legal responsibilities of physicians to patients and the community.
22) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
23) Apply the concept of cost-effectiveness to public health interventions.
24) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
25) Determine the validity and applicability of published data through critical appraisal.
26) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
27) Collaborate effectively with patients and families without having to take charge.
28) Demonstrate skill in finding common ground when differences of opinion exist.
29) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
30) Demonstrates the ability to place the needs of patients and families first.
31) Demonstrates honesty and trustworthiness in assessment, study and learning.
32) Demonstrates responsibility and respect.
33) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
34) Be willing to seek help, advice or consultation when needed.
35) Respond to personal and family needs and develop effective support systems
36) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
37) Use the concepts of evidence-based medicine to guide patient care decisions.
38) Identify potential conflict between individual and population interests and seek advice from others.
39) Assess the effectiveness of practice and engage in continuous quality improvement.

C) <u>Type of Clinical Experience</u>

In Patient	( )
Out Patient	( )
Both	(X)

D) Night and Weekend Call

Yes	(X) **Optional**
No	( )

E) Evaluation Procedure

Written Exam	( )
Oral Exam	( )
Informal Clin. Exam	(X)

F) Number of Students Accepted

Windsor Regional Hospital: **Note: Registration for this elective is NOT through the lottery.**

Hotel Dieu Grace Hospital: **Note: Registration for this elective is NOT through the lottery.**

G) Other Comments, Regulations or Expectations

Especially useful for those considering surgery, medicine, paediatrics, obstetrics and gynaecology, emergency, and other related areas

CLINICAL NEUROLOGICAL SCIENCES – Division of Neurology

Program Coordinator: Dr. Hiren Desai
Academic Director: Dr. Wassim Saad
Contact: Nadia Hachem
Hotel Dieu Grace Hospital Rm 5.469
Tel: 519 973-4411 ext 3380
Email: nadiah@uwindsor.ca

DESCRIPTION

The 4th year elective in Neurology offers students a continuation of their introduction to Clinical Neurological Sciences that they began in first and second year. It provides an opportunity for students to consolidate their knowledge by using it in clinical situations in the care of patients.

Students are assigned to the Neurology Team. As part of the team, commensurate with their abilities, students will be responsible for the investigation and treatment of patients seen on the in-patient, out-patient, consultation or emergency services.

LEARNING OBJECTIVES

A. General:
Knowledge: Students should be able to define, describe and discuss the:
a) clinical presentations that may signify nervous system involvement;
b) elements of the neurologic examination (mental status, language, cranial nerves, motor, reflexes, sensory, coordination and gait);
c) components of the nervous system being evaluated by each aspect of the exam;
d) indications, contraindications and complications of lumbar puncture;
e) indications and contraindications for CT head and MRI brain;
e) indications for and usefulness of electromyography and nerve conduction studies (EMG/NCS);
f) indications for and usefulness of electroencephalography (EEG).

Skills: Students should be able to:
a) demonstrate a focused history-taking that incorporates pertinent positives and negatives for the presenting neurologic complaint;
b) perform an organized and focused neurologic examination distinguishing normal from abnormal findings;
c) synthesize the history and physical findings to accurately localize the problem within the nervous system:

- cerebral hemisphere – cortical *vs* subcortical
- posterior fossa – brainstem and cerebellum
- spinal cord
- anterior horn cell
- nerve root/plexus
- peripheral nerve
- neuromuscular junction
- muscle

d) formulate a differential diagnosis based on the time course, history, exam and localization;
e) accurately interpret the results of CSF analysis;
e) demonstrate an approach to the interpretation of CT head.

B: Specific:

Knowledge:

Students should be able to define, describe and discuss the following neurologic conditions:

- Acute stroke – ischemic or hemorrhagic
- Transient ischemic attack
- Epilepsy
- Migraine
- Tension-type headache
- Meningitis and encephalitis
- Parkinson disease
- Coma and brain death
- Multiple Sclerosis
- Polyneuropathy

Students should be able to identify risk factors (modifiable and non-modifiable) that predispose individuals to the above neurologic conditions.

Skills: History-taking:

Students should be able to obtain, document and present an appropriately complete medical history for the following clinical presentations:

- Weakness – focal *vs* diffuse
- Numbness/tingling/altered sensation
- Visual disturbance
- Headache
- Seizure
- Altered level of consciousness/coma
- Aphasia
- Ataxia
- Involuntary movements
- Transient neurologic symptoms
- Neuropathic pain

Students should be able to define, describe and discuss:

- the clinical presentation as abrupt, acute, subacute or chronic;
- a relevant differential diagnosis;
- and identify the critical features ("red flags") that indicate an emergent or urgent presentation of:
    - headache
    - altered level of consciousness
    - weakness
    - visual disturbance
    - seizure
    - ataxia

Students should be able to demonstrate an initial approach to the investigation and management of the following:

- acute stroke in the emergency room;
- acute flaccid weakness;
- headache, fever and meningismus;

- abrupt, severe “thunderclap” headache;
- acute altered level of consciousness;
- status epilepticus.

OBJECTIVES:

1) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
2) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
3) Perform a physical examination without causing the patient embarrassment.
4) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
5) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
6) Recognize risk factors and be able to counsel patients on risk reduction.
7) Identify the rights and legal responsibilities of physicians to patients and the community.
8) Describe the determinants of health and apply them appropriately to enhance individual and community well-being.
9) Apply the concept of cost-effectiveness to public health interventions.
10) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
11) Determine the validity and applicability of published data through critical appraisal.
12) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
13) Collaborate effectively with patients and families without having to take charge.
14) Demonstrate skill in finding common ground when differences of opinion exist.
15) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
16) Demonstrates the ability to place the needs of patients and families first.
17) Demonstrates honesty and trustworthiness in assessment, study and learning.
18) Demonstrates responsibility and respect.
19) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
20) Be willing to seek help, advice or consultation when needed.
21) Respond to personal and family needs and develop effective support systems
22) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
23) Use the concepts of evidence-based medicine to guide patient care decisions.
24) Identify potential conflict between individual and population interests and seek advice from others.
25) Assess the effectiveness of practice and engage in continuous quality improvement.

NUMBER OF STUDENTS ACCEPTED

<u>Note</u>: Registration is NOT through the lottery.

CLINICAL NEUROLOGICAL SCIENCES - Division of Neurosurgery

Adjunct Professors:	Dr. Jhawar, Dr. Dang, Dr. Shamisa
Academic Director:	Dr. Wassim Saad
Education Assistant:	Bev Nicholls
PHONE:	519 254-5577 ext 52507
EMAIL:	beverlyn@uwindsor.ca
OFFICE LOCATION:	Windsor Regional Hospital Rm 4306

DESCRIPTION

The Year 4 Elective in Neurosurgery offers the students a continuation of their introduction to Clinical Neurological Sciences that they began in first and second year. It provides an opportunity for students to consolidate their knowledge by using it in clinical situations in the care of patients. It also allows the students to be exposed to the Neurosurgical experience as part of career decision-making.

The Neurosurgical experience is a more surgical approach to neurological problems. The types of neurological problems presenting to Neurologists and Neurosurgeons tend to differ – with Neurosurgical problems tending to represent structural lesions and trauma.

Students will be assigned to a Neurosurgery Team preceptor and commensurate with their abilities, will be responsible for the investigation and treatment of patients seen on the out-patient, in-patient, and emergency services.

LEARNING OBJECTIVES

1. Medical Expert

a) Obtain a focused neurological history from the patient/caregiver
b) Perform a detailed and focused neurological examination and an appropriate general physical examination
c) Localize the lesion in the neuraxis, using information from the history, physical examination and knowledge of neuroanatomy and neurophysiology.
d) Provide a differential diagnosis
e) Outline the initial steps in management
f) Identify acuity of the conditions when prompt management is warranted
g) Be familiar with the initial steps in the management of common head and spinal injuries
h) Identify situations in which patients with head injuries would require surgical interventions
i) Be able to perform procedures, commensurate with their abilities, under the direct supervision of the consultants and residents. These procedures may include, but are not limited to, surgical exposure, wound closure, lumbar puncture, application of external orthosis, external ventricular drainage.

2. Communicator

a) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
b) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
c) Perform a physical examination without causing the patient embarrassment.
d) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.

e) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
f) Recognize risk factors and be able to counsel patients on risk reduction.

3. Collaborator

a) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
b) Collaborate effectively with patients and families without having to take charge.
c) Demonstrate skill in finding common ground when differences of opinion exist.
d) Establish effective relationships with colleagues and other member of the health care team by:
    i. Considering their suggestions and criticisms.
    ii. Tactful handling of differences of opinion.

4. Manager

a) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
b) Recognize that neurosurgical care is resource-intensive.
c) Recognize the limitations of the availability of neurosurgery-related resources in non-university settings.
d) Use the concepts of evidence-based medicine to guide patient care decisions.
e) Identify potential conflict between individual and population interests and seek advice from others.

5. Health Advocate

a) Identify the rights and legal responsibilities of physicians to patients and the community.
b) Recognize lifestyle / risk factors that are associated with the patient's condition and collaborate with patient to promote wellness.
c) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
d) Apply the concept of cost-effectiveness to public health interventions.

6. Scholar

a) Demonstrate skill in self-directed learning by:
    i. Ability to identify areas of deficiency in one's own knowledge and skills.
    ii. Ability to find appropriate educational resources.
    iii. Ability to evaluate personal learning progress.
    iv. Ability to use new knowledge in the care of patients.
b) Determine the validity and applicability of published data through critical appraisal.

7. Professional

a) Demonstrate commitment to one's teachers, classmates, patients, the profession and society through ethical behavior
b) Demonstrate social accountability through a commitment to one's colleagues, patients, the profession and society.
c) Demonstrate a commitment to personal health, balancing the goal of excellence in education with a sustainable work ethic.
d) Demonstrate a commitment to reflective practice.
e) Demonstrate honesty and trustworthiness in assessment, study and learning.
f) Demonstrate responsibility and respect.
g) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
h) Be willing to seek help, advice or consultation when needed.
i) Respond to personal and family needs and develop effective support systems

CLINICAL DUTIES

In general, the student is expected to function as a member of the neurosurgical clinical team. This includes being present at morning patient rounds, seeing preoperative patients and patients in the emergency department. Students may attend at operative cases and assist in the operating room.

The rotation provides an opportunity for the students to consolidate his/her clinical examination skills. The greatest exposure to patient examination will be in the outpatient clinic and in the emergency department (during the day, or while on call). Students are encouraged to take advantage of these opportunities.

If a student wishes to concentrate on specific aspects of this rotation (e.g. extensive out-patient experience) then he should discuss this with the Program Director.

NIGHT AND WEEK-END CALL

Students rotating on the Neurosurgical service will be assigned night call and are expected to see patients with the resident/attending on call. The student will also attend clinics and O.R.'s.

NUMBER OF STUDENTS ACCEPTED

2 student per block as part of the general Neurosurgical elective.

FAMILY MEDICINE

Academic Director UGE: Dr. Catherine Yanchula, cfmozart@sympatico.ca, 519-977-6458
Education Assistant: Linda Wright, lindaw@uwindsor.ca, 519-254-5577 ext. 56424
Office Location: Windsor Regional Hospital, 3rd Floor, Schulich Office

Family Medicine Elective Website Windsor: http://www.uwindsor.ca/medicine/family-medicine-windsor

IT IS IMPORTANT THAT FAMILY MEDICINE IS AWARE OF ALL 4TH YEAR ELECTIVES (PRECEPTOR & COMPLETE ADDRESS) SO THAT FORMS CAN BE SENT TO THE PRECEPTORS PRIOR TO THE START OF THE ELECTIVE FOR AWARD NOMINATION PURPOSES.

Please email your elective dates, location and preceptor to the Program Coordinator, Jeanne Hickey jhickey@uwindsor.ca.

AWARDS There are two awards for 4th year electives in Family Medicine: RA Kinch and Theo Mary Anderson Awards. Descriptions can be found on the elective website.

CLINICAL SCIENCE ELECTIVES
Students are asked to send in their 4th year elective requests to the Program Coordinator, Jeanne Hickey, jhickey@uwindsor.ca. If you have a specific preceptor in mind please indicate this in your email.

STUDENTS CAN ARRANGE THEIR OWN ELECTIVES WITH OTHER FAMILY PHYSICIANS not listed on the elective website, but still need to send confirmation to the Program Coordinator.

Family Medicine electives 4 weeks or more in length MAY be arranged with our rural preceptors provided the student applies to SWOMEN for funding.

For links to practice descriptions please visit the Family Medicine elective website:

- **WINDSOR**

LEARNING OBJECTIVES: The central goal of the Family Medicine clerkship is to help you to enhance your skills in applying the Patient-Centred Clinical Method to understand the patient's personal experience of their illness and find common ground regarding management decisions. This includes:

- Becoming effective in interviewing patients
- Conducting a skilled and sensitive physical assessment
- Enhancing your clinical reasoning skills
- Finding and using the best evidence available
- Applying the principles of prevention whenever possible
- Understanding each patient in the context of the "big picture" – the patient as a person, their family and community and their ecosystem
- Demonstrating professional behaviour when interacting with patients, colleagues and staff.

OBJECTIVES:

1) Present a pertinent history and conduct a relevant physical exam, under supervision, on an adult or elderly patients presenting with the following complaints:
    a. new or chronic cough

    b. fatigue
    c. low back pain
    d. fever
    e. shortness of breath
    f. abdominal or pelvic pain
    g. headache
    h. dizziness
    i. chest pain
    j. lower leg swelling
2) Present a relevant and focused differential diagnosis to your supervisor, on an adult or elderly patient presenting with the following complaints:
    a. new or chronic cough
    b. fatigue
    c. low back pain
    d. fever
    e. shortness of breath
    f. abdominal or pelvic pain
    g. headache
    h. dizziness
    i. chest pain
    j. lower leg swelling
3) Describe (to your supervisor and/or the patient) an approach to the management of the following presenting complaints in an adult or elderly patient:
    a. new or chronic cough
    b. fatigue
    c. low back pain
    d. fever
    e. shortness of breath
    f. abdominal or pelvic pain
    g. headache
    h. dizziness
    i. chest pain
    j. lower leg swelling
4) The student will conduct (under supervision) a relevant history and physical exam for an adult or elderly patient with established diabetes presenting to the out-patient family medicine clinic for a diabetic check-up.
5) The student will manage (under supervision) an adult or elderly patient with established diabetes presenting to the out-patient family medicine clinic for a diabetic check-up. The student should also list the pertinent screening procedures done for a patient with diabetes.
6) The student will manage (under supervision) an adult or elderly patient presenting to the out-patient family medicine clinic with either established hypertension or established dyslipidemia. The management should include a discussion with the patient and/or supervisor of the appropriate medications, their common side effects and alternative treatments.
7) The student will participate in the care of an elderly patient, either in a long-term care facility, the acute care setting (i.e., the emergency department) or the out-patient family medicine clinic under the direction of their supervisor.
8) The student will demonstrate a prenatal exam (under supervision) on a female adult patient (as measured by completion of appropriate procedures and examination as directed by the antenatal flow sheets).

9) Given an infant, child or adult presenting to the out-patient family medicine clinic, the student will administer an intramuscular or subcutaneous immunization under supervision.
10) Given an infant presenting to the out-patient family medicine clinic, the student will demonstrate a well-baby exam under supervision.
11) Given an adult female patient presenting to the family medicine out-patient clinic, the student will perform a pap smear where appropriate.
12) Given an adult between the ages of 50-70 presenting to the out-patient family medicine clinic, the student will demonstrate a periodic health exam under supervision and will list to the supervisor relevant screening procedures appropriate for the patient in question.
13) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
14) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
15) Perform a physical examination without causing the patient embarrassment.
16) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
17) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
18) Recognize risk factors and be able to counsel patients on risk reduction.
19) Identify the rights and legal responsibilities of physicians to patients and the community.
20) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
21) Apply the concept of cost-effectiveness to public health interventions.
22) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
23) Determine the validity and applicability of published data through critical appraisal.
24) Given a patient of any age presenting to the out-patient family medicine clinic or acute care setting (i.e., the emergency department), the student will demonstrate skill in finding common ground when differences of opinion exist.
25) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
26) Collaborate effectively with patients and families without having to take charge.
27) Demonstrate skill in finding common ground when differences of opinion exist.
28) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
29) Demonstrates the ability to place the needs of patients and families first.
30) Demonstrates honesty and trustworthiness in assessment, study and learning.
31) Demonstrates responsibility and respect.
32) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
33) Be willing to seek help, advice or consultation when needed.
34) Respond to personal and family needs and develop effective support systems.
35) Use the concepts of evidence-based medicine to guide patient care decisions.
36) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
37) Identify potential conflict between individual and population interests and seek advice from others.
38) Assess the effectiveness of practice and engage in continuous quality improvement.

EVALUATION
To be discussed with your preceptor.

ON-CALL
To be discussed with your preceptor.

No. of students registered through the lottery: 2 Students per Block

Additional placements will be considered on an individual basis.

MEDICAL IMAGING

Academic Director: Dr. Wassim Saad
Coordinator: Dr. Fred Netherton
Contact: Nadia Hachem
Hotel Dieu Grace Hospital Rm 5.469
Tel: 519 973-4411 ext 3380
Email: nadiah@uwindsor.ca

A) General Description: The Department of Medical Imaging offers two-week elective experiences.

The elective will involve a rotation through each of the following imaging modalities: plain films, ultrasound, CT, MRI and interventional radiology. In addition, the student will be scheduled to spend time reporting with both residents and staff radiologists.

B) Learning Objectives

At the conclusion of the elective, the student should:

- Be able to initiate appropriate radiologic procedures for checking clinical hypotheses
- Acquire information required to solve problems from the diagnostic imaging tests
- Abide by the principles in the Code of Ethics as published by the Canadian Medical Association and keep informed of changes in the code
- Apply the concept of cost-effectiveness to public health interventions as they pertain to diagnostic and interventional radiology
- Demonstrate skill in self-directed learning by:
    - Ability to identify areas of deficiency in one's own knowledge and skills.
    - Ability to find appropriate educational resources.
    - Ability to evaluate personal learning progress.
    - Ability to use new knowledge in the care of patients.
    - Opportunity to learn and apply the scientific method.
    - Determine the validity and applicability of published data through critical appraisal.
    - Develop the self-knowledge necessary for personal growth and continuous learning
- Develop the ability to work effectively as a member of a team, as participant or leader.
- Demonstrate skill in finding common ground when differences of opinion exist.
- Demonstrate the ability to communicate effectively with peers and colleagues by contributing to productive communication and co-operation among colleagues engaged in education, research, and health care.
- Establish effective relationships with colleagues and other member of the health care team by:
    - Considering their suggestions and criticisms.
    - Tactful handling of differences of opinion.
    - Providing support and direction to less experienced personnel.
    - Recognize personal biases and ensure that they do not interfere with the patient's best interests.
- Use the concepts of evidence-based medicine to guide patient care decisions.
- Develop an awareness of personal assets, biases, and limitations.
- Be willing to seek help, advice or consultation when needed.

In addition, while on the elective, the student should:

- Have seen many of the diagnostic and interventional procedures performed in radiology.
- Have an organized approach to analyzing common examinations.
- Be able to understand the various diagnostic procedures in an efficient manner.
- Have taken an active part in the day-to-day operation of the department, including all resident rounds and seminars.

C) Type of Clinical Experience
In-patient and out-patient

D) Night and Weekend Call
Yes ( )
No (X)

E) Evaluation Procedure
Informal: based on attendance, enthusiasm and clinical knowledge.

F) Number of Students Accepted
Each Block: Two students per block at each teaching hospital.

G) Other Comments, Regulations or Expectations:
A wide variety of clinical problems are seen in the Department of Medical Imaging every day. The student is **expected to show initiative** in seeing as much as possible while in the department. The amount of direct one-on-one personal instruction will vary depending on workload, personnel, holiday and conference time. Students will be encouraged to utilize self-learning teaching aids (i.e. teaching file, computer video disks, CD-ROMS, etc.) at each hospital. Special requests will be taken into consideration, where possible. Absences will be recorded (see "E" above).

Note: Registration is NOT through the lottery.

DEPARTMENT OF MEDICINE

ALLERGY/CLINICAL IMMUNOLOGY

Academic Director: Dr. Wassim Saad
Education Assistant: Nadia Hachem
Hotel Dieu Grace Hospital Rm 5.469
Tel: 519 973-4411 ext 3380
Email: nadiah@uwindsor.ca

This elective in Clinical Immunology and Allergy is a clinical rotation, about common diseases affecting adults and children. The elective can be structured according to the students' interests. This rotation will be predominantly an outpatient clinical experience. The student will learn unique aspects of the history and physical exam applicable to allergy and will learn how to apply and interpret skin tests and will formulate a diagnosis and treatment plan. The student will be expected to attend the clinics and teaching. No night or weekend call is expected.

Note: Registration is NOT through the lottery.

AMBULATORY GENERAL INTERNAL MEDICINE

Academic Director: Dr. Wassim Saad
Education Assistant: Nadia Hachem
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Tel: 519 973-4411 ext 3380
Email: nadiah@uwindsor.ca

The student puts together a weekly schedule of morning and afternoon clinics, choosing from both GIM and (if desired) subspecialties. This demands some initiative on the part of the trainee to organize but the combination of attendance at teaching rounds and the morning and afternoon clinics gives trainees a chance to see ambulatory medicine, with exposure to a different set of patients compared to the Emergency Department and inpatient CTU. This rotation offers the chance to see pre- and post-op patients with a wide variety of medical and surgical problems. The trainee works alone or with a consult resident and is supervised directly one-on-one contact with the involved consultant. Decision making is developed in terms of recognizing relevant issues, prioritizing interventions and focussing on key aspects of preoperative medicine. On-call is minimal. Evaluation by compilation of reports of supervisors through Dr. Boyd.

Note: Registration is NOT through the lottery.

CARDIOLOGY

Academic Director: Dr. Wassim Saad
Education Assistant: Nadia Hachem
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Email: nadiah@uwindsor.ca

The 4th year elective/selective program provides experiences with both outpatient and inpatient experiences. Outpatient clinics occur every day. The student is assigned to work up new patients who are attending the cardiology clinic. The student will have opportunity to see a wide variety of cardiovascular problems e.g. ischemic heart disease, heart failure and valvular heart disease. The consultant reviews with the student the history, clinical findings, differential diagnosis, diagnostic and therapeutic plan. The student will dictate a preliminary note to the referring physician. Opportunity for exposure to the noninvasive techniques of cardiologic evaluation eg. ECG, stress testing, echocardiography and nuclear cardiology will be available. In addition, the student will have opportunity to view invasive diagnostic procedures i.e. cardiac catherization and interventional procedures i.e. coronary angioplasty.

Objectives:

1) Performs complete and accurate cardiovascular history and physical examination
2) Develops appropriate differential diagnosis and management plan
3) Formulates a plan for diagnostic testing and incorporates results into patient management
4) Develops competence in basic ECG interpretation
5) Develops an understanding of the indications and limitations of cardiac diagnostic tests
6) Develops adequate knowledge of cardiovascular therapeutic agents
7) Recognizes, identifies and manages early and late complications of acute coronary syndromes (ACS)
8) Knows the presentation, natural history and management of other common cardiovascular disorders (esp. heart failure)
9) Knows role of revascularization procedures in coronary disease
10) Learns to risk stratify patients in the short and long term
11) Learns secondary prevention strategies
12) Communicates appropriately with patients and families
13) Communicates effectively with on-call and attending cardiologists
14) Communicates effectively with nursing and allied healthcare staff
15) Prepares concise admission notes and daily progress notes
16) Prepares concise interim discharge summaries with all relevant information
17) Provides appropriate information on lab test requisitions
18) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations
19) Develop relationships with patients characterized by compassion, empathy, respect and genuineness, demonstrating a willingness to collaborate with the patient about management
20) Perform a physical examination without causing the patient embarrassment
21) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition
22) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients
23) Recognize risk factors and be able to counsel patients on risk reduction
24) Educates patients and families about illness, compliance and healthy behavior patterns
25) Educates patients and families about risk stratification and secondary prevention
26) Identify the rights and legal responsibilities of physicians to patients and the community
27) Describe the determinants of health an apply them appropriately to enhance individual and community well being
28) Apply the concept of cost-effectiveness to public health interventions
29) Increases knowledge base by general cardiovascular reading
30) Uses information technology (e.g., Medline, Internet) to rapidly update knowledge base
31) Knows and applies principles of evidence-based care
32) Prepares and presents topics and cases as requested

33) Demonstrate skill in self-directed learning by:
34) Ability to identify areas of deficiency in one's own knowledge and skills
35) Ability to find appropriate educational resources
36) Ability to evaluate personal learning progress
37) Ability to use new knowledge in the care of patients
38) Determine the validity and applicability of published data through critical appraisal
39) Works closely with the attending cardiologist, cardiology subspecialty resident, senior house staff and nurse practitioners ensuring clear lines of communication
40) Works closely with nursing and allied healthcare staff
41) Develops insight into own strengths and weaknesses
42) Delivers evidence-based care with integrity, honesty and compassion
43) Understands the professional, legal and ethical codes by which physicians are bound
44) Demonstrate the ability to work effectively as a member of a team, as participant or leader
45) Collaborate effectively with patients and families without having to take charge
46) Demonstrate skill in finding common ground when differences of opinion exist
47) Establish effective relationships with colleagues and other members of the health care team by:
    a. Considering their suggestions and criticisms
    b. Tactful handling of differences of opinion
48) Demonstrates the ability to place the needs of patients and families first
49) Demonstrates honesty and trustworthiness in assessment, study and learning
50) Demonstrates responsibility and respect
51) Recognize personal biases and ensure that they do not interfere with the patient's best interests
52) Be willing to seek help, advice or consultation when needed
53) Respond to personal and family needs and develop effective support systems
54) Coordinates scheduling of diagnostic tests and procedures in an efficient manner
55) Learns cost effectiveness of various therapeutic interventions
56) Understands cost effectiveness regarding risk stratification using invasive and non-invasive techniques
57) Shows good time management skills
58) Assist patients in accessing the health care system for physical, psychological, social and economic rehabilitation or long-term care
59) Use the concepts of evidence-based medicine to guide patient care decisions
60) Identify potential conflict between individual and population interests and seek advice from others
61) Assess the effectiveness of practice and engage in continuous quality improvement.

Note: Registration is NOT through the lottery.

EMERGENCY MEDICINE

Academic Director: Dr. Sophia Thomas
Education Assistant: Nadia Hachem
Hotel Dieu Grace Hospital Rm 5.469
Tel: 519 973-4411 ext 3380
Email: nadiah@uwindsor.ca

This clinical oriented elective provides the students with an opportunity for first contact with a wide range of clinical problems. Students will be expected to assess and manage emergency and non-emergency patients as they present to the Emergency Department. Students will participate as a member of the Emergency team in resuscitating critically ill patients. Due to the nature of the Emergency Medicine rotation, students will be

expected to work varying shifts and at both WRH and HDGH sites some weekends. Students will be evaluated by all Emergency staff physicians based on their clinical performance in Emergency.

Objectives:

1) Distinguish the seriously ill and injured patients from those with minor conditions.
2) Recognize and rapidly treat life-threatening or limb-threatening conditions as they initially present to the Emergency Department.
3) Stabilize the acutely ill patient and initiate appropriate management and referral.
4) Establish priorities in management of multiple patients.
5) Recognize and initiate treatment of minor or non-acute illnesses and injuries.
6) Be familiar with and make efficient use of laboratory and other investigational modalities available to the Emergency Department.
7) Demonstrate clinical judgment in decisions regarding referral of patients and/or requirement for follow-up care.
8) Have some familiarity with basic procedural skills and techniques essential to the practice of Emergency Medicine.
9) Have a rudimentary understanding of special areas of expertise in Emergency Medicine outside of the Emergency Department (e.g., pre-hospital care, trauma systems, disaster planning, poison control systems, etc)
10) Show an understanding of the principles of consent to treatment in the Emergency setting.
11) The following specific areas of learning should be included (but not considered comprehensive):
    a. Resuscitation
    b. Acute disorders by body system
    c. Trauma
    d. Toxicology
    e. Environmental disorders
    f. Acute age-related disorders
    g. Emergency medical services systems
    h. Technical/procedural skills in Emergency Medicine
12) The clinical clerk will demonstrate an approach to the assessment and management of patients presenting in the Emergency Department with any complaint/problem, including:
    a. Chest pain
    b. Shock
    c. Upper gastrointestinal hemorrhage
    d. Acute shortness of breath
    e. Upper airway obstruction/compromise
    f. Upper and lower respiratory infections
    g. Acute abdominal pain
    h. Acute flank pain
    i. Vomiting
    j. Vaginal bleeding
    k. Pelvic pain
    l. Red eye
    m. Hypothermia, hyperthermia
    n. Joint pain
    o. Back pain
    p. Neck pain
    q. Dysuria
    r. Sexual assault

s. Decreased level of consciousness
t. Acute intoxication
u. Seizures
v. Headache
w. Weakness
x. Acute confusion
y. Suicidal ideation
z. Acute behavioural disturbances
aa. Epitaxis
bb. Extremity injuries
cc. Burns
dd. Electrical injuries
ee. Animal bites

13) The trainee will demonstrate technical competence as well as be able to list or describe the indications for, contraindications to, complications and adverse effects of, and the obtaining of informed consent for the following procedures:
14) Upper airway management including intubation
15) Ventilator support and oxygen therapy
16) External chest compression (CPR)
17) Arterial puncture
18) Venous access
19) Spinal and extremity immobilization including collar, fracture board, splint
20) Gastric intubation
21) Needle and tube thoracostomy
22) Local anaesthetic
23) Wound management, including suturing
24) Anterior nasal packing
25) Slit lamp eye assessment and tonometry
26) Incision and drainage of abscesses
27) Electrocardiography
28) Application of external pacemakers
29) Spirometry
30) Defibrillation/cardioversion
31) Foreign body removal – soft tissue and eye.
32) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
33) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
34) Perform a physical examination without causing the patient embarrassment.
35) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
36) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
37) Recognize risk factors and be able to counsel patients on risk reduction.
38) Identify the rights and legal responsibilities of physicians to patients and the community.
39) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
40) Apply the concept of cost-effectiveness to public health interventions.
41) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.

b. Ability to find appropriate educational resources.
c. Ability to evaluate personal learning progress.
d. Ability to use new knowledge in the care of patients.

42) Determine the validity and applicability of published data through critical appraisal.
43) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
44) Collaborate effectively with patients and families without having to take charge.
45) Demonstrate skill in finding common ground when differences of opinion exist.
46) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
47) Demonstrates the ability to place the needs of patients and families first.
48) Demonstrates honesty and trustworthiness in assessment, study and learning.
49) Demonstrates responsibility and respect.
50) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
51) Be willing to seek help, advice or consultation when needed.
52) Respond to personal and family needs and develop effective support systems
53) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
54) Use the concepts of evidence-based medicine to guide patient care decisions.
55) Identify potential conflict between individual and population interests and seek advice from others.
56) Assess the effectiveness of practice and engage in continuous quality improvement.

Number of Students accepted per block: 2

ENDOCRINOLOGY

Academic Director: Dr. Wassim Saad
Education Assistant: Nadia Hachem
Hotel Dieu Grace Hospital Rm 5.469
Tel: 519 973-4411 ext 3380
Email: nadiah@uwindsor.ca

This citywide elective will provide the student an excellent opportunity to assess and manage ambulatory patients with diabetes mellitus, thyroid problems, lipid and other endocrine disorders. The student will work closely with the supervising consultants. Clinics include Diabetes, General Endocrine, Thyroid, Lipid and Metabolic bone clinics. The student will conduct the initial assessment (history and physical) on new patients, review this with the consultant, and then with the consultant develop a plan of management for the patient's problems. The student then dictates a letter to the referring physician.

The student's final assessment is completed by a consensus of the consultants and resident and reviewed with Dr. Cheung. The learning objectives of this elective are to provide the student with the opportunity to become more familiar with the investigation and management of common endocrine problems. No night or weekend call is expected.

Objectives:

1) To know the acute and chronic complications of diabetes.

2) To know the treatments for Type 1 and Type 2 diabetes including those for glucose control, lipid control and blood pressure control.
3) To have reliably palpated at least one enlarged thyroid gland.
4) To know the presentation of hyperthyroidism and hypothyroidism.
5) To know the investigations important to hyperthyroidism and hypothyroidism.
6) To know the treatments for hyperthyroidism and hypothyroidism.
7) To actively observe and consider the effects of chronic disease on a patient's interactions with family/work/community/physicians.
8) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
9) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
10) Perform a physical examination without causing the patient embarrassment.
11) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
12) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
13) Recognize risk factors and be able to counsel patients on risk reduction.
14) Identify the rights and legal responsibilities of physicians to patients and the community.
15) Describe the determinants of health and apply them appropriately to enhance individual and community well-being.
16) Apply the concept of cost-effectiveness to public health interventions.
17) Demonstrate skill in self-directed learning by:
18) Ability to identify areas of deficiency in one's own knowledge and skills.
19) Ability to find appropriate educational resources.
20) Ability to evaluate personal learning progress.
21) Ability to use new knowledge in the care of patients.
22) Determine the validity and applicability of published data through critical appraisal.
23) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
24) Collaborate effectively with patients and families without having to take charge.
25) Demonstrate skill in finding common ground when differences of opinion exist.
26) Establish effective relationships with colleagues and other member of the health care team by:
27) Considering their suggestions and criticisms.
28) Tactful handling of differences of opinion.
29) Demonstrates the ability to place the needs of patients and families first.
30) Demonstrates honesty and trustworthiness in assessment, study and learning.
31) Demonstrates responsibility and respect.
32) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
33) Be willing to seek help, advice or consultation when needed.
34) Respond to personal and family needs and develop effective support systems
35) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
36) Use the concepts of evidence-based medicine to guide patient care decisions.
37) Identify potential conflict between individual and population interests and seek advice from others.
38) Assess the effectiveness of practice and engage in continuous quality improvement.

<u>Note</u>: Registration is NOT through the lottery.

GASTROENTEROLOGY

Academic Director: Dr. Wassim Saad
Education Assistant: Nadia Hachem
Hotel Dieu Grace Hospital Rm 5.469
Tel: 519 973-4411 ext 3380
Email: nadiah@uwindsor.ca

General description and type of clinical experience: The 4th year elective/selective program is an outpatient experience. The student is assigned a new patient attending the outpatient clinic on referral from a family physician. The student obtains a complete history, does a physical, formulates a problem list, and makes a differential diagnosis, diagnostic and therapeutic plans for each problem. After thorough discussion with the consultant the student dictates and then corrects the consultation note to the referring physician. If the patient returns for a diagnostic procedure in the endoscopy unit the student may view that procedure.

Objectives:

1) Obtain a basic knowledge and understanding of the wide spectrum of the GI disease.
2) Experience in sigmoidoscopy is usually obtained.
3) The clinical presentation of the common GI diseases will be stressed as well as the most efficient use of the diagnostic resources used in the investigation of these diseases.
4) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
5) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
6) Perform a physical examination without causing the patient embarrassment.
7) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
8) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
9) Recognize risk factors and be able to counsel patients on risk reduction.
10) Identify the rights and legal responsibilities of physicians to patients and the community.
11) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
12) Apply the concept of cost-effectiveness to public health interventions.
13) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
14) Determine the validity and applicability of published data through critical appraisal.
15) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
16) Collaborate effectively with patients and families without having to take charge.
17) Demonstrate skill in finding common ground when differences of opinion exist.
18) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
19) Demonstrates the ability to place the needs of patients and families first.
20) Demonstrates honesty and trustworthiness in assessment, study and learning.
21) Demonstrates responsibility and respect.

22) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
23) Be willing to seek help, advice or consultation when needed.
24) Respond to personal and family needs and develop effective support systems
25) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
26) Use the concepts of evidence-based medicine to guide patient care decisions.
27) Identify potential conflict between individual and population interests and seek advice from others.
28) Assess the effectiveness of practice and engage in continuous quality improvement.

Note: Registration is NOT through the lottery.

GENERAL INTERNAL MEDICINE CLINICAL TEACHING UNIT

Academic Director: Dr. Wassim Saad
Education Assistant: Nadia Hachem
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Tel: 519 973-4411 ext 3380
Email: nadiah@uwindsor.ca

Note: Students will be assigned to the CTU Team.

This 4th year elective is an inpatient experience on the General Internal Medicine Clinical Teaching Unit. The fourth-year clinical clerk choosing this elective is expected to integrate with the team and assume responsibility for the initial work-up and continuing care for a proportion of the team's patients. This implies participation in team rounds and sharing in the call schedule. This elective is designed to develop clinical skills in history taking and physical examination, to facilitate clinical decision-making under supervision, and to allow time for independent reading and learning. Each student should also anticipate at least one clinical presentation at the weekly team rounds. Evaluations are carried out by the Consultants and team Resident and are conveyed to the trainee at the end of the rotation.

OBJECTIVES

Internal Medicine Objectives

A. Abdominal Pain

a) Knowledge: Students should be able to define, describe, and discuss:
   i. Three principal types of abdominal pain:
      - Visceral pain
      - Somatoparietal or peritoneal pain
      - Referred pain.
   ii. Relative likelihood of the common causes of abdominal pain based on the pain pattern and the quadrant in which the pain is located.
   iii. Diagnostic discrimination between common causes of abdominal pain based on history, physical exam, laboratory testing, and imaging procedures.
   iv. Symptoms and signs indicative of an acute/surgical abdomen.
   v. The influence of age, gender, menopausal status, and immunocompetency on the prevalence of different disease processes that may result in abdominal pain.

b) Skills: Students should be able to demonstrate specific skills, including:
   vi. History-taking skills: Students should be able to obtain, document, and present an appropriately complete medical history that differentiates among etiologies of disease, including:

- Chronology
- Location
- Radiation
- Character
- Intensity
- Duration
- Aggravating or alleviating factors
- Associated symptoms
- Pertinent information about previous abdominal or pelvic surgeries, chronic medical conditions, sexual activity, medications, and family history.

vii. Physical exam skills: Students should be able to perform a focused physical exam in patients who present with abdominal pain in order to:

- Establish a preliminary diagnosis of the cause
- Assess the severity of the patient's presenting symptoms and signs
- Determine the urgency of implementing diagnostic and treatment plans.

viii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis of the most important and likely causes of a patient's abdominal pain and recognize specific history, physical exam, and laboratory findings that distinguish between the following diagnoses or conditions:

- Appendicitis
- Cholecystitis (biliary colic)
- Pancreatitis
- Diverticulitis
- Peptic ulcer disease including perforation
- Gastroenteritis
- Hepatitis
- Irritable bowel syndrome
- Small bowel obstruction
- Acute mesenteric ischemia
- Inflammatory bowel disease
- Ruptured abdominal aortic aneurysm
- Ureteral stones (renal colic)
- Pelvic inflammatory disease
- Ruptured ectopic pregnancy
- Abdominal wall pain
- Referred pain.

ix. Laboratory interpretation: Students should be able to interpret specific diagnostic tests and procedures that are commonly ordered to evaluate patients who present with abdominal pain. Laboratory and diagnostic tests should include, when appropriate:

- CBC with differential
- UA
- Pregnancy test
- Stool for occult blood
- Hepatic function panel
- Amylase and lipase
- Abdominal obstructive series.

- Students should be able to define the indications for, and interpret (with consultation) the results of:

- Abdominal ultrasound
- Abdominal CT scan
- Paracentesis fluid studies
- Upper gastrointestinal endoscopy
- Sigmoidoscopy/colonoscopy
- Barium contrast studies
- Radionuclide scan of the hepatobiliary system.

x. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
- Recognizing the role of narcotic analgesics and empiric antibiotics in treating selected patients who present with acute abdominal pain
- Determining when to consult a gastroenterologist or a surgeon
- Involving a surgeon as soon as possible when a patient is identified as having an acute abdomen
- Selecting various tests and procedures commonly used to diagnose patients who present with symptoms of abdominal pain
- Recommending basic initial management plans for the various causes of abdominal pain listed in the differential diagnosis.

B. Altered Mental Status

a) Knowledge: Students should be able to define, describe, and discuss:

i. The differentiation of delirium, dementia, and depression.

ii. The pathophysiology, symptoms, and signs of the most common and most serious causes of altered mental status, including:
- Metabolic causes (e.g., hyper/hyponatremia, hyper/hypoglycemia, hypercalcemia, hyper/hypothyroidism, hypoxia/hypercapnea, B12 deficiency, hepatic encephalopathy, uremic encephalopathy, drug/alcohol intoxication/withdrawal, and Wernicke's encephalopathy)
- Structural lesions (e.g., primary or metastatic tumor, intracranial hemorrhage, subdural hematoma)
- Vascular (e.g., cerebrovascular accident, transient ischemic attack, cerebral vasculitis
- Infectious etiologies (e.g., encephalitis, meningitis, urosepsis, endocarditis, pneumonia, cellulites)
- Seizures/ post-ictal state
- Hypertensive encephalopathy
- Low perfusion states (e.g., arrhythmias, MI, shock, acute blood loss, severe dehydration)
- Miscellaneous causes (e.g., fecal impaction, postoperative state, sleep deprivation, urinary retention).

iii. The importance of thoroughly reviewing prescription medications over-the-counter drugs, and supplements and inquiring about substance abuse.

iv. The risk factors for developing altered mental status, including:
- Dementia
- Advanced age
- Substance abuse
- Comorbid physical problems such as sleep deprivation, immobility, dehydration, pain, and sensory impairment.

v. The diagnostic evaluation of altered mental status.
vi. Indications, contraindications, and complications of lumbar puncture.
vii. Principles of management of the common causes of altered mental status.
viii. Nonpharmacologic measures to reduce agitation and aggression, including:
    - Avoiding the use of physical restraints whenever possible
    - Using reorientation techniques
    - Assuring the patient has their devices to correct sensory deficits
    - Promoting normal sleep and day/night awareness
    - Preventing dehydration and electrolyte disturbances
    - Avoiding medications which may worsen delirium whenever possible
        - (e.g., anticholinergics, benzodiazepines, etc.).
ix. The risks of using physical restraints.
x. The risk and benefits of using low-dose high potency antipsychotics for delirium associated agitation and aggression.

b) Skills**:** Students should be able to demonstrate specific skills, including:
i. History-taking skills**:** Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of altered mental status including eliciting appropriate information from patients and their families regarding the onset, progression, associated symptoms, and level of physical and mental disability.
ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
    - Complete neurologic examination
    - Mental status examination
    - Fundoscopic examination.
iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology for altered mental status.
iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, when appropriate:
    - CBC with differential
    - Electrolytes, BUN/Cr, GLC, hepatic function panel, Ca
    - ABG
    - Toxicology screen
    - VDRL
    - Vitamin B12 and thiamine measurements
    - Thyroid function tests
    - Urinalysis and urine culture
    - Blood cultures
    - Cerebrospinal fluid analysis.
- Students should be able to define the indications for and interpret (with consultation) the results of:
    - Cranial CT
    - Cranial MRI
    - Electroencephalogram.
v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
    - Recognizing that altered mental status in a older inpatient is a medical emergency and requires that the patient be evaluated immediately.
    - Writing appropriate fluid and replacement orders for patients with common

electrolyte and metabolic disturbances.
- Writing appropriate antibiotic orders for the treatment of common infectious etiologies.
- Ordering appropriate nonpharmacologic and pharmacologic interventions for patients with acute altered mental status with accompanying agitation and aggression.
- Determining when to obtain consultation from a neurologist or neurosurgeon.
- Utilizing hospital and community resources for patients with permanent or disabling conditions to help assist their transfer back to the community or rehabilitation facility.

C. Anemia

a) Knowledge: Students should be able to define, describe, and discuss:

i. Classification of anemia based on red cell size:

- **Microcytic:**
  - Iron deficiency
  - Thalassemic disorders
  - Sideroblastic anemia
- **Normocytic:**
  - Acute blood loss
  - Hemolysis
  - Anemia of chronic disease (e.g., infection, inflammation, malignancy)
  - Chronic renal insufficiency/erythropoietin deficiency
  - Bone marrow suppression (e.g., bone marrow invasion, aplastic anemia)
  - Hypothyroidism
  - Testosterone deficiency
- **Macrocytic:**
  - Ethanol abuse
  - B12 deficiency
  - Folate deficiency
  - Drug-induced
  - Reticulcytosis.
  - Liver disease.
  - Myelodysplastic syndromes.
  - Hypothyroidism.

ii. Morphological characteristics, pathophysiology, and relative prevalence of each of the causes of anemia.

iii. The meaning and utility of various components of the hemogram (e.g., hemoglobin, hematocrit, mean corpuscular volume, and random distribution width).

iv. The classification of anemia into hypoproliferative and hyperproliferative categories and the utility of the reticulocyte count/index.

v. The potential usefulness of the white blood cell count and red blood cell count when attempting to determine the cause of anemia.

vi. The diagnostic utility of the various tests for iron deficiency (e.g., serum iron, total iron binding capacity, transferrin saturation, ferritin).

vii. The genetic basis of some forms of anemia.

viii. Indications, contraindications, and complications of blood transfusion.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:

- Constitutional and systemic symptoms (e.g., fatigue, weight loss)
- History of gastrointestinal bleeding or risk factors for it.
- Abdominal pain.
- Prior history of anemia or other blood diseases.
- Medications.
- Diet.
- Alcohol use.
- Menstrual history.
- Family history of anemia or other blood diseases.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
- Pallor (e.g., palms, conjunctiva, nail beds).
- Mouth (e.g., glossitis, cheilosis).
- Hyperdynamic precordium, systolic flow murmur.
- Lymph nodes.
- Spleen.
- Nervous system.

iii. Differential diagnosis: Students should be able to generate a list of the most important and most common causes of anemia, recognizing specific history, physical exam, and laboratory findings that suggest a specific etiology.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them when appropriate:
- Hemoglobin and hematocrit.
- Red cell indices (e.g., MCV and random distribution width).
- White blood cell and platelet count.
- Reticulocyte count.
- Iron studies (serum iron, TIBC, ferritin, transferrin).
- Serum B12 and folate.
- Haptoglobin.
- Lactic dehydrogenase (LDH).
- Hemoglobin electrophoresis.
- Blood smear.

- Students should be able to define the indications for and interpret (with consultation) results of:
  - Bone marrow biopsy.

D. Chest Pain

a) Knowledge: Students should be able to define, describe and discuss:

i. Symptoms and signs of chest pain that may be due to an acute coronary syndrome such as unstable angina or acute myocardial infarction.

ii. Symptoms and signs of chest pain that are characteristic of angina pectoris.

iii. Symptoms and signs of chest pain due to other cardiac causes such as:
- Atypical or variant angina (coronary vasospasm, Prinzmetal angina).
- Pericarditis.
- Aortic dissection.
- Valvular heart disease (aortic stenosis, mitral valve prolapse).
- Non-ischemic cardiomyopathy.
- Syndrome X.

iv. Symptoms and signs of chest pain due to gastrointestinal disorders such as:
- Esophageal disease (GERD, esophagitis, esophageal dysmotility).

- Biliary disease (cholecystitis, cholangitis).
- Peptic ulcer disease.
- Pancreatitis.

v. Symptoms and signs of chest pain due to pulmonary disorders such as:
- Pneumonia.
- Spontaneous pneumothorax.
- Pleurisy.
- Pulmonary embolism.
- Pulmonary hypertension/cor pulmonale.

vi. Symptoms and signs of chest pain due to musculoskeletal causes such as:
- Costochondritis.
- Rib fracture.
- Myofascial pain syndromes.
- Muscular strain.
- Herpes zoster.

vii. Symptoms and signs of chest pain due to psychogenic causes such as:
- Panic disorders.
- Hyperventilation.
- Somatoform disorders.

viii. Factors that may be responsible for provoking or exacerbating symptoms of ischemic chest pain by:
- Increasing myocardial oxygen demand.
- Tachycardia or tachyarrhythmia.
- Hypertension.
- Increased wall stress (aortic stenosis, cardiomyopathy).
- Hyperthyroidism.
- Anemia.
- Hypoxemia.

ix. Risk factors for the development of coronary heart disease:
- Age and gender.
- Family history of sudden death or premature CAD.
- Personal history of peripheral vascular or cerebrovascular disease.
- Smoking.
- Lipid abnormalities (includes dietary history of saturated fat and cholesterol).
- Diabetes mellitus.
- Hypertension.
- Obesity.
- Sedentary lifestyle.
- Cocaine use.
- Estrogen use.
- Chronic inflammation.

x. Physiologic basis and/or scientific evidence supporting each type of treatment, intervention or procedure commonly used in the management of patients who present with chest pain.

xi. Role of a critical pathway or practice guideline in delivering high quality, cost-effective care for patients presenting with symptoms of chest pain in the outpatient clinic, emergency room or hospital.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an appropriately complete medical history that differentiates among the common etiologies of chest pain.

- The initial medical history should allow students to categorize the patients' symptoms as angina pectoris, atypical angina or non-cardiac chest pain. (PC, CS)
- Specifically, the medical history of a patient with chest pain should contain information about those clinical characteristics that are typical of angina pectoris:
- Substernal location.
- Precipitated by exertion.
- Relieved by rest or nitroglycerin.
- Onset, duration, severity, radiation, presence or absence of associated symptoms (such as dyspnea, diaphoresis or lightheadedness).
- The history of a patient with chest pain should also contain information about:
    - Risk factors for coronary heart disease.
    - Previous history of ischemic heart disease or valvular heart disease (rheumatic fever, cardiac murmurs).
    - Previous history of peripheral vascular disease or cerebrovascular disease.

ii. Physical exam skills: Students should be able to perform a focused physical exam that includes the following elements:

- Accurate measurement of arterial blood pressure and recognition of the typical blood pressure findings that occur in patients with aortic stenosis, aortic insufficiency, and pulsus paradoxus)
- Assessment of major arterial pulses for abnormalities, including bruits.
- Assessment of the neck veins for jugular venous distention and, when necessary, evaluation for abdominal jugular reflux.
- Assessment of the conjunctiva and optic fundus.
- Assessment of the extremities to ascertain skin condition, including color, temperature and the presence of edema, xanthomas, cyanosis and clubbing.
- Assessment of the lungs for crackles, rhonchi, rubs and decreased breath sounds.
- Inspection and palpation of the anterior chest to identify right and left sided heaves, lifts, and thrills.
- Auscultation of the heart to determine rhythm, intensity of heart sounds, splitting of S2 and the presence of rubs, gallops (S3, S4, summation) or extra heart sounds (e.g., clicks).
- Auscultation of the heart to detect the presence of heart murmurs. When a heart murmur is present, students should be able to:
    - Identify timing (systolic vs. diastolic, holosystolic vs. ejection).
    - Describe pitch, location and pattern of radiation.
    - Gauge significance (innocent vs. pathologic, sclerosis vs. stenosis).

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis and recognize specific history, physical exam, and laboratory findings that suggest a diagnosis of myocardial ischemia rather than a non-ischemic cause of chest pain (GI, pulmonary, musculoskeletal, psychogenic or undetermined).

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, when appropriate:

- Cardiac biomarkers indicative of myocardial necrosis.
- 12-lead ECG.
- Chest radiograph.
- ABG.

- Students should be able to define the indications for, and interpret (with consultation) the results of the following diagnostic tests and procedures:
    - Echocardiogram (transthoracic and transesophageal).
    - Exercise stress test.
    - Stress thallium (myocardial perfusion scan).

- Dobutamine stress echocardiography.
- Coronary angiography.
- Ventilation/perfusion lung (V/Q) scan.
- Pulmonary embolism protocol CT scan.
- Pulmonary angiography.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
   - Identification of the indications, contraindications, mechanisms of action, adverse reactions, significant interactions, and relative costs of the following medications:
     - Anti-platelet agents (aspirin, clopidogrel)
     - Nitroglycerin and long-acting nitrates
     - Beta-blockers
     - Angiotensin-converting enzyme inhibitors
     - Calcium channel blockers
     - Antithrombotic therapy (heparin, warfarin)
     - Glycoprotein IIb/IIIa inhibitors
     - Lipid-lowering agents

E. Dyspnea

a) Knowledge: Students should be able to define, describe, and discuss:

i. Major organ systems/pathologic states causing dyspnea and their pathophysiology, including:
   - Cardiac.
   - Pulmonary.
   - Anemia/hypovolemia.
   - Acid-base disorders and other metabolic derangements.
   - Neuromuscular weakness.
   - Central neurologic derangements.

ii. The symptoms, signs, and laboratory values associated with respiratory failure and ventilatory failure.

iii. The alveolar-arterial oxygen gradient and the pathophysiologic states that can alter it.

iv. The potential risks of relying too heavily on pulse oximetry as the sole indicator of arterial oxygen content.

v. The common causes of acute dyspnea, their pathophysiology, symptoms, and signs, including:
   - Pulmonary edema.
   - Pulmonary embolism.
   - Pneumonia.
   - Acute exacerbation of COPD.
   - Asthma.
   - Cardiac ischemia.
   - Pneumothorax.
   - Anxiety.

vi. The common causes of chronic dyspnea their pathophysiology, symptoms, and signs, including:
   - Congestive heart failure.
   - COPD.
   - Pulmonary parenchymal disease.
   - Pulmonary vascular disease.
   - Anemia.
   - Neuromuscular weakness.

vii. Basic treatment options for the common causes of acute and chronic dyspnea.

viii. The utility of supplemental oxygen therapy and the potential dangers of overly aggressive oxygen supplementation in some pathophysiologic states.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:

- Quantity, quality, severity, duration, ameliorating/exacerbating factors of the dyspnea.
- Associated symptoms such as fevers, chills, sweats, orthopnea, paroxysmal nocturnal dyspnea, wheezing, edema, chest pain, cough, sputum production, hemoptysis, palpitations, nausea, anxiety, dizziness, orthostasis, weakness.
- History of pulmonary, cardiac, neuromuscular/neurologic, renal, hepatic, and coagulopathic disorders.
- Risk factors for deep vein thrombosis/pulmonary embolism.
- Ingestion of drugs and toxic substances, administration of IV fluids.
- smoking and environmental exposures.

ii. Physical exam skills**:** Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:

- Accurately determining respiratory rate and level of respiratory distress. Assessing the use of accessory muscles for breathing.
- Accurately measuring pulsus paradox.
- Identifying bronchial breath sounds, rales, rhonchi, wheezes, and subcutaneous emphysema.
- Identifying signs of pulmonary consolidation and hyperresonance.
- Identifying signs of pleural effusion.
- Identifying signs of elevated central venous pressure.
- Identifying signs of hypovolemia.
- Identifying S3 gallop, edema, and pallor.
- Identifying signs of deep vein thrombosis.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology of dyspnea.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them,

- Electrolytes, BUN/Cr, GLC.
- Pulse oximitry.
- ABG.
- Chest radiograph.
- 12-lead ECG.

- Pulmonary function tests.) Students should be able to define the indications for and interpret (with consultation) the results of:
  - Ventilation perfusion scintigraphy.
  - Chest CT.
  - Venous Doppler studies.
  - Cardiac stress test.
  - Echocardiography.

F. Fever

a) Knowledge: Students should be able to define, describe, and discuss:

i. Physiology of the acute febrile response, including the:

- The differences in clinical manifestations between immunocompetent and immunocompromised patients.

ii. Risk factors and co-morbidities that are important in determining the host response to infection (e.g., neutropenia, asplenia, cirrhosis, alcoholism, diabetes, corticosteroid use, malnutrition, T cell dysfunction)

iii. Etiology of fever in special populations, including patients with a history of:
- Neutropenia due to cancer-related myelosuppression.
- HIV disease.
- Intravenous drug abuse.
- Recent international travel or immigration.
- Concomitant skin rash and lymphadenopathy.

iv. Pathophysiology and clinical presentation of patients with sepsis syndromes

v. Common causes of prolonged fever without apparent source, including:
- FUO in a normal host.
- Nosocomial FUO.
- Neutropenic FUO.
- FUO associated with HIV disease.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:
- Chronology, duration and pattern of fever.
- Associated symptoms.
- Immune status and baseline co-morbidities.
- Immunization status.
- Relevant history of exposures.
- Occupational, travel, family, and sexual history.
- Medication history, including use of over-the-counter and illicit drugs.

ii. Physical exam skills**:** Students should be able to perform a complete physical exam to determine the severity of disease and establish a preliminary hypothesis about the cause of fever.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology:
- Infection.
- Rheumatologic disease/inflammatory disorder.
- Malignancy.
- Drug reaction.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them when appropriate:
- CBC with differential.
- UA with exam of urinary sediment.
- Chest radiography.
- Blood cultures.
- Urine cultures.
- Sputum Gram stain and cultures.
- Sputum AFB stain and culture.
- ESR and/or specific rheumatologic tests.
- PPD.
- Cerebrospinal fluid analysis (color, opening pressure, chemistries, cell counts, staining, cultures, cytology, cryptococcal antigen, VDRL).
- Chemistries, Gram stain, and culture of abnormal fluid collections (e.g., pleural effusion, ascites, abscesses.
- Stool culture of enteric pathogens.
- Stool Clostridium difficile toxin assay.

- Stains and cultures from the throat, urethra, anus, cervix, vagina.
- Students should be able to define the indications for and interpret (with consultation) the results of:
    - CT imaging.
    - Echocardiography.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
    - Developing an appropriate evaluation plan for patients with fever including ordering and interpreting appropriate laboratory and radiographic studies.
    - Assessing the severity of presentation based on the history, host factors, physical exam and laboratory results and recognizing presentations that need immediate attention.
    - Developing an appropriate treatment plan for patients with fever including the selection of an initial, empiric treatment regimen for neutropenic patients with fever and/or patients with life threatening sepsis.
    - Determining when to obtain consultation from an appropriate specialist.)

G. Fluid and Electrolyte Disorders

a) Knowledge: Students should be able to define, describe and discuss:

i. The pathophysiology, presenting symptoms and signs and differential diagnosis of:
    - Hypo- and hypervolemia.
    - Hypo- and hypernatremia.
    - Hypo- and hyperkalemia.
    - Hypo- and hypercalcemia.
    - Simple and mixed acid-base disorders.
    - Respiratory acidosis and alkalosis.
    - Metabolic acidosis and alkalosis.

ii. The importance of total body water and its distribution.
iii. The differential diagnosis of hypo- and hypernatremia in the setting of volume depletion, euvolemia, and hypervolemia.
iv. How to distinguish hyponatremia from pseudohyponatremia.
v. How to identify spurious hyperkalemia or acidosis-related hyperkalemia.
vi. Risks of too rapid or delayed therapy for hyponatremia.
vii. The most common causes of respiratory acidosis, respiratory alkalosis, metabolic acidosis and metabolic alkalosis.
viii. How to calculate the anion gap and explain its relevance to determining the cause of a metabolic acidosis.
ix. Changes in total body water distribution that occur with aging.
x. How altered mental status can contribute to electrolyte disorders.
xi. Tests to use in the evaluation of fluid, electrolyte, and acid-base disorders.
xii. Indications for obtaining an arterial blood gas.
xiii. The types of fluid preparations to use in the treatment of fluid and electrolyte disorders.

b) Skills**:** Students should demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:
    - Eliciting appropriate information from patients with volume overload, including recent weight gain, edema or ascites, symptoms of heart failure, dietary sodium intake, changes

in medications, noncompliance and intravenous fluid regimens.
- Eliciting appropriate information from patients with volume depletion, including recent weight loss, thirst, gastrointestinal losses, urinary losses, oral intake, insensible losses, and intravenous fluid regimens.
- Eliciting appropriate information from patients with electrolyte problems, including use of diuretics and other medications, gastrointestinal losses, and history of relevant medical conditions (e.g., heart failure, liver disease, renal disease, pulmonary disease, central nervous system disease, and malignancy).

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
- Measurement of orthostatic vital signs.
- Identification of signs of volume overload including peripheral edema, pulmonary edema, ascites, edema.
- Identification of signs of volume depletion including tachycardia, orthostatic hypotension, dry mucous membranes, poor skin turgor.
- Identification of signs of sodium disorders including lethargy, weakness, encephalopathy, delirium, seizures.
- Identification of signs of potassium disorders including weakness, fatigue, constipation, ileus, cramping, tetany, hypo- or hyperreflexia.
- Identification of signs of calcium disorders including cramping, tetany, Chvostek's and Trousseau's sign, seizures, anorexia, constipation, polyuria, hypo- or hyperreflexia, stupor, coma.

iii. Laboratory interpretation**:** Students should be able to recommend when to order diagnostic and laboratory tests as listed below and be able to interpret results
- Serum electrolytes, urea, creatinine.
- Anion gap.
- Arterial blood gases.
- Serum and urine osmolality.
- Urinary sodium.
- Fractional excretion of sodium.
- ECG findings in hyper- and hypokalemia.
- Serum urea to creatinine ratio.
- CBC, ferritin.
- Performing and interpreting a urinalysis, including microscopic examination for casts, red blood cells, white blood cells, and crystals.
- Calculating creatinine clearance using the Cockcroft-Gault or MDRD "modification of diet in renal disease study") equations.
- Serum parathyroid hormone level.
- Renal ultrasonography.

iv. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
- Writing appropriate fluid orders for the treatment of hypo- and hypervolemia, hypo- and hypernatremia, hypo- and hyperkalemia, hypo- and hypercalcemia.
- Writing appropriate orders for replacing sodium, potassium, calcium, phosphates, and magnesium.
- Writing appropriate orders for correcting hyperkalemia, hypercalcemia, hyperphosphatemia and hypermagnesemia.
- Calculating the water deficit that needs to be corrected to treat hypernatremia.
- Identifying indications for administration of bicarbonate.

- Designing an appropriate management plan for initial management of ARF, including volume management, dietary recommendations, drug dosage alterations, electrolyte monitoring, and indications for dialysis.
- Developing a management plan to effectively treat HTN and DM.
- Recommending treatment with phosphate binders, calcium replacement, and vitamin D replacement.
- Recommending treatment for anemia secondary to CKD.
- Recommending acute treatment for hyperkalemia.
- Determining when to obtain consultation from a nephrologist.
- Using a cost-effective approach based on the differential diagnosis.
- Accessing and utilizing appropriate information systems and resources to help delineate issues related to renal failure.
- Incorporating patient preferences.

H. Acute Kidney Injury and Chronic Kidney Disease

a) Knowledge: Students should be able to define, describe and discuss:

i. The distinction between the three major pathophysiologic etiologies for acute renal failure (ARF):
- Decreased renal perfusion (prerenal).
- Intrinsic renal disease (renal).
- Acute renal obstruction (postrenal).

ii. The pathophysiology of the major etiologies of "prerenal" ARF, including:
- Hypovolemia.
- Decreased cardiac output.
- Systemic vasodilation.
- Renal vasoconstriction.

iii. The pathophysiology of the major etiologies of intrinsic "renal" ARF, including:
- Vascular lesions.
- Glomerular lesions.
- Interstitial nephritis.
- Intra-tubule déposition/obstruction.
- Acute tubular necrosis (ATN).

iv. The pathophysiology of the major etiologies of "postrenal" ARF, including:
- Urethral (e.g., tumors, calculi, clot, sloughed papillae, retroperitoneal fibrosis, lymphadenopathy).
- Bladder neck (e.g., tumors, calculi, prostatic hypertrophy or carcinoma, eurogenic).
- Urethral (e.g., stricture, tumors, obstructed indwelling catheters).

v. The pathophysiology and clinical findings of uremia.

vi. The natural history, initial evaluation and treatment, and complications of ARF.

vii. The most common etiologies of chronic kidney disease (CKD):
- DM.
- Hypertension.
- Glomerulonephritis.
- Polycystic kidney disease.
- Autoimmune diseases (e.g., systemic lupus erythematosus).

viii. The staging scheme for CKD.

ix. The significance for proteinuria in CKD.

x. The use of ACE-Is and ARBs in the management of CKD.

xi. The importance of secondary hyperparathyroidism in CKD.

xii. The pathophysiology of anemia in CKD.

xiii. The value of glycemic and hypertension control in limiting the progression of CKD.
xiv. The value of CAD risk factor modification in patients with CKD, particularly those treated with dialysis.
xv. The basic principles of renal replacement therapy (e.g., hemodialysis and peritoneal dialysis) as well as the complications.

b) Skills: Students should demonstrate specific skills, including:
   i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:
      - Eliciting an age-appropriate history that distinguishes among the three major reasons for ARF (pre-renal, renal, post-renal), including the predisposing conditions, nephrotoxic drugs or agents, and systemic disease and the major causes of CKD.
      - Eliciting appropriate information from patients with volume overload, including recent weight gain, edema or ascites, symptoms of heart failure, dietary sodium intake, changes in medications, noncompliance and intravenous fluid regimens.
      - Eliciting appropriate information from patients with volume depletion, including recent weight loss, thirst, gastrointestinal losses, urinary losses, oral intake, insensible losses, and intravenous fluid regimens.
   ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
      - The determination of a patient's volume status through estimation of the central venous pressure using the height of jugular venous distention and measurement of pulse and blood pressure in the lying/standing position.
      - Palpation and percussion of the bladder to recognize bladder distention.
      - Palpation of the prostate.
      - Determination of the presence of pulmonary edema, peripheral edema, ascites, and signs of heart failure.
      - Findings consistent with uremia.
      - Examination for evidence of systemic disease, including but not limited to: skin, joints, and nails.
   iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history, physical exam, and laboratory findings that distinguish between:
      - Acute Renal Failure and Chronic Kidney Disease
   iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them when appropriate.
      - Serum electrolytes, urea, creatinine.
      - Anion gap.
      - Arterial blood gases.
      - Serum and urine osmolality.
      - Urinary sodium.
      - Fractional excretion of sodium.
      - ECG findings in hyper- and hypokalemia.
      - Serum urea to creatinine ratio.
      - CBC, ferritin.
      - Performing and interpreting a urinalysis, including microscopic examination for casts, red blood cells, white blood cells, and crystals.
      - Calculating creatinine clearance using the Cockcroft-Gault or MDRD ("modification of diet in renal disease study") equations.
      - Serum parathyroid hormone level.
      - Renal ultrasonography.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:

- hypercalcemia, hyperphosphatemia.
- Identifying indications for administration of bicarbonate.
- Designing an appropriate management plan for initial management of ARF, including volume management, dietary recommendations, drug dosage alterations, electrolyte monitoring, and indications for dialysis.
- Developing a management plan to effectively treat HTN and DM.
- Recommending treatment with phosphate binders, calcium replacement, and vitamin D replacement.
- Recommending treatment for anemia secondary to CKD.
- Recommending acute treatment for hyperkalemia.
- Determining when to obtain consultation from a nephrologist.

I. Gastrointestinal Bleeding

a) Knowledge: Students should be able to define, describe, and discuss:

i. The common causes for and symptoms of upper and lower gastrointestinal blood loss, including:

- Esophagitis/esophageal erosions.
- Mallory Weiss tear.
- Peptic and duodenal ulcer disease.
- Esophageal/gastric varices.
- Erosive gastritis.
- Arteriovenous malformations.
- Gastrointestinal tumors, benign and malignant.
- Diverticulosis.
- Ischemic colitis.
- Hemorrhoids.
- Anal fissures.

ii. The distinguishing features of upper versus lower GI bleeding.

iii. The indications for inpatient versus outpatient evaluation and treatment.

iv. The principles of stabilization and treatment of acute massive GI blood loss.

v. The role of contributing factors in GI bleeding such as H. pylori infection; NSAIDs, alcohol, cigarette use, coagulopathies; and chronic liver disease.

b) Skills: Students should demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate history that differentiates among etiologies of disease, including:

- Features that distinguish upper from lower GI bleeding.
- Quantification of degree of blood loss.
- Chronology and duration of bleeding.)
- Associated symptoms.
- Relevant past medical history.
- Medication history, including use of tobacco and alcohol.

ii. Physical exam skills: Students should be able to perform a physical examination to establish the diagnosis and severity of disease, including:

- Postural blood pressure and pulse.
- Abdominal palpation for organomegaly, masses, and tenderness.
- Search for stigmata of chronic liver disease.
- Anal and rectal examination.

iii. Differential diagnosis: Students should be able to generate a differential diagnosis recognizing specific history and physical examination findings that suggest a specific etiology for GI bleeding.
iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences. Laboratory and diagnostic tests should include, when appropriate:
    - Stool and gastric fluid tests for occult blood.
    - CBC.
    - PT/PTT.
    - Hepatic function panel.
    - Tests for Helicobacter pylori.
    - Students should be able to define the indications for and interpret (with consultation) results of:
        - Esophagogastroduodenoscopy (EGD).
        - Colonoscopy.
        - Barium studies of the gastrointestinal tract.
v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
    - Establishing adequate venous access.
    - Administering crystalloid fluid resuscitation).
    - Ordering blood and blood product transfusion.
    - Determining when to obtain consultation from a gastroenterologist or a general surgeon.
    - Accessing and utilizing appropriate information systems and resources to help delineate issues related to gastrointestinal bleeding.
    - Outlining long-term management when appropriate (e.g., Helicobacter pylori eradication, antacid, H-2 blocker or proton pump inhibitor therapy, smoking /alcohol cessation, NSAID restriction, and dietary modification.

J. Upper Respiratory Complaints

a) Knowledge: Students should be able to define, describe, and discuss:
i. A rational approach to the common URIs: nasal congestion, rhinorrhea, facial pain/tenderness, cough, sputum production, sore throat, and ear pain.
ii. Common constitutional symptoms that accompany URIs: generalized weakness, fatigue, malaise, headache, mild myalgias, and modest fever.
iii. The microbiology of URIs, highlighting the relative frequencies of viral and bacterial etiologies.
iv. The most common microbiologic agents that cause the common URIs.
v. The pathophysiology and typical clinical presentation of the common URIs:
    - Common cold.
    - Acute bronchitis.
    - Pharyngitis.
    - Acute sinusitis.
    - Otitis media.
vi. The pathophysiologic similarities between the common cold and acute sinusitis.
vii. The clinical features and microbiology of acute compared to chronic sinusitis.
viii. The pathophysiology and symptomatology of allergic rhinitis and the clinical features that may help differentiate it from the common cold and acute sinusitis.
ix. The clinical features that may help differentiate the common URIs from influenza.
x. The pathophysiology and clinical features of acute compared to chronic bronchitis.
xi. The pathophysiology and clinical features of acute bronchitis compared to pneumonia.

xii. The pathophysiology and clinical features of otitis media and Eustachian tube malfunction.
xiii. The signs and symptoms that may help distinguish viral from bacterial pharyngitis.
xiv. Symptomatic treatment for URIs and the major side effects/contraindications for these treatments.
xv. The general role of antibiotics in the treatment of URIs and specific evidence-based indications for them.
xvi. The basic elements of the treatment of allergic rhinitis.
xvii. The use of antiviral agents in the prophylaxis and treatment of influenza.

b) Skills: Students should be able to demonstrate specific skills, including:

- History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:
- The predominant symptom (nasal congestion/rhinorrhea, purulent nasal discharge with facial pain/tenderness, sore throat, cough with or without sputum, sore throat or ear pain).
- Constitutional symptoms.
- Symptoms of potential pneumonia.
- History of or symptoms of serious cardiopulmonary diseases (e.g., asthma, chronic obstructive pulmonary disease, congestive heart failure) that may alter the treatment plan.

i. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:

- Examination of the nasal cavity, pharynx, and sinuses.
- Otoscopic examination.
- Evaluation of the head and neck for lymphadenopathy.
- Auscultation of the lungs to distinguish pulmonary consolidation, pleural effusion, pulmonary congestion, and chronic obstructive pulmonary disease.

ii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology of upper respiratory complaints:

- Common cold.
- Acute sinusitis.
- Chronic sinusitis.
- Allergic rhinitis.
- Pharyngitis.
- Otitis media.
- Otitis external.
- Acute bronchitis.
- Chronic bronchitis.
- Influenza.
- Pneumonia.
- Infectious mononucleosis.

iii. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences Laboratory and diagnostic tests should include, when appropriate:

- CBC with differential.
- Rapid strep test.
- Throat culture.
- Chest radiograph.

- PFTs.
- Monospot/heterophile antibody.

iv. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
    - Determining when to obtain a chest radiograph.
    - Determining when to prescribe antibiotics.
    - Selecting the most appropriate antibiotic for acute bacterial sinusitis, streptococcal pharyngitis, and bacterial otitis media.
    - Prescribing symptomatic treatments.
    - Determining when to obtain consultation from an allergist, otolaryngologist, or pulmonologist.
    - Using a cost-effective approach based on the differential diagnosis.
    - Accessing and utilizing appropriate information systems and resources to help delineate issues related to URIs. .

K. Acute Myocardial Infarction

a) Knowledge: Students should be able to define, describe, and discuss:

i. The primary and secondary prevention of ischemic heart disease through the reduction of cardiovascular risk factors (e.g., controlling hypertension and dyslipidemia, aggressive diabetes management, avoiding tobacco, and aspirin prophylaxis).
ii. The basic principles of the role of genetics in CAD.
iii. Pathogenesis, signs, and symptoms of the acute coronary syndromes:
    - Unstable angina.
    - Non-ST-elevation myocardial infarction (NSTEMI).
    - ST-elevation myocardial infarction (STEMI).
iv. Atypical presentations of cardiac ischemia/infraction.
v. The typical clinical course of the acute coronary syndromes.
vi. ECG findings and macromolecular markers (myoglobin, CK-MB, Troponin-I, Troponin-T) of acute ischemia/MI.
vii. The utility of echocardiography in acute MI.
viii. The importance of monitoring for and immediate treatment of ventricular fibrillation in acute MI.
ix. Therapeutic options for acute MI and how they may differ for NSTEMI and STEMI, including:
    - Aspirin.
    - Morphine.
    - Nitroglycerine.
    - Oxygen.
    - Heparin.
    - Antiplatelet agents (glycoprotein IIb/IIIa inhibitors).
    - Beta-blockers.
    - ACE-I/ARB.
    - HMG-CoA reductase inhibitors.
    - Thrombolytic agents.
    - Emergent cardiac catheterization with percutaneous coronary intervention.
x. Pathogenesis, signs, and symptoms of the complications of acute MI, including arrhythmias, reduced ventricular function, cardiogenic shock, pericarditis, papillary muscle dysfunction/rupture, acute valvular dysfunction, and cardiac free wall rupture.
xi. The general approach to the evaluation and treatment of ventricular tachycardia and fibrillation.
xii. The importance of post-MI risk stratification, including the burden of residual coronary disease and assessment of left ventricular function.

xiii. Basic principles of cardiac rehabilitation.
xiv. Indications for coronary artery bypass grafting (CABG).

b) Skills: Students should be able to demonstrate specific skills, including:
   i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:
      - Cardiac risk factors.
      - Location, duration, intensity, exacerbating/ameliorating factors, radiation of chest pain.
      - Symptoms associated with chest pain (e.g., nausea, emesis, dyspnea, diaphoresis, palpitations, dizziness, syncope, heartburn belching, etc.).
   ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease including:
      - Recognition of dyspnea and anxiety.
      - Accurate measurement of vital signs.
      - Examination of the heart and vascular system.
      - Examination of the lungs.
   iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology of chest pain:
      - Stable angina.
      - Coronary vasospasm.
      - Unstable angina.
      - Acute MI.
      - Pericarditis.
      - Aortic dissection.
      - Pulmonary embolism.)
      - Other noncardiac causes of chest pain.
   iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, when appropriate:
      - ECG.
      - Chest radiograph.
      - Macromolecular markers (myoglobin, CK-MB, Troponin-I, Troponin-T).
      - Students should be able to define the indications for and interpret (with consultation) the results of:
      - Echocardiogram.
      - Cardiac stress testing.
      - Coronary angiography.
   v. Communication skills: Students should be able to:
      - Communicate the diagnosis, treatment plan, and subsequent follow-up to patients.
      - Elicit questions from the patient and his or her family about the diagnostic and management plan.
      - Educate patients about modifying cardiac risk factors
   vi. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
      - Medical management of acute MI.
      - CCU monitoring.
      - Indications for and complications of thrombolytic therapy, cardiac catheterization with percutaneous coronary intervention, and CABG.
      - Proper pre-discharge risk stratification.

- Secondary risk factor modification.
- Determining when to obtain consultation from a cardiologist and cardiothoracic surgeon.
- Using a cost-effective approach based on the differential diagnosis.
- Accessing and utilizing appropriate information systems and resources to help delineate issues related to acute MI.
- Incorporating patient preferences.

L. Common Cancers

a) Knowledge: Students should be able to define, describe, and discuss:

i. Primary prevention measures for common cancers.
ii. Current screening recommendations for skin, colorectal, lung, breast, cervical, and prostate cancer.
iii. Principle clinical presentations, clinical courses, complications, and causes of death for the most common cancers (e.g., skin, colorectal, lung, breast, cervical, and prostate).
iv. Basic methods of initial evaluation, including the sensitivity and specificity of basic diagnostic studies and indication for their use, including:
    - Indications for skin biopsy in a patient with a suspicious skin lesion.
    - Indications for colonoscopy in individuals a risk for colon cancer.
    - Indications for breast biopsy in a patient with a breast nodule or abnormal screening mammogram.
    - Indications for a lymph node biopsy in a patent with suspicious lymphadenopathy.
    - Initial cost-effective workups for: isolated pleural effusion, pulmonary nodule, liver nodule, prostate nodule, elevated prostate-specific antigen, testicular nodule, stool test positive for occult blood, abnormal Pap smear, and other findings suggestive of gastrointestinal and urogenital cancers.
v. Genetic considerations of selected cancers (e.g., hereditary nonpolyposis colon cancer, familial adenomatous polyposis, BRCA1/BRCA2, HER2, Philadelphia chromosome/BRC-ABL).
vi. The role of human papilloma virus in cervical cancer.
vii. The similarities and differences between curative and palliative cancer care.
viii. The principles of palliative care and hospice care.
ix. Symptoms sometimes seen during end-of-life care and the basic principles of their management (e.g., pain, dyspnea, nausea and vomiting, anorexia, fatigue, depression, delirium, constipation).

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:
    - Unintentional weight loss, fever, bone pain.
    - Sun exposure history, abnormal skin lesions.
    - Blood in the stool, alterations in bowel movements, abdominal pain, abdominal mass.
    - Smoking, cough, hemoptysis, chest pain, dyspnea.
    - Breast nodules and secondary signs of breast cancer.
    - Abnormal vaginal bleeding.
    - Abnormal urinary symptoms.
    - Lymphadenopathy.
ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
    - Skin examination.
    - Digital rectal examination.
    - Breast examination.

- Lymph node examination.
- Male genital examination and prostate examination.
- Pelvic examination and Pap smear.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology for:
- Unintentional weight loss.
- Fever.
- Abnormal skin lesions.
- Occult blood positive stool.
- Colorectal mass.
- Chronic cough, hemoptysis, pulmonary nodule, and pleural effusion.
- Breast mass.
- Abnormal Pap smear.
- Abdominal or pelvic mass.
- Prostate nodule and elevated prostate specific antigen.
- Lymphadenopathy.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences. Laboratory and diagnostic tests should include, when appropriate:
- CBC.
- Electrolytes, BUN/Cr, Ca, hepatic function panel.
- Stool occult blood testing.
- PSA. Students should be able to define the indications for and interpret (with consultation) the significance of the results of:
    - Skin biopsy.
    - Mammogram.
    - Breast biopsy.
    - Colon/rectal biopsy.
    - Lung biopsy.
    - Prostate biopsy.
    - Lymph node biopsy.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
- Initial work-up of the symptom, sign, or abnormal laboratory value suspected to be due to cancer.
- Provision of support and information for the patient.
- Coordination of care for workup.
- Determining when to obtain consultation from appropriate specialists.
- Appropriately assessing and treating pain when necessary with non-narctoic and narcotic analgesics.
- Anticipating and treating narcotic side effects if necessary.
- Adjusting the therapeutic plan when goals of care change (e.g., a shift toward palliative care).
- Alleviation of symptoms sometimes seen during end of life care (e.g., pain, dyspnea, nausea and vomiting, anorexia, fatigue, depression, delirium, constipation).
- Utilizing supportive care or hospice service when appropriate.

M. COPD/Obstructive Airways Disease

a) Knowledge: Students should be able to define, describe, and discuss:

i. The epidemiology, risk factors, symptoms, signs, and typical clinical course of the common forms of COPD, including chronic bronchitis and emphysema.

ii. Common causes of acute exacerbations of COPD (AECOPD), including:

- Acute infectious bronchitis.
- Pneumonia.
- Pulmonary edema.
- Poor air quality (e.g., ozone, pollutants, tobacco smoke).
- Occupational exposures.
- Medical noncompliance.

iii. The etiology, pathogenesis, evaluation, and management of hypoxemia and hypercapnia.

iv. The genetics and role of alpha-1 antitrypsin deficiency in some patients with emphysema.

v. The epidemiology, risk factors, symptoms, signs, and typical clinical course of asthma.

vi. Allergic and non-allergic factors that may precipitate bronchospasm and exacerbate asthma, including:

- Grass and tree pollen.
- Animal dander.
- Cockroaches.
- Dust mites.
- Allergic rhinitis/post-nasal drip.
- Acute/chronic infectious sinusitis.
- Acute infectious bronchitis.
- Pneumonia.
- Pulmonary edema.
- Exercise.
- Anxiety/stress.
- Poor air quality (e.g., ozone, pollutants, tobacco smoke).
- Occupational exposures.
- Medical noncompliance.

vii. Therapies for COPD and asthma, including:

- Beta-agonist bronchodilators.
- Anticholinergic bronchodilators.
- Leukotriene inhibitors.
- Mast cell stabilizers.
- Theophylline.
- Inhaled corticosteroids.
- Systemic corticosteroids.
- Antimicrobial agents.
- Supplemental oxygen.
- Immunotherapy.

viii. The indications for and the efficacy of influenza and pneumococcal vaccines.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease including:

- Existence, duration, and severity of dyspnea, orthopnea, paroxysmal nocturnal dyspnea, cough, sputum production, wheezing, fever, chills, sweats, chest pain, hemoptysis.
- Smoking history and passive exposure to tobacco smoke.
- Occupational history.

- Family history of pulmonary problems.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease including:
    - Accurately determining respiratory rate and level of respiratory distress.
    - Assessing the use of accessory muscles for breathing.
    - Identifying bronchial breath sounds, rales, rhonchi, and wheezes.
    - Identifying signs of pulmonary consolidation, pleural effusion, and pneumothorax.
    - Identifying the signs of pulmonary hyperresonance/hyperexpansion.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a diagnosis of chronic bronchitis, emphysema, asthma, or other conditions with similar findings.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences. Laboratory and diagnostic tests should include, when appropriate:
    - Pulse oximitry.
    - ABG.
    - Chest radiograph.
    - Pulmonary function tests.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
    - The use of bronchodilators and inhaled corticosteroids.
    - The key components of the care of patients admitted with acute exacerbations of COPD and asthma.
    - Using systemic corticosteroids appropriately.
    - Judicious use of antimicrobial agents.
    - The principles of oxygen therapy.
    - Determining when to obtain consultation from a pulmonologist or allergist/immunologist.
    - Smoking cessation strategies.

N. Diabetes Mellitus

a) Knowledge: Students should be able to define, describe, and discuss:

i. Diagnostic criteria for impaired fasting glucose and impaired glucose tolerance.

ii. Diagnostic criteria for type I and type II diabetes mellitus, based on a history, physical examination, and laboratory testing.

iii. Pathophysiology, risk factors, and epidemiology of type I and type II diabetes mellitus.

iv. The basic principles of the role of genetics in diabetes mellitus.

v. Presenting symptoms and signs of type I and type II diabetes mellitus.

vi. Presenting symptoms and signs of diabetic ketoacidosis (DKA) and nonketotic hyperglycemic (NKH).

vii. Pathophysiology for the abnormal laboratory values in DKA and NKH including plasma sodium, potassium, and bicarbonate.

viii. Precipitants of DKA and NKH.

ix. Major causes of morbidity and mortality in diabetes mellitus (coronary artery disease, peripheral vascular disease, hypoglycemia, DKA, NKH coma, retinopathy, neuropathy—peripheral and autonomic, nephropathy, foot disorders, infections).

x. Laboratory tests needed to screen, diagnose, and follow diabetic patients including: glucose, electrolytes, blood urea nitrogen/creatinine, fasting lipid profile, HgA1c, urine microalbumin/creatinine ratio, urine dipstick for protein

xi. Non-pharmacologic and pharmacologic (drugs and side effects) treatment of diabetes mellitus to

maintain acceptable levels of glycemic control, prevent target organ disease, and other associated complications.

xii. The specific components of the American Diabetes Association (ADA) dietary recommendations for type I and type II diabetes mellitus.

xiii. Basic management of diabetic ketoacidosis and nonketotic hyperglycemic states, including the similarities and differences in fluid and electrolyte replacement.

xiv. Basic management of blood glucoses in the hospitalized patient.

xv. The Somogyi effect and the Dawn phenomenon and the implications of each in diabetes pharmacologic management.

xvi. Basic management of hypertension and hyperlipidemia in the diabetic patient.

b) Skills: Students should be able to demonstrate specific skills including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:

- Weight changes.
- Hypo- or hyperglycemic symptoms.
- Medication history (adherence, side effects, other medications).
- Home glucose monitoring results.
- Target organ disease complications (cardiovascular, foot, gastrointestinal, infectious, neurological, sexual, skin, urinary, or vision symptoms).
- Diet history (total caloric intake, intake of sugar-containing foods, intake of saturated fat and cholesterol, physical activity level, timing of meals).

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:

- Skin examination for diabetic dermopathy, furuncles/carbuncles, candidiasis, necrobiosis lipoidica diabeticorum, dermatophytosis, and acanthosis nigricans.
- Fundoscopic exam.
- Arterial pulses.
- Peripheral nerves (e.g., monofilament testing).
- Examination of the feet for corns, calluses, and ulcerations.
- In patients with DKA or NKH evaluate for mental status alterations, Kussmaul's respirations, fruity breath, and signs of volume depletion.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology for:

- Hyperglycemia.
- Hypoglycemia.
- Anion gap acidosis.
- Ketosis.
- Hyperosmolality.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences Laboratory and diagnostic tests should include, when appropriate:

- Fasting serum GLC.
- Electrolytes, BUN/Cr.
- Serum and urine ketones.
- Serum and urine osmolality.
- HbA1c.
- Fasting lipid profile.

- UA.
- Urine microalbumin/creatinine ratio.
- 24-hour urine for protein and creatinine clearance.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
   - Writing appropriate fluid and insulin orders and outline critical steps for the treatment of DKA and DKH.
   - Counseling patients regarding basic features of ADA diabetic diet recommendations.
   - Instructing patients in home blood glucose monitoring.
   - Counseling patients on behavior changes (smoking cessation, medication adherence, poor glycemic control, obesity, hypertension, dyslipidemia, and infection) to avoid the complications of diabetes.
   - Counseling patients regarding basic foot care.
   - Determining when to institute diet therapy, oral hypoglycemic agents, and insulin therapy.
   - Calculating an appropriate insulin dose for a diabetic patient.
   - Using community resources (ADA, hospital and community-based education programs) to aid the patient in understanding and managing his or her illness.
   - Determining when to obtain consultation from an endocrinologist, nephrologist, ophthalmologist, podiatrist, and dietician.

O. Heart Failure

a) Knowledge: Students should be able to define, describe, and discuss:

i. Types of processes and most common disease entities that cause HF (i.e., ischemic, valvular, hypertrophic, infiltrative, inflammatory, etc.).
ii. The basic role of genetics in certain forms of cardiomyopathy.
iii. Staging system for heart failure:
   - Stage A: high risk for HF but no structural heart disease is present.
   - Stage B: structural heart disease is present but never any symptoms.
   - Stage C: past or current symptoms associated with structural heart disease.
   - Stage D: end-stage disease with requirements for specialized treatment.

iv. Types of processes that cause systolic vs. diastolic dysfunction.
v. Symptoms and signs of left-sided vs. right-sided heart failure.
vi. Compensatory mechanisms of heart failure including cardiac remodeling and activation of endogenous neurohormonal systems.
vii. Factors leading to symptomatic exacerbation of HF, including ischemia, arrhythmias, hypoxemia, anemia, fever, hypertension, thyroid disorders, non-compliance with medications and dietary restrictions and use of nonsteroidal anti-inflammatory drugs.
viii. Importance of age, gender and ethnicity on the prevalence and prognosis of HF.
ix. Physiological basis and scientific evidence supporting each type of treatment, intervention, or procedure commonly used in the management of patients who present with HF.
x. The general approach to the evaluation and treatment of atrial fibrillation .
xi. Role of critical pathways or practice guidelines in delivering high-quality, cost effective care for patients presenting with new or recurrent heart failure.
xii. The Centers for Medicare & Medicaid Services (CMS) and the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) quality measures for HF treatment.

b) Skills: Students should be able to demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, including:

- Differentiating between various etiologies of heart failure (answers the question: Why is the patient in heart failure?).
- Identifying clinical factors responsible for symptomatic exacerbation (answers the question: Why is the patient worse now?).
- Exercise intolerance (fatigue, dyspnea on exertion).
- Fluid retention (peripheral edema, dyspnea).
- Changes in sleep pattern (orthopnea, paroxysmal nocturnal dyspnea [PND], nocturia).
- Assessing the functional capacity of patients with HF (walking distance, New York Heart classification).
- Cardiac risk factors.

ii. Physical exam skills: Students should be able to perform a focused physical exam to help establish the diagnosis of HF and estimate its severity:

- Measurement of vital signs including weight and respiratory rate/pattern.
- Accurate measurement of arterial blood pressure and recognition of the typical blood pressure findings that occur in patients with aortic stenosis, aortic insufficiency and pulsus paradoxus.
- Assessment of major arterial pulses for abnormalities, including bruits.
- Assessment of the neck veins for jugular venous distention and, when necessary, evaluation for abdominal jugular reflux.
- Assessment of the conjunctiva and optic fundus.
- Assessment of the extremities to ascertain for skin conditions, including color, temperature and the presence of edema, cyanosis or clubbing.
- Assessment of the lungs for crackles, rhonchi and decreased breath sounds.
- Inspection and palpation of the anterior chest to identify right and left sided heaves, lifts and thrills.
- Auscultation of the heart to determine rhythm, intensity of heart sounds, splitting of S2 and the presence of rubs, gallops (S3, S4, summation) or extra heart sounds (e.g., clicks).
- Auscultation of the heart to detect the presence of heart murmurs; when a murmur is present, students should be able to:
- Identify timing (systolic vs. diastolic, holosystolic vs. ejection).
- Describe pitch, location and pattern of radiation.
- Gauge significance (innocent vs. pathologic, sclerosis vs. stenosis).
- Assessment of the abdomen to determine the presence of hepatomegaly, ascites, abnormal pulsations and bruits.

iii. Differential diagnosis**:** Students should be able to generate a prioritized differential diagnosis and recognize specific history, physical exam and/or laboratory findings that:

- Help support or refute a clinical diagnosis of heart failure.
- Distinguish between various underlying etiologies of HF, including disease processes that primarily affect:
  - Pericardium (constrictive pericarditis, pericardial tamponade).
  - Endocardium (valvular [congenital, acquired], endocarditis).
  - Myocardium (hypertrophic, restrictive, congestive).

iv. Laboratory interpretation: Students should be able interpret specific diagnostic tests and procedures that are commonly ordered to evaluate patients who present with heart failure. Test interpretation should take into account: Laboratory and diagnostic tests should include, when appropriate:

- 12-lead ECG.
- Chest radiograph.

- Students should be able to define the indications for, and interpret (with consultation) the results of the following diagnostic tests and procedures:

- Echocardiography.
- Treadmill and nuclear exercise testing.
- Radionuclide ventriculogram.
- Cardiac.
- Coronary angiography.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
    - Recognize the importance of early detection and treatment of risk factors that may lead to the development of heart failure.
    - Identifying the indications, contraindications, mechanisms of action, adverse reactions, significant interactions, and relative costs of the following treatments/interventions:
        - Non-pharmacological management.
        - Sodium restriction.
        - Physical activity and limitations.
        - Pharmacological management (recommended for routine use).
        - Diuretics.
        - ACE-I/ARB.
        - Beta-blockers.
        - Aldosterone antagonists (spironolactone, eplerenone).
        - Digoxin.
    - Developing a timely and appropriate evaluation and treatment plan for patients with heart failure due to diastolic dysfunction, including:
        - Control of physiologic factors (blood pressure, heart rate).
        - Reduction in central blood volume by judicious use of diuretics.
        - Alleviation of myocardial ischemia.
        - Use of calcium channel blockers.
    - Describing use of other agents and interventions that may be useful in treating patients with refractory, end-stage heart failure:
        - Intravenous vasodilators.
        - Intravenous positive inotropic agents.
        - Infusion of B-type natriuretic peptide (nesiritide).
        - Ventricular assist devices.
        - Heart transplantation.
    - Defining and describing how the diagnosis and treatment of HF in special populations may differ (e.g., very elderly, associated co-morbidities).
    - Determining when to consult a cardiologist.
    - Identifying when palliative care may be appropriate for patients with refractory symptoms associated with end-stage disease.

P. Hypertension

a) Knowledge: Students should be able to define, describe and discuss:

i. The etiologies and relative prevalence of primary and secondary hypertension.
ii. The basic principles of the role of genetics in hypertension.
iii. The definition of hypertensive urgency and emergency, citing examples of both.
iv. The difference between essential (primary) and secondary hypertension.
v. Symptoms and signs of the following disorders associated with secondary hypertension:
    - Renovascular hypertension.
    - Renal failure.
    - Polycystic kidney disease.

- Cushing's disease or syndrome.
- Hyperaldosteronism.
- Hyperthyroidism.
- Hypercalcemia.
- Medication, alcohol, and illicit drug use.
- Coarctation of the aorta.
- Sleep apnea.

vi. The manifestations of target-organ disease due to hypertension.
vii. Classification of blood pressure (SBP and DBP for all age 18 or older).
viii. Basic approaches to the pharmacological management of acute and chronic hypertension, including the physiologic basis and scientific evidence supporting these approaches, and causes for lack of responsiveness to therapy.
ix. Prevention strategies for reducing hypertension (including lifestyle factors, such as dietary intake of sodium, weight, and exercise level), and explain the physiologic basis and/or scientific evidence supporting each strategy.
x. Steps in management of patients with a hypertensive emergency.
xi. Factors that contribute to non-adherence with antihypertensive medications.

b) Skills: Students should demonstrate specific skills including:
   i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:
      - Duration and levels of elevated blood pressure.
      - History of symptoms of cardiovascular, cerebrovascular, peripheral vascular or renal disease; diabetes; dyslipidemia; or gout.
      - History of symptoms suggesting secondary hypertension.
      - History of weight gain, leisure-time physical activities, and smoking or other tobacco use.
      - Family history of high blood pressure, premature CHD, stroke, CVD, diabetes mellitus and dyslipidemia.
      - Psychosocial and environmental factors that may elevate blood pressure (family situation, employment status, working conditions, education level).
      - Dietary assessment, including sodium intake and intake of saturated fat and cholesterol.
      - Results and side effects of previous antihypertensive therapy.
      - Use of commonly prescribed, over-the -counter, and illicit medications that may raise blood pressure or interfere with the effectiveness of antihypertensive medications.
      - Alcohol intake.
   ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
      - Blood pressure measurements to detect and confirm the presence of high blood pressure.
      - Examination of the fundus for arteriolar narrowing, arteriovenous nicking, hemorrhages, exudates, or papilledema.
      - Neck for carotid bruits, distended veins, or an enlarged thyroid gland.
      - Heart for increased rate, increased size, precordial heave, clicks, murmurs, arrhythmias, and third (S3) and fourth (S4) sounds.
      - Abdomen for bruits, enlarged kidneys, masses, and abnormal aortic pulsation.
      - Extremities for diminished, delayed, or absent peripheral arterial pulsations, bruits, and edema.
      - Peripheral pulses specifically femoral arterial pulses.
      - Body habitus, looking for changes associated with secondary hypertension.
      - Peripheral and central nervous system for ischemic changes.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history, physical exam, and laboratory findings that suggest a specific etiology of hypertension.

iv. Laboratory interpretation: Students should be able to recommend and interpret diagnostic and laboratory tests, when appropriate:
- UA.
- CBC.
- Blood glucose (fasting if possible).
- Electrolytes, BUN/Cr.
- Uric acid.
- Fasting lipid profile.
- ECG.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
- Treating acute and chronic hypertension.
- Treating primary (essential) hypertension versus secondary hypertension.
- Prescribing preventative strategies to diminish hypertension, including:
  - Accessing and utilizing appropriate information systems and resources

Q. Liver Disease

a) Knowledge: Students should be able to define, describe, and discuss:

i. The biochemical/physiologic/mechanistic approach to hyperbilirubinemia, including:
- Increased production.
- Decreased hepatocyte uptake.
- Decreased conjugation.
- Decreased excretion from the hepatocyte.
- Decreased small duct transport (intrahepatic cholestasis).
- Decreased large duct transport (extrahepatic cholestasis, obstructive jaundice).

ii. The biochemistry and common causes of unconjugated and conjugated hyperbilirubinemia.

iii. The use of serum markers of liver injury (e.g., AST, ALT, GGT, Alk Phos) and function (e.g., bilirubin, ALB, PT/INR) in the diagnostic evaluation of hepatobiliary disease.

iv. The clinical significance of asymptomatic, isolated elevation of AST, ALT, GGT, and/or Alk Phos.

v. The common pathologic patterns of liver disease and their common causes, including:
- Steatosis (fatty liver).
- Hepatitis.
- Cirrhosis.
- Infiltrative.
- Intrahepatic cholestasis.
- Extrahepatic cholestasis (obstructive jaundice).

vi. The epidemiology, symptoms, signs, typical clinical course, and prevention of viral hepatitis.

vii. The distinctions between acute and chronic hepatitis.

viii. The indications for and efficacy of hepatitis A and B vaccinations.

ix. The common causes and clinical significance of hepatic steatosis and steatohepatis.

x. The epidemiology, symptoms, signs, and typical clinical course of autoimmune liver diseases such as autoimmune hepatitis, primary biliary cirrhosis, and primary sclerosing cholangitis.

xi. The epidemiology, symptoms, signs, and typical clinical course of cirrhosis.

xii. The pathophysiologic manifestations, symptoms, signs, and complications of alcohol-induced liver disease.)

xiii. The symptoms, signs, and complications of portal hypertension.

xiv. The pathophysiology and common causes of ascites.
xv. The pathophysiologic manifestations, symptoms, and signs of spontaneous bacterial peritonitis.
xvi. The basic pathophysiology, symptoms, signs, typical clinical course, and precipitants of hepatic encephalopathy.
xvii. The basic pathophysiology, symptoms, signs, and typical clinical course of the hepatorenal syndrome.
xviii. The analysis of ascitic fluid and its use in the diagnostic evaluation of liver disease.
xix. Common causes of drug-induced liver injury.
xx. Genetic considerations in liver disease (i.e., hemochromatosis, Wilson's disease, alpha-1 antitrypsin deficiency, Gilbert's syndrome).
xxi. The epidemiology, pathophysiology, symptoms, signs, and typical clinical course of cholelithiasis and cholecystitis.
xxii. The clinical syndrome of "ascending cholangitis" including its common causes and typical clinical course.
xxiii. The indications for and risks of paracentesis and liver biopsy.
xxiv. The indications for and utility of hepatobiliary imaging studies, including:
- Ultrasound.
- Nuclear medicine studies.
- CT.
- MRI.
- Magnetic resonance cholangiopancreatography (MRCP).
- Endoscopic retrograde cholangiopancreatography (ERCP).

b) Skills: Students should be able to demonstrate specific skills, including:
i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:
- Jaundice, discolored urine, pruritis, light-colored stool, unintentional weight loss, fever, nausea, emesis, diarrhea, altered mental status, abdominal pain, increased abdominal girth, edema, rectal bleeding, hematemesis.
- DM.
- Alcohol use.
- Prescription, over-the-counter, and illicit drug use.
- Transfusions and other sources of potential blood-born pathogen exposure.
- Consumption of uncooked shellfish and other food items potentially contaminated with fecal matter.
- Sexual history.
- Vaccination history.
- Family history of liver diseases.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
- Jaundice.
- Complete abdominal examination including findings consistent with ascites (e.g., bulging flanks, shifting dullness, fluid wave).
- Findings compatible with chronic alcohol use and portal hypertension (e.g., palmar erythema, spider angiomas, gynecomastia, testicular atrophy, Dupuytren's contracture, muscle wasting, splenomegaly, ascites, edema, caput medusa, hemorrhoids).
- Findings compatible with hepatic (portosystemic) encephalopathy (e.g., disturbances of consciousness and behavior, fluctuating neurologic signs, asterixis).

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology of liver disease.
iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and

laboratory tests and be able to interpret them, when appropriate:

- CBC.
- Electrolytes, BUN/Cr, GLC.
- ALB, TP, total bilirubin, direct bilirubin, PT/INR, AST, ALT, Alk Phos.)
- Hepatitis serology.
- Ascitic fluid ALB, amylase, cell counts, staining, cultures, and the serum-ascites albumin gradient (SAAG).
- Students should be able to define the indications for and interpret (with consultation) the results of:
- Ultrasound.
- Nuclear medicine studies.
- CT.

v. Communication skills: Students should be able to:

- Communicate the diagnosis, treatment plan, and subsequent follow-up to the patient and his or her family.
- Elicit input and questions from the patient and his or her family about the management plan.
- Discuss the avoidance of known hepatotoxins.
- Counsel patients regarding alcohol abstinence.
- Discuss the importance of hepatitis A and B vaccinations for nonimmune patients.

vi. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:

- The diagnostic evaluation of asymptomatic, isolated elevation of the transaminases and/or Alk Phos.
- The diagnostic evaluation of patients with jaundice and unconjugated or conjugated hyperbilirubinemia.
- The basic management of steatosis, hepatitis, cirrhosis, intra- and extra hepatic cholestasis, acute cholecystitis, ascites, portal hypertension, spontaneous bacterial peritonitis, and hepatic encephalopathy.
- Determining when to obtain consultation from a gastroenterologist, hepatologist, or biliary surgeon.

R. Nosocomial Infections

a) Knowledge: Students should be able to define, describe, and discuss:

i. The epidemiology and significance of nosocomial infections in the Canada.

ii. The general clinical risk factors for nosocomial infection. including:

- Immunocompromise.
- Immunosuppressive drugs.
- Extremes of age.
- Compromise of the skin and mucosal surfaces secondary to:
    - Drugs.
    - Irradiation.
    - Trauma.
    - Invasive diagnostic and therapeutic procedures.
    - Invasive indwelling devises (e.g., intravenous catheter, bladder catheter, endotracheal tube, etc.).

iii. The major routes of nosocomial infection transmission, including:

- Contact.
- Droplet.

- Airborne.
- Common vehicle.

iv. The epidemiology, pathophysiology, microbiology, symptoms, signs, typical clinical course, and preventive strategies for the most common nosocomial infections, including:
    - Urinary tract infection.
    - Pneumonia.
    - Surgical site infection.
    - Intravascular devised-related bloodstream infections.
    - Skin infections.
    - Health care associated diarrhea.
v. Empiric antibiotic therapy for the most common nosocomial infections.
vi. The epidemiology, pathophysiology, microbiology, symptoms, signs, typical clinical course, and preventive strategies for colonization or infection with the following organisms:
    - Vancomycin-resistant enterococci.
    - Clostridium difficile.
    - Methicillin-resistant Staphylococcus aureus. (MRSA)
    - Multidrug-resistant Gram-negative bacteria.
vii. The crucial importance of judicious antibiotic use.
viii. The effect of widespread use of broad spectrum anti-microbial agents on endogenous body flora and the hospital microbial flora.
ix. The types of isolation procedures and their indications:
    - Standard.
    - Airborne.
    - Contact.
    - Droplet.
x. The Centers for Disease Control and Prevention (CDC) guidelines for hand hygiene.
xi. Preventive strategies for needlestick and sharps injuries intended to reduce the transmission of blood-borne pathogens (hepatitis B, hepatitis C, and HIV.
xii. Local hospital post-exposure (i.e., after an eye/mucous membrane splash, needlestick or other sharps injury) protocols for prompt reporting, evaluation, counseling, treatment, and follow-up.
xiii. The indications, efficacy, and side effects of post-exposure prophylaxis for hepatitis B and HIV/AIDS.
xiv. Negative-pressure ventilation isolation for known or suspected tuberculosis patients.
xv. National Institute for Occupational Safety and Health (NIOSH) approved personal respiratory protective equipment (i.e., N95 respirator) use for the prevention of transmission of Mycobacterium tuberculosis to health care workers.

b) Skills: Students should be able to demonstrate specific skills, including:
i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease in the organ systems likely to be involved with nosocomial infection.
ii. Physical exam skills: Students should be able to perform a physical examination of skin, vascular access sites, lungs, abdomen, wounds, and catheter and drain sites and recognize signs of local or systemic infection.
iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis of the likely sites and organisms involved, recognizing specific history and physical exam findings that suggest a specific etiology.
iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based o the differential diagnosis, including consideration of test cost and performance characteristics as well as

patient preferences. Laboratory and diagnostic tests should include, when appropriate:

- Urinalysis and culture and sensitivities.
- Sputum Gram stain and culture and sensitivities.
- Chest radiograph.
- Wound cultures and sensitivities.
- Clostridium difficile toxin assay.
- Hepatitis serologies.
- HIV ELISA and western blot.
- Sputum AFB staining and culture.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:

- Assessing a hospitalized patient who develops a new fever 48 or more hours after admission.
- Developing a plan for the evaluation and treatment of hospital acquired infection.
- Demonstrating appropriate choice of antimicrobial drugs which considers mechanisms of action, spectrum of activity, pharmacokinetics, drug interactions, and adverse reactions.
- Recognizing when indwelling intravascular and urinary collection devices should be removed.
- Requesting appropriate isolation measures to protect other patients and health care workers.
- Determining when to obtain consultation from an infectious diseases specialist.
- Contacting hospital infection control experts when appropriate.

S. Pneumonia

a) Knowledge: Students should be able to define, describe, and discuss:

i. The epidemiology, pathophysiology, symptoms, signs, and typical clinical course of community-acquired, nosocomial, and aspiration pneumonia and pneumonia in the immunocompromised host.
ii. The conceptualization of “typical” and “atypical” pneumonia and its limitations.
iii. Common pneumonia pathogens (viral, bacterial, mycobacterial, and fungal) in immunocompetent and immunocompromised hosts).
iv. Identify patients who are at risk for impaired immunity.
v. Indications for hospitalization and ICU admission of patient with pneumonia.
vi. The radiographic findings of the various types of pneumonia.
vii. The antimicrobial treatments (e.g., antiviral, antibacterial, antimycobacterial, and antifungal) for community-acquired, nosocomial, and aspiration pneumonia, and pneumonia in the immunocompromised host.
viii. The implications of antimicrobial resistance.
ix. The pathogenesis, symptoms, and signs of the complications of acute bacterial pneumonia including: bacteremia, sepsis, parapneumonic effusion, empyema, meningitis, and metastatic microabscesses.
x. The indications for and complications of chest tube placement.
xi. The indications for and efficacy of influenza and pneumococcal vaccinations.
xii. The indications and procedures for respiratory isolation.
xiii. The Centers for Medicare & Medicaid Services (CMS) and the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) quality measures for community-acquired pneumonia treatment.

b) Skills: Students should be able to demonstrate specific skills including:

i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:

- The presence and quantification of fever, chills, sweats, cough, sputum, hemoptysis,

dyspnea, and chest pain.
- Historical features consistent with potential immunocompromise.
- Potential tuberculosis exposure.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
- Accurately determining respiratory rate and level of respiratory distress.
- Identifying bronchial breath sounds, rales, rhonchi, and wheezes.
- Identifying signs of pulmonary consolidation.
- Identifying signs of pleural effusion.
- Identifying signs of the complications of pneumonia.

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology of pneumonia and other possible diagnoses, including:
- Common cold.
- Acute bronchitis.
- Influenza.
- Acute exacerbation of COPD.
- Asthma exacerbation.
- CHF.
- Pulmonary embolism.
- Aspiration.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them when appropriate:
- CBC.
- Blood cultures.
- ABG.
- Pleural fluid chemistry, cell counts, staining, and culture.
- Chest radiograph.

- Students should be able to define the indications for and interpret (with consultation) the results of:
  - Chest CT.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:
- Selecting an appropriate empiric antibiotic regimen for community-acquired, nosocomial, immunocompromised-host, and aspiration pneumonia, taking into account pertinent patient features.
- Adjusting antimicrobial treatment according to the sputum staining and culture results.
- Recognizing the complications of pneumonia.
- Determining when to obtain consultation from a pulmonologist or infectious diseases specialist.

T. Rheumatoligic Problems

a) Knowledge: Students should be able to define, describe, and discuss:

i. The effect of the time course of symptoms on the potential causes of joint pain (acute vs. subacute vs. chronic).

ii. The difference between and pathophysiology of arthralgia vs. arthritis and mechanical vs. inflammatory joint pain.

iii. The distinguishing features of intra-articular and periarticular complaints (joint pain vs. bursitis and tendonitis).

iv. The effect of the features of joint involvement on the potential causes of joint pain (monoarticular vs. oligoarticular vs. polyarticular, symmetric vs. asymmetric, axial and/or appendicular, small vs. large joints, additive vs. migratory vs. intermittent).
v. Indications for performing an arthrocentesis and the results of synovial fluid analysis.
vi. The pathophysiology and common signs and symptoms of:
    - Osteoarthritis.
    - Crystalline arthropathies.
    - Septic arthritis.
vii. Indications for and effectiveness of intra-articular steroid injections.
viii. Treatment options for gout (e.g., colchicine, NSAIDs, steroids, uricosurics, xanthine oxidase inhibitors).
ix. The basic pathophysiology of autoimmunity and autoimmune diseases.
x. The common signs and symptoms of and diagnostic approach to:
    - Rheumatoid arthritis.
    - Spondyloarthropathies (reactive arthritis/Reiter's syndrome, ankylosing spondylitis, psoriatic arthritis).
    - Systemic lupus erythematosus.
    - Systemic sclerosis.
    - Raynaud's syndrome/phenomenon.
    - Sjögren's syndrome.
    - Temporal arteritis and polymyalgia rheumatica.
    - Other systemic vasculitides.
    - Polymyositis and dermatomyositis.
    - Fibromyalgia.

b) Skills: Students should be able to demonstrate specific skills, including:
i. History-taking skills**:** Students should be able to obtain, document, and present an age-appropriate medical history that differentiates among etiologies of disease, including:
    - Eliciting features of joint complaints:
        - Pain.
        - Stiffness.
        - Location.
        - Mode of onset.
        - Duration.
        - Severity.
        - Exacerbating and alleviating factors.
        - Warmth, redness, and tenderness.
        - Associated nonarticular symptoms.
    - Determining when in the course of acute arthritis it is necessary to obtain a sexual history.
ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
    - A systematic examination of all joints identifying the following abnormal findings:
        - Erythema, warmth, tenderness, and swelling.
        - Effusion.
        - Crepitus.
        - Altered range of motion.
        - Ulnar deviation.
        - Synovial thickening.
        - Joint alignment deformities (e.g., varus and valgus).
        - Muscular bulk, strength, and tenderness.

- Examination of the skin identifying the following abnormal findings:
    - Rheumatoid and tophaceous nodules.
    - Alopecia.
    - Malar rash.
    - Sclerodactyly.
    - Telangiectasias.
    - Raynaud's phenomenon.
    - Psoriasis.
    - Cutaneous manifestations of vasculitis (e.g., palpable purpura).

iii. Differential diagnosis: Students should be able to generate a prioritized differential diagnosis recognizing specific history and physical exam findings that suggest a specific etiology:

- Osteoarthritis.
- Crystalline arthropathies.
- Septic arthritis.
- Rheumatoid arthritis.
- Spondyloarthropathies (reactive arthritis/Reiter's syndrome, ankylosing spondylitis, psoriatic arthritis).
- Systemic lupus erythematosus.
- Systemic sclerosis.
- Raynaud's syndrome/phenomenon.
- Sjörgren's syndrome.
- Temporal arteritis and polymyalgia rheumatica.
- Other systemic vasculitides.
- Polymyositis and dermatomyositis.
- Fibromyalgia.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them when appropriate:

- CBC with differential.
- Synovial fluid analysis (Gram stain, culture, crystal exam, cell count with differential, and glucose).
- Uric acid.
- ESR.
- Rheumatoid factor (RF).
- Antinuclear antibody test (ANA) and anti-DNA test.

- Students should be able to define the indications for and interpret (with consultation) the results of:
    - Plain radiographs of the shoulder, elbow, wrist, hand, hip, knee, ankle, and foot.

v. Management skills: Students should able to develop an appropriate evaluation and treatment plan for patients that includes:

- Selecting appropriate medications for the relief of joint pain.
- Prescribing acute and preventative treatment for crystalline arthropathies.
- Prescribing basic treatment options for septic arthritis.
- Prescribing basic treatment options for systemic rheumatologic conditions.
- Determining when to obtain consultation from a rheumatologist and orthopedic surgeon.

U. Substance Abuse

a) Knowledge: Students should be able to define, describe, and discuss:

i. Presenting signs and symptoms of abuse of the following substances:

- Alcohol.
- Opioids.
- Cocaine.
- Amphetamines.
- Hallucinogens.
- Barbiturates.
- Marijuana.
- Anabolic steroids.
- Benzodiazepines.

ii. Signs, symptoms, risk factors for, and major causes of morbidity and mortality secondary to alcohol and drug abuse, intoxication, overdose, and withdrawal.
iii. Diagnostic criteria for substance abuse, dependency and addiction.
iv. Questions in the CAGE questionnaire:
- Cut down.
- Annoyed/angry.
- Guilty.
- Eye opener.

v. Health benefits of substance abuse cessation.
vi. The potential role of genetics in substance abuse vulnerability.

b) Skills: Students should demonstrate specific skills, including:
i. History-taking skills: Students should be able to obtain, document, and present an age-appropriate medical history, that differentiates among etiologies of disease, including:
- Social history that is elicited in a nonjudgmental, supportive manner, using appropriate questioning (e.g., CAGE questions, etc.).
- Use of injection drugs and shared needles.
- Relevant medication history.
- Immune status.
- Family history of substance abuse.
- Lifestyle factors that will influence patient's access to illicit substances and interfere with ability to enable effective treatment.
- Screening for depression and other psychiatric disease.

ii. Physical exam skills: Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
- Accurate recognition of signs that may indicate intoxication or withdrawal (e.g., behavioral or speech changes, changes in pupil size, conjunctival or nasal injection, tachycardia, sweating, piloerection, yawning, unsteady gait, etc.).
- Examination of the nose for septal perforation as complication of cocaine use.
- Examination of the skin for track marks or signs of needle use.
- Identification of stigmata of secondary disease states (e.g., cirrhosis – splenomegaly, gynecomastia, telangiectasias, caput medusa, etc.).
- Assessing for signs of endocarditis (e.g., fever, murmur, rash, etc).
- Obtaining full mental status examination.

iii. Differential diagnosis: Students should be able to generate a differential diagnosis recognizing history, physical exam and/or laboratory findings to determine the diagnosis of abuse of drugs or alcohol and their sequelae.
iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, when appropriate:
- Blood alcohol level.

- Urine and serum toxicology screens.
- Hepatic function panel.
- Amylase and lipase levels.
- Tests for HIV, hepatitis B and hepatitis C.
- CBC.
- Blood cultures.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan that includes:
- Assessing the patient's motivation for achieving sobriety/abstinence.
- Understanding the principles of acute management of drug/alcohol intoxication and withdrawal versus long-term treatment planning.
- Using Clinical Institute Withdrawal Assessment for Alcohol. (CIWA-Ar) scale in acute alcohol withdrawal to prevent seizures or delirium tremens.
- Recommending appropriate use of benzodiazepines for alcohol withdrawal.
- Determining when to obtain consultation from a psychiatrist.

V. Venous Thromboembolism

a) Knowledge: Students should be able to define, describe and discuss:

i. Risk factors for developing DVT, including:
- Prior history of DVT/PE.
- Immobility/hospitalization.
- Increasing age.
- Obesity.
- Trauma.
- Smoking.
- Surgery.
- Cancer.
- Acute MI.
- Stroke and neurologic trauma.
- Coagulopathy.
- Pregnancy.
- Oral estrogens.

ii. Genetic considerations predisposing to venous thrombosis.

iii. The symptoms and signs of DVT and PE.

iv. The differential diagnosis of DVT including the many causes of unilateral leg pain and swelling:
- Venous stasis and the postphlebitic syndrome.
- Lymphedema.
- Cellulitis.
- Superficial thrombophlebitis.
- Ruptured popliteal cyst.
- Musculoskeletal injury.
- Arterial occlusive disorders.

v. The differential diagnosis of PE including the many causes of chest pain and dyspnea:
- MI/unstable angina.
- Congestive heart failure.
- Pericarditis.
- Pneumonia/bronchitis/COPD exacerbation.
- Asthma.

- Pulmonary hypertension.
- Pneumothorax.
- Musculoskeletal pain (e.g., rib fracture, costochondritis).

vi. Treatment modalities for DVT/PE, including:
- Unfractionated heparin.
- Low-molecular-weight heparin.
- Warfarin.
- Thrombolytics.

vii. The risks, benefits, and indications for inferior vena cava filters

viii. The long-term sequelae of DVT and PE.

ix. Methods of DVT/PE prophylaxis, their indications and efficacy, including:
- Ambulation.
- Graded compression stockings.
- Pneumatic compression devices.
- Unfractionated heparin.
- Low-molecular-weight heparin.
- Warfarin.

b) Skills: Students should demonstrate specific skills, including:

i. History-taking skills: Students should be able to obtain, document and present an age-appropriate medical history that suggests the diagnosis of DVT or PE, including:
- The presence or absence of known risk factors.
- Presence or absence of leg pain, swelling, warmth, discoloration, and palpable cord.
- The presence or absence of dyspnea, chest pain, palpitations, cough, hemoptysis.

ii. Physical exam skills: Students should be able to perform a physical examination to establish the diagnosis and severity of disease, including:
- Assessment of vital signs (i.e., hypotension, tachycardia, tachypnea, fever) and general appearance (i.e., degree of respiratory distress, anxiety).
- Accurate identification of leg swelling, erythema, warmth, and tenderness. Inspection for signs of lower extremity trauma, arthritis, or joint effusion.
- Identification of pleural friction rubs, wheezes, rales, rhonchi, and signs of pneumothorax.

iii. Differential diagnosis: Students should be able to generate a differential diagnosis for a patient suspected of having DVT/PE, recognizing specific history, physical examination and laboratory findings which suggest DVT/PE, including the disease states noted above.

iv. Laboratory interpretation: Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them where appropriate:
- Pulse oximetry.
- 12-lead ECG.
- Chest radiograph.
- ABG.
- D-dimer.

- Students should be able to define the indications for and interpret (with consultation) the results of:
  - Duplex venous ultrasonography.
  - Ventilation perfusion (V/Q) scan.
  - CT angiography.
  - Pulmonary angiography.
  - Echocardiography.

v. Management skills: Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:

- Outlining the acute and long-term treatment of isolated calf vein phlebitis, superficial thrombophlebitis, DVT, and thromboembolism, including appropriate use and monitoring of heparin and warfarin.
- Understanding the indications for placement of inferior vena cava filter, indications and complications of thrombolytic therapy, as well as indications for performing a hypercoaguability work-up.
- Determining when to obtain consultation from a pulmonologist or interventional radiologist.

(c) Basic Skills

Venipuncture, I.V. cannulation, Urinary catheter insertion, Nasogastric tube insertion, ECG recording

(d) Additional Skills

Arterial Puncture, Sigmoidoscopy, Thoracentesis, Lumbar puncture, Bone Marrow aspiration

1) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
2) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
3) Perform a physical examination without causing the patient embarrassment.
4) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
5) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
6) Recognize risk factors and be able to counsel patients on risk reduction.
7) Identify the rights and legal responsibilities of physicians to patients and the community.
8) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
9) Apply the concept of cost-effectiveness to public health interventions.
10) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
11) Determine the validity and applicability of published data through critical appraisal.
12) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
13) Collaborate effectively with patients and families without having to take charge.
14) Demonstrate skill in finding common ground when differences of opinion exist.
15) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
16) Demonstrates the ability to place the needs of patients and families first.
17) Demonstrates honesty and trustworthiness in assessment, study and learning.
18) Demonstrates responsibility and respect.
19) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
20) Be willing to seek help, advice or consultation when needed.
21) Respond to personal and family needs and develop effective support systems
22) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
23) Use the concepts of evidence-based medicine to guide patient care decisions.

24) Identify potential conflict between individual and population interests and seek advice from others.
25) Assess the effectiveness of practice and engage in continuous quality improvement.

These basic skills as listed are considered fundamental for the graduating student. The additional skills are those which are considered highly desirable for the student to have achieved but for which it is recognized that practical opportunities may be limited in the undergraduate curriculum. Students are urged to try to develop expertise in these procedures whenever the opportunity presents itself, recognizing that this opportunity is a function of the services to which they are assigned.

FUNCTIONAL PROGRAM

During an individual clinical elective, the senior Year 4 student will be assigned to a specific clinical service. Where possible, emphasis will be placed on ambulatory medicine, and every effort will be made to avoid the duties of senior Phase IV clerks from overlapping or interfering with the third-year clerkship. The senior Year 4 student's duties may vary from service to service and are clearly set out in the Department of Medicine clinical elective "catalogue" (following). At times, this may involve participation in an "on-call" schedule. The clinical elective supervisor will act as the senior Year 4 student's mentor/advisor and will be responsible for his or her end-of-rotation evaluation.

In general terms, the student will be expected to apply and develop the skills acquired during the clinical clerkship. The Clinical Science Electives programme offers an opportunity for the student to strengthen those skills he/she feels may be weak and to enhance her/his knowledge in areas of interest. These objectives are best served by active participation in patient care, investigation and clinical decision making and an enthusiastic approach to the learning process.

EVALUATION

This will be based on observation of the student's performance. The primary purpose is to help students identify how much they have learned, and how much they have yet to learn. A secondary purpose is to determine whether the student, at the end of the clinical elective, has met minimum requirements of acceptable performance or achieved excellence.

Appraisal of personal-professional attributes in various aspects of clinical skills will be based on the student's performance during the clinical elective. When necessary, the supervisor will discuss strengths or weaknesses with the student during the rotation. At the end of the rotation the supervisor will complete the standard assessment form and forward it (via the Medicine Coordinator) to the Dean's Office.

There is also opportunity for the student to evaluate the clinical elective learning experience. The Dean's Office will be collecting information from you that can guide future students seeking Clinical Science Electives and provide important feedback to clinical elective supervisors about strengths and weaknesses of individual Clinical Science Electives.

Number of Students accepted per block: **1**

NEPHROLOGY

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The 4th-year clinical elective student is encouraged to participate in both the clinical and research activities within the nephrology program. Students are expected to participate in both the inpatient and outpatient activities of the service. Nephrology inpatients are, in general, admitted under one of the general internal medicine teams, with nephrology providing consultative support. Staff provides a nephrology consultative service throughout the hospital. Outpatient clinics occur weekly. Students can expect to encounter a broad range of nephrological patients in both the inpatient and outpatient settings.

Objectives:

A. Fluid and Electrolyte Disorders

1. Knowledge

Students should be able to define, describe and discuss:

c. The pathophysiology of
- Hypo- and hypervolemia
- Hypo- and hypernatremia
- Hypo- and hyperkalemia
- Hypo- and hypercalcemia
- Simple and mixed acid-base disorders
- Respiratory acidosis and alkalosis
- Metabolic acidosis and alkalosis.

d. Presenting symptoms and signs of the above disorders.

o. The importance of total body water and its distribution.

p. The differential diagnosis of hypo- and hypernatremia in the setting of volume depletion, euvolemia, and hypervolemia.

q. How to distinguish hyponatremia from pseudohyponatremia.

r. How to identify spurious hyperkalemia or acidosis-related hyperkalemia.

s. Risks of too rapid or delayed therapy for hyponatremia.

t. The most common causes of respiratory acidosis, respiratory alkalosis, metabolic acidosis and metabolic alkalosis.

u. How to calculate the anion gap and explain its relevance to determining the cause of a metabolic acidosis.

v. Changes in total body water distribution that occur with aging.

w. How altered mental status can contribute to electrolyte disorders.

x. Tests to use in the evaluation of fluid, electrolyte, and acid-base disorders.

y. Indications for obtaining an ABG.

z. The types of fluid preparations to use in the treatment of fluid and electrolyte disorders.

2. Skills

g. History-Taking Skills – students should be able to obtain, document and present an age-appropriate medical history that differentiates among etiologies of disease including:
- Eliciting appropriate information from patients with volume overload, including recent weight gain, edema or ascites, symptoms of heart failure, dietary sodium intake, changes in medications, noncompliance and intravenous fluid regimens.
- Eliciting appropriate information from patients with volume depletion, including recent weight loss, thirst, gastrointestinal losses, urinary losses, oral intake, insensible losses, and intravenous fluid regimens.
- Eliciting appropriate information from patients with electrolyte problems, including use of diuretics and other medications, gastrointestinal losses, and history of relevant medical conditions (e.g., heart failure, liver disease, renal disease, pulmonary disease, central nervous system disease, and malignancy).

h. Physical Exam Skills – students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
   - Measurement of orthostatic vital signs.
   - Identification of signs of volume overload including peripheral edema, pulmonary edema, ascites, edema.
   - Identification of signs of volume depletion including tachycardia, orthostatic hypotension, dry mucous membranes, poor skin turgor.
   - Identification of signs of sodium disorders including lethargy, weakness, encephalopathy, delirium, seizures.
   - Identification of signs of potassium disorders including weakness, fatigue, constipation, ileus, cramping, tetany, hypo- or hyperreflexia.
   - Indentification of signs of calcium disorders including cramping, tetany, Chvostek's and Trousseau's sign, seizures, anorexia, constipation, polyuria, hypo- or hyperreflexia, stupor, coma.

i. Differential Diagnosis – students should be able to generate a prioritized differential diagnosis recognizing specific history, physical exam, and laboratory findings that distinguish between:
   - Hypo- and hypervolemia
   - Hypo- and hypernatremia
   - Hypo- and hyperkalemia
   - Hypo- and hypercalcemia
   - Hypo – and hyperphosphatemia
   - Hypo- and hypermagnesemia
   - Respiratory acidosis and alkalosis
   - Metabolic acidosis and alkalosis.

j. Laboratory Interpretation – Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences. Laboratory and diagnostic tests should include, when appropriate:
   - Serum electrolytes, BUN/Cr
   - Anion gap
   - ABG
   - Serum and urine osmolality
   - Urinary sodium
   - Fractional excretion of sodium
   - ECG findings in hyper- and hypokalemia
   - Serum BUN to Cr ratio.

k. Basic and Advanced Procedural Skills – students should be able to:
   - Insert a peripheral intravenous catheter
   - Obtain an ABG
   - Assist in the insertion of a central venous catheter
   - Perform a urine microscopic examination.

l. Management Skills – Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
   - Writing appropriate fluid orders for the treatment of hypo- and hypervolemia, hypo- and hypernatremia, hypo- and hyperkalemia, hypo- and hypercalcemia.
   - Writing appropriate orders for replacing sodium, potassium, calcium, phosphates and magnesium.
   - Writing appropriate orders for correcting hyperkalemia, hypercalcemia, hyperphosphatemia and phyermagnesemia.

- Calculating the water deficit that needs to be corrected to treat hypernatremia.
- Identifying indications for administration of bicarbonate.

B. Acute Kidney Injury and Chronic Kidney Disease
   1. Knowledge
      a. Students should be able to define, describe and discuss:
         - The distinction between the three major pathophysiologic etiologies for acute renal failure (ARF):
         - Decreased renal perfusion (prerenal)
         - Intrinsic renal disease (renal)
         - Acute renal obstruction (postrenal).
         - The pathophysiology of the major etiologies of “prerenal” ARF, including:
         - Hypovolemia
         - Decreased cardiac output
         - Systemic vasodilation
         - Renal vasoconstriction.
         - The pathophysiology of the major etiologies of intrinsic “renal” ARF, including:
         - Vascular lesions
         - Glomerular lesions
         - Interstitial nephritis
         - Intra-tubule deposition/obstruction
         - Acute tubular necrosis (ATN).
         - The pathophysiology of the major etiologies of “postrenal” ARF, including:
         - Urethral (e.g., tumors, calculi, clot, sloughed papillae, retroperitoneal fibrosis, lymphadenopathy)
         - Bladder neck (e.g., tumors, calculi, prostatic hypertrophy or carcinoma, neurogenic)
         - Urethral (e.g., stricture, tumors, obstructed indwelling catheters).
         - The pathophysiology and clinical findings of uremia.
         - The natural history, initial evaluation and treatment, and complications of ARF.
         - The most common etiologies of chronic kidney disease (CKD):
         - DM
         - Hypertension
         - Glomerulonephritis
         - Polycystic kidney disease
         - Autoimmune diseases (e.g., systemic lupus erythematosus)
         - The staging scheme for CKD
         - The significance for proteinuria in CKD
         - The use of ACE-Is and ARBs in the management of CKD
         - The importance of secondary hyperparathyroidism in CKD
         - The pathophysiology of anemia in CKD
         - The value of glycemic and hypertension control in limiting the progression of CKD
         - The value of CAD risk factor modification in patients with CKD, particularly those treated with dialysis
         - The basic principles of renal replacement therapy (e.g., hemodialysis and peritoneal dialysis) as well as the complications.
   2. Skills
      a. History-Taking Skills – students should be able to obtain, document and present an age-appropriate medical history that differentiates among etiologies of disease including:

- Eliciting an age-appropriate history that distinguishes among the three major reasons for ARF (pre-renal, renal, post-renal), including the predisposing conditions, nephrotoxic drugs or agents, and systemic disease and the major causes f CKD
- Eliciting appropriate information from patients with volume overload, including recent weight gain, edema or ascites, symptoms of heart failure, dietary sodium intake, changes in medications, noncompliance and intravenous fluid regimens.
- Eliciting appropriate information from patients with volume depletion, including recent weight loss, thirst, gastrointestinal losses, urinary losses, oral intake, insensible losses, and intravenous fluid regimens.

b. Physical Exam Skills – Students should be able to perform a physical exam to establish the diagnosis and severity of disease, including:
   - The determination of a patient's volume status through estimation of the central venous pressure using the height of jugular venous distention and measurement of pulse and blood pressure in the lying/standing positions.
   - Palpitation and percussion of the bladder to recognize bladder distention
   - Palpation of the prostate
   - Determination of the presence of pulmonary edema, peripheral edema, ascites, and signs of heart failure
   - Findings consistent with uremia
   - Examination for evidence of systemic disease, including but limited to skin, joints, and nails.

c. Differential Diagnosis – Students should be able to generate a prioritized differential diagnosis recognizing specific history, physical exam, and laboratory findings that distinguish between:
   - Acute renal failure and chronic kidney disease.

d. Laboratory Interpretation—Students should be able to recommend when to order diagnostic and laboratory tests and be able to interpret them, both prior to and after initiating treatment based on the differential diagnosis, including consideration of test cost and performance characteristics as well as patient preferences. Laboratory and diagnostic tests should include, when appropriate:
   - Serum electrolytes, BUN/Cr
   - Anion gap
   - ABG
   - Urinary sodium
   - Fractional excretion of sodium
   - Serum BUN to Cr ratio
   - CBC, ferritin
   - Performing and interpreting a urinalysis, including microscopic examination for casts, red blood cells, white blood cells, and crystals.
   - Calculating fractional excretion of sodium and appreciate its usefulness in distinguishing between pre-renal and intrinsic renal disease
   - Calculating creatinine clearance using the Cockcroft-Gault or MDRD ("modification of diet in renal disease study") equations
   - Serum parathyroid hormone level
   - ECG findings in hyperkalemia
   - Renal ultrasonography.

e. Basic and Advanced Procedural Skills – Students should be able to :
   - Insert a peripheral intravenous catheter
   - Obtain an ABG
   - Assist in the insertion of a central venous catheter
   - Perform a urine microscopic examination.

f. Management Skills – Students should be able to develop an appropriate evaluation and treatment plan for patients that includes:
   - Designing an appropriate management plan for initial management of ARF, including volume management, dietary recommendations, drug dosage alterations, electrolyte monitoring, and indications for dialysis.
   - Developing a management plan to effectively treat HTN and DM
   - Recommending treatment with phosphate binders, calcium replacement, and Vitamin D replacement
   - Recommending treatment for dyslipidemia
   - Recommending treatment for anemia secondary to CKD
   - Recommending acute treatment for hyperkalemia
   - Determining when to obtain consultation from a nephrologist
   - Using a cost-effective approach based on the differential diagnosis.
   - Accessing and utilizing appropriate information systems and resources to help delineate issues related to renal failure
   - Incorporating patient preferences.

OBJECTIVES:

1) Explain to a patient and his or her family why intravenous fluids are needed.
2) Communicate the diagnosis, treatment plan, and subsequent follow up to the patient and his or her family.
3) Elicit input and questions from the patient and family about the management plan.
4) Counsel patients regarding a renal diet.
5) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
6) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
7) Perform a physical examination without causing the patient embarrassment.
8) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
9) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
10) Recognize risk factors and be able to counsel patients on risk reduction.
11) Identify the rights and legal responsibilities of physicians to patients and the community.
12) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
13) Apply the concept of cost-effectiveness to public health interventions.
14) Demonstrate skill in self-directed learning by:
15) Ability to identify areas of deficiency in one's own knowledge and skills.
16) Ability to find appropriate educational resources.
17) Ability to evaluate personal learning progress.
18) Ability to use new knowledge in the care of patients.
19) Determine the validity and applicability of published data through critical appraisal.
20) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
21) Collaborate effectively with patients and families without having to take charge.
22) Demonstrate skill in finding common ground when differences of opinion exist.
23) Establish effective relationships with colleagues and other member of the health care team by:
24) Considering their suggestions and criticisms.
25) Tactful handling of differences of opinion.
26) Demonstrates the ability to place the needs of patients and families first.
27) Demonstrates honesty and trustworthiness in assessment, study and learning.

28) Demonstrates responsibility and respect.
29) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
30) Be willing to seek help, advice or consultation when needed.
31) Respond to personal and family needs and develop effective support systems
32) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
33) Use the concepts of evidence-based medicine to guide patient care decisions.
34) Identify potential conflict between individual and population interests and seek advice from others.
35) Assess the effectiveness of practice and engage in continuous quality improvement.

Note: Registration is NOT through the lottery.

RESPIROLOGY

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Coordinator: Dr. Stephen Chao
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This elective is a combined in-patient and out-patient rotation offering exposure to (1) patients with chest problems admitted to the Respirology Unit, (2) out-patient (clinic) referrals and (3) diagnostic services: radiology rounds, procedures (bronchoscopy, etc.) and pulmonary function tests.

Objectives:

1) Develop proficiency in clinical evaluation of patients with common chest problems;
2) Apply an understanding of pulmonary pathophysiology to disease processes;
3) Learn indications for common diagnostic modalities (pulmonary function tests, bronchoscopy, radiologic evaluations, etc);
4) Acquire a practical approach to the management of common chest problems.
5) Exposure to patients with sleep disorders is an optional objective.
6) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
7) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
8) Perform a physical examination without causing the patient embarrassment.
9) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
10) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
11) Recognize risk factors and be able to counsel patients on risk reduction.
12) Identify the rights and legal responsibilities of physicians to patients and the community.
13) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
14) Apply the concept of cost-effectiveness to public health interventions.
15) Demonstrate skill in self-directed learning by:
16) Ability to identify areas of deficiency in one's own knowledge and skills.

17) Ability to find appropriate educational resources.
18) Ability to evaluate personal learning progress.
19) Ability to use new knowledge in the care of patients.
20) Determine the validity and applicability of published data through critical appraisal.
21) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
22) Collaborate effectively with patients and families without having to take charge.
23) Demonstrate skill in finding common ground when differences of opinion exist.
24) Establish effective relationships with colleagues and other member of the health care team by:
25) Considering their suggestions and criticisms.
26) Tactful handling of differences of opinion.
27) Demonstrates the ability to place the needs of patients and families first.
28) Demonstrates honesty and trustworthiness in assessment, study and learning.
29) Demonstrates responsibility and respect.
30) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
31) Be willing to seek help, advice or consultation when needed.
32) Respond to personal and family needs and develop effective support systems
33) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
34) Use the concepts of evidence-based medicine to guide patient care decisions.
35) Identify potential conflict between individual and population interests and seek advice from others.
36) Assess the effectiveness of practice and engage in continuous quality improvement.
37) Exposure to patients with sleep disorders is an optional objective.

Exposure to patients with sleep disorders is an optional objective.

The student will participate in in-patient care and/or attend out-patient clinics. The proportion of in-patient and ambulatory experience can be tailored to the students' needs.

The student will be expected to attend all clinical teaching sessions. Formal sessions (journal club, respirology teaching rounds, city-wide lecture series, and a multi disciplinary Radiology Round - each held once weekly) provide focus for the educational experience. The evaluation will include assessment in out-patient clinics and during clinical and diagnostic rounds. Off-hours experience is voluntary.

Note: Registration is NOT through the lottery.

RHEUMATOLOGY

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Education Assistant: Nadia Hachem
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Tel: 519 973-4411 ext 3380
Email: nadiah@uwindsor.ca

This rotation offers outpatient experience in Rheumatology. The student will also be involved in the care of outpatients and consults. It is anticipated upon completion of the rotation that the student will have learned to carry out a musculoskeletal examination, have become acquainted with common rheumatic disease problems and have gained experience in their investigation and management. Students will improve their injection techniques. Both in and outpatient clinical experience will be gained in this rotation. Evaluation will be continuous throughout the rotation.

Objectives:

1) Develop the ability to order and understand interpretation of common rheumatologic investigations including serology and synovial fluid analysis.
2) Differentiate inflammatory arthritis, degenerative arthritis, and fibromyalgia.
3) Develop the ability to construct a relevant history, examination, limited investigation, assessment, and management for a patient presenting with the following:
4) an acute mono-arthritis;
5) a chronic mono-arthritis;
6) an acute inflammatory oligoarthritis;
7) a persistent oligoarthritis;
8) an acute polyarthritis;
9) a more chronic polyarthritis.
10) Possess the knowledge, skills, and attitude to diagnose, initially manage and to know when to immediately refer a patient (to urgent subspecialty care if necessary) with temporal arteritis.
11) Possess the knowledge, skills, and attitude to diagnose and initially manage polymyalgia rheumatica.
12) Possess the knowledge, skills, and attitude to take a relevant history, to identify and characterize inflammatory back disorders such as ankylosing spondylitis.
13) Possess the knowledge, skills and attitude to construct an appropriate differential diagnosis and plan of patient enquiry, examination, limited investigation and assessment for a patient presenting with low back pain.
14) Specify the symptoms, signs and predisposing factors; to outline the assessment and appropriate investigations; to propose a differential diagnosis, and; to outline the principles of management of a patient with the following:
15) connective tissue disease such as systemic lupus erythematosus;
16) vasculitis
17) Possess the knowledge, skills, and attitude to take a relevant history, to identify and characterize:
18) proximal muscle weakness and/or elevated muscle enzymes;
19) glucocorticoid-induced osteoporosis.
20) Able to be familiar with the major indications, adverse effects, drug interactions and contra-indications of drugs commonly used in the management of musculoskeletal conditions. This includes analgesics, non-steroidal anti-inflammatory drugs, antidepressants in pain management, corticosteroids, hypouricaemic drugs, disease modifying and cytotoxic drugs, therapy for osteoporosis, acute and chronic pain management therapy and disease-modifying therapy.
21) Possess the knowledge, skills and attitude to diagnose and initially manage fibromyalgia.
22) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
23) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
24) Perform a physical examination without causing the patient embarrassment.
25) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
26) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
27) Recognize risk factors and be able to counsel patients on risk reduction.
28) Identify the rights and legal responsibilities of physicians to patients and the community.
29) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
30) Apply the concept of cost-effectiveness to public health interventions.
31) Demonstrate skill in self-directed learning by:

32) Ability to identify areas of deficiency in one's own knowledge and skills.
33) Ability to find appropriate educational resources.
34) Ability to evaluate personal learning progress.
35) Ability to use new knowledge in the care of patients.
36) Determine the validity and applicability of published data through critical appraisal.
37) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
38) Collaborate effectively with patients and families without having to take charge.
39) Demonstrate skill in finding common ground when differences of opinion exist.
40) Establish effective relationships with colleagues and other member of the health care team by:
41) Considering their suggestions and criticisms.
42) Tactful handling of differences of opinion.
43) Demonstrates the ability to place the needs of patients and families first.
44) Demonstrates honesty and trustworthiness in assessment, study and learning.
45) Demonstrates responsibility and respect.
46) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
47) Be willing to seek help, advice or consultation when needed.
48) Respond to personal and family needs and develop effective support systems
49) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
50) Use the concepts of evidence-based medicine to guide patient care decisions.
51) Identify potential conflict between individual and population interests and seek advice from others.
52) Assess the effectiveness of practice and engage in continuous quality improvement.

Note: Registration is NOT through the lottery.

OBSTETRICS & GYNAECOLOGY

Academic Director: Dr. Brad Jasey
Education Assistant: Bev Nicholls
PHONE: 519 254-5577 ext 52507
EMAIL: beverlyn@uwindsor.ca
OFFICE LOCATION: Windsor Regional Hospital Rm 4306

General Description:

The fourth year Clinical Science Electives in the Department of Obstetrics and Gynaecology offer the student the opportunity to enhance his/her skills in out-patient diagnosis and management. The student is expected to attend according to the schedule agreed upon with the supervisor, including call duty, rounds etc. for the full block. Students with specific learning objectives for their experience should arrange a time to meet with the supervisor to discuss them.

General Learning Objectives:

Upon completion of the clinical elective, students should:
1. Demonstrate competence in patient assessment, assigning priorities to new problems presented and weighing the relevance of the information obtained.
2. Be able to present a succinct history in verbal or written form.

3. Be capable of developing a differential diagnosis from history and physical examination.
4. Be comfortable with and competent to perform bi-manual examination, pap smear and vaginal swab.
5. Be able to develop an optimum plan for further investigation and treatment of patient problems based on the patient's individual needs, an evidence-based approach and a consideration of resource availability.
6. Be aware of the nature and principles of management of tertiary problems within the specialty of obstetrics and gynaecology.
7. Have a satisfactory understanding of the nature of the practice of obstetrics and gynaecology and the lifestyle of the obstetrician/gynaecologist.
8. Be capable of making a well-informed decision regarding the selection of this specialty as a vocation.

A. Obstetrics

a) Perform a complete history, physical examination, establish and confirm gestational age and identify risk factors during an initial antenatal assessment.
b) Identify health issues and counsel patients with respect to nutrition, activity and exercise, sexual activity, smoking and drug use in pregnancy.
c) Discuss the importance of routine prenatal laboratory investigations, prenatal diagnostic options (IPS, Quad screen, amniocentesis, CVS) and ultrasound assessment of fetal morphology.
d) Participate in ongoing antenatal care and investigations (GDM screening, Rh prophylaxis, GBS screening, term cervical assessment) to ensure maternal health and normal fetal growth and wellbeing.
e) Provide assessments of normal healing at 6 weeks post partum, counselling of approximate VBAC considerations, and counselling on contraceptive options.

B. Gynaecology

a) Perform a sensitive, organized history (including menstrual, contraceptive, sexual and gynaecologic history) in ambulatory patients presenting with gynaecologic problems.
b) Perform a complete physical examination with an emphasis on the gynaecologic examination (abdominal exam, bimanual pelvic exam, speculum exam and pap smear) in ambulatory patients presenting with gynaecologic problems.
c) Develop a differential diagnosis and management plan for common gynaecologic problems (dysmenorrhea, dysfunctional uterine bleeding, contraception, infertility, pelvic mass, menopausal symptoms, post menopausal bleeding, pelvic relaxation and urinary incontinence).
d) Understand the importance of screening for cervical cancer and current screening programs. Discuss the results of an abnormal pap smear and outline appropriate follow up or investigations.

Objectives:

1) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
2) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
3) Perform a physical examination without causing the patient embarrassment.
4) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
5) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
6) Recognize risk factors and be able to counsel patients on risk reduction.
7) Identify the rights and legal responsibilities of physicians to patients and the community.
8) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
9) Apply the concept of cost-effectiveness to public health interventions.

10) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
11) Determine the validity and applicability of published data through critical appraisal.
12) Collaborate effectively with patients and families without having to take charge.
13) Demonstrates the ability to place the needs of patients and families first.
14) Demonstrates honesty and trustworthiness in assessment, study and learning.
15) Demonstrates responsibility and respect.
16) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
17) Be willing to seek help, advice or consultation when needed.
18) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
19) Use the concepts of evidence-based medicine to guide patient care decisions.
20) Identify potential conflict between individual and population interests and seek advice from others.
21) Assess the effectiveness of practice and engage in continuous quality improvement.

Number of Students Accepted: 1 student in Blocks 2, 4, 6 and 8 ONLY

ONCOLOGY

Academic Director: Dr. Wassim Saad
Coordinator: Dr. Colvin Springer
Contact: Nadia Hachem
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A) General Description

The Windsor Regional Cancer Centre offers Clinical Science Electives to undergraduates in fourth year providing a more focused outpatient and inpatient ward experience in Medical or Radiation Oncology with clinical assignments.

Additionally, there is excellent opportunity to do a number of diagnostic/therapeutic procedures under the supervision of the consultants within the Clinic, i.e. lumbar punctures, bone marrows, thoracentesis.

At the end of this elective, students will

- Have an understanding of an approach to the management of common malignancies
- Be comfortable with oncology as expected of an undifferentiated physician
- Have an understanding of how cancer care is delivered in Ontario/Canada
- Be aware of oncology as a career choice.

B) Objectives

Medical Oncology:

We currently offer 4 different disease site tracks. Elective students can choose to do a combination of 2 of these 4 disease sites tracks while doing a two week elective in Medical Oncology.

The four disease sites offered are:

1. Breast Cancer track
2. Thoracic track
3. GI/H&N track
4. GU track

Objectives for each of these tracks are:

1. **Breast Cancer Track:**
   Demonstrate knowledge of the pathogenesis of breast cancer including the influence of risk factors: dietary, genetic, environmental, lifestyle, prior malignancy and prior therapy.

   Describe, in general terms the sub-classification of breast cancer into subtypes based on genetic profiling and histologic characteristics (ER/PR status, Her2NEU status, etc.) and the clinical significance of this.

   Describe the indications for mastectomy vs. breast conserving surgery, sentinel node biopsy vs. axillary node dissection.

Presented with a patient with early stage breast cancer, describe in general terms the roles of surgery, radiation, and adjuvant chemotherapy or hormonal therapy.

Compare adjuvant systemic therapies (chemotherapy, trastuzumab, hormonal) and contrast the indications for their use. Presented with a patient with resected breast cancer, list factors used in deciding which adjuvant therapy to offer.

Presented with a patient with metastatic breast cancer, compare hormonal vs. chemotherapeutic treatment options and list factors used to guide choice of agents.

2. **Thoracic track:**

Demonstrate knowledge of the data and controversies regarding different screening methods for lung cancer

i) Sputum cytology
ii) Chest x-ray
iii) CAT scan

Demonstrate knowledge of the pathogenesis of Lung Cancer including the risk factors

i) Smoking
ii) Impact of smoking cessation
iii) Asbestos exposure: occupational, non-occupational
iv) Environmental exposures
v) Underlying lung diseases

Demonstrate knowledge of the general classification of lung cancers: Non-Small Cell Lung Cancer

i) Adenocarcinoma and subtypes
ii) Squamous Cell Carcinoma
iii) Large Cell Carcinoma
iv) Neuroendocrine Tumors (Well-differentiated bronchial neuroendocrine tumors, Atypical bronchial neuroendocrine tumors, Large Cell Neuroendocrine Carcinoma, Small Cell Carcinoma)

Presented with a patient with early stage lung cancer, describe in general terms the roles of surgery, radiation, and adjuvant chemotherapy.

Presented with a patient with locally advanced non small cell lung cancer, compare and contrast palliative versus curative treatment strategies.

Presented with a patient with a patient with stage IV non-small cell lung cancer, outline in general terms which systemic treatment modalities are employed, and the rationale for using chemotherapy.

Describe the significance of EGFR mutations for the management of lung cancer.

Describe the role of chemotherapy in managing small cell lung cancer, and compare to the management of non-small cell lung cancer.

3. **GI/H&N Track:**

Demonstrate knowledge of the pathogenesis of Head and Neck (H&N) cancers, recognizing the influence of tobacco and alcohol in pathogenesis and multiplicative risk relationship between certain viruses and H&N cancers.

Demonstrate knowledge of the typical histologies of common GI cancers, including gastroesophageal cancer, pancreatic cancer, and colorectal cancer as well as one risk factor for fir each of these primary sites.

Presented with a patient with resectable GI or head and neck cancer, indicate whether neoadjuvant (or adjuvant) systemic therapy is *usually* recommended, and which patient and tumour features are taken into consideration in arriving at a treatment decision.

Presented with a patient with advanced gastro-esophageal cancer, outline first line systemic treatment options.

Presented with a patient with advanced pancreatic cancer, outline first line systemic treatment options.

Presented with a patient with advanced colorectal cancer, outline first line systemic treatment options.

4. **GU Track:**
Demonstrate knowledge of risk factors for and typical presentation of urothelial, renal, prostate, and germ cell cancers.

Presented with a patient with localized bladder cancer, outline the necessary staging investigations to determine whether neoadjuvant therapy is needed.

Presented with a patient with testicular germ cell cancer, describe the treatment options for stage I disease . Outline the use of the International Prognostic System as a guide for treatment and prognostication of advanced disease.

Discuss the pros and cons of prostate cancer screening by PSA.

Presented with a patient with advanced renal cell carcinoma, indicate two systemic agents that could be used to offer palliation.

Compare and contrast the management priorities and likely disease trajectories for a patient with metastatic muscle-invasive bladder cancer versus a patient with previously untreated prostate cancer.

Outline the role of bisphosphonates in the management of prostate cancer.

Radiation Oncology:

We offer a two week elective with an assigned preceptor in Radiation Oncology. During the elective, you will attend all new patient, follow up and patient review clinics, CT simulation sessions, OR activities and inpatient activities. Applicants may request their ordered preference of the five **MAJOR** disease sites, and we will try our best to accommodate the request. Your preceptor will treat at least **ONE MAJOR** site.

1) Breast (Breast Cancer, DCIS)
2) Genitourinary (Prostate, Bladder, Testicle, Kidney)
3) Gastrointestinal (Colorectum, Stomach, Pancreas, Anus)
4) Thoracic (Lung, Esophagus)

5) Gynecology (Cervix, Uterus, Vulva)

Students interested in a brachytherapy experience should make the request in their application. Other disease sites that a student may experience include:

1) Head and Neck
2) Sarcoma
3) Pediatrics
4) Skin
5) Palliative

Knowledge Objectives:

2. For the most common diseases within each **MAJOR** Disease Site that the student is exposed to, we expect the clerk to learn: risk factors, epidemiology, histologies, staging investigations, TNM staging, radical, adjuvant and palliative treatment options, outcomes of treatments, and general side effects of treatments

More specific to Radiation Oncology:

a) Understand the basic principles of radiation physics (radioactive isotopes vs linear accelerators, photons vs electrons, measurements of radiation energy and dose)
b) Understand the basic principles of radiobiology (Cell Cycle, 4 R's of Radiotherapy, radiosensitivity vs radioresistancy)
c) Understand the basic principles of radiation safety
d) The role of radiotherapy in the management of patients with cancer, and the complications and side effects that can result from radiotherapy
e) The importance of a multidisciplinary approach to cancer management through MDT clinics and DST rounds
f) The process by which treatment plans are generated from an understanding of tumor volume, normal tissue considerations and natural history of the disease by visiting the CT simulation room and reviewing approved plans
g) The implementation of radiotherapy treatment plans by visiting a treatment unit and observing immobilization device use, treatment verification , and use of radiotherapy equipment.

ELECTIVES DESCRIPTION SUMMARY

i) Radiation Oncology
- 2 week rotation
- 1 student assigned to a radiation oncologist for one week at a time
- attends O.P. clinics and MDT rounds
- to cover main tumour sites
- performs in-hospital consultations
- attend simulations
- attend all rounds
- inpatient care as per attending
- attend O.R. as per attending

Night and Weekend Call - No

Evaluation Procedure - Pass/Fail

<u>Note</u>: Registration is NOT through the lottery.

The Ivan H. Smith Memorial Prize

Awarded to the final two years medical student demonstrating outstanding interest in Radiation Oncology. Donated by the friends of the late Dr. Ivan Hamilton Smith. *$300 (Book Prize)*
http://www4.registrar.uwo.ca/FinancialServices/AwardSearchProc.cfm?Letter=I

ONCOLOGY - PALLIATIVE MEDICINE ELECTIVE IN WINDSOR & ESSEX COUNTY

EDUCATION COORDINATOR: Dr. Gordon Giddings
Tel 519-253-5253
Fax 519-255-8676
Email: gogidd@gmail.com

Overall Goals/Aims:

1) To understand the interdisciplinary approach and practice of palliative and end-of-life care, including the roles of health care providers in the community.
2) To understand the role of the palliative care physician in addressing the unique needs of patients and their families, in terms of pain and symptom control, and in their emotional, psychosocial, cultural, and spiritual needs.
3) To participate in the care of patients with advanced illness or near end-of-life, including participation in a "goals of care" meeting.

Description:

The four-week elective will be based at the Windsor Regional Hospital (Metropolitan Campus or the Malden Park Palliative Care Unit) for 2 weeks and at the Hospice of Windsor and Essex County for two weeks. Students will participate in an outpatient HIV clinic (Windsor Regional Hospital) for 1 - 3 half days as desired.

Students opting for the 2 week elective will be based at one site, depending on preference and availability.

Weekly rounds to review student(s) experiences will occur. Each student will keep a reflective, narrative journal that will serve as a point of discussion at these educational rounds. Orientation to reflective learning will be provided, and a syllabus will be available on webCT. A student and resident led, faculty supervised journal club will also occur at least once during the rotation. Once weekly discipline led teaching sessions will be held at the Windsor Regional Cancer Center.

Sandars, J. The use of reflection in medical education: AMEE Guide No. 44. Medical Teacher 2009;31:685-695.
Fins, J et al. Reflective Practice and Palliative Care Education: A Clerkship response to the Informal and Hidden Curricula. Acad Med 2003:78:307-312.
Wald, HS, et al. 'The Loss of My Elderly Patient': Interactive reflective writing to support medical students' rites of passages. Medical Teacher 2010;32: e178-184.
Bigonnesse, J. et al. Educating Future Physicians in Palliative and End-of-Life Care (EFPPEC). www.efppec.ca

Windsor Regional Hospital & Regional Cancer Centre

Students will work on an inpatient Palliative Care Team and have the opportunity to participate in outpatient clinics focused on malignant pain and symptom management, advanced malignancy or HIV infection. Weekly rounds to review the student experience will occur and the student will use a reflective journal technique to stimulate discussion around individual cases (knowledge, attitudes, and behaviors). Students will also spend at least one half day working with a nurse practitioner or palliative care nurse, social worker, and dietitian.

The Windsor and Essex County Hospice

Students will be assigned to the Hospice Residence for one week, working with the palliative medicine team caring for patients (and their families) who are near end-of-life. The second week will be focused on delivering hospice care in the home. Students will participate in home visits under supervision. Opportunities to work with interdisciplinary professionals will exist, and the student will become familiar with, and may participate in some of the Hospice Wellness programs.

Objectives:

Knowledge:
The student will be able to:
i) Describe the fundamental concept of "total pain", including the physical symptoms, and how emotional, psychological, spiritual and cultural concerns contribute to the pain experience.
ii) Describe the fundamental role of the palliative care physician in providing pain and symptom management and describe a "goals of care" meeting.
iii) Demonstrate knowledge of:

a) Pain management in advanced disease including the differentiation of nociceptive, neuropathic, and inflammatory pain
b) Opioid use in advanced illness and near end of life, including the rationale for an opioid rotation, calculation of breakthrough and long acting opioid dosages, and how to titrate opioids appropriately
c) Pharmacology of opioids and the concepts of tolerance, physical dependence, and addiction as they relate palliative care.
d) Risk factors for addictive behavior and a strategy to treat patients with a history of drug or alcohol addiction.
e) Common side effects of opioids, including delirium and neurotoxicity, and an appropriate management plan for each adverse effect.
f) The treatment of neuropathic pain in advanced disease or near end-of-life.
g) Evidence based treatment plans for fatigue, anorexia, cachexia, constipation, dyspnea, nausea and vomiting, delirium, anxiety and depression
h) The potential roles of radiotherapy, chemotherapy, surgery, balloon kyphoplasty, vertebroplasty, RF ablation, esophageal stenting, and interventional anaesthesia in the management of symptoms from advanced malignancy.

iv) Describe the individual roles of interprofessional palliative care providers in the community, such as nurses/nurse practitioners, social workers, dietitians; and explain how to access each of them.

Skills:
The student will be able:
i) To communicate, in an effective and professional manner with interprofessional palliative care providers
ii) To develop an appropriate management plan in terms of a history, physical examination, differential diagnosis, and suggest investigations of pain and symptoms in patients with advanced illness or near end of life
iii) To assess the psychosocial and spiritual needs of a dying patient and his or her family
iv) To write an appropriate opioid prescription including breakthrough dosing
v) To assist in monitoring the efficacy of treatment plans for pain and symptom management
vi) To contribute and effectively record all the components of a holistic and interprofessional record of a palliative patient.
vii) To conduct or participate in a "goals of care" meeting.
viii) To use a reflective journal and group discussions to identify one's own attitudes and beliefs in caring for

those with advanced illness or near end of life.

Attitudes:
The student will:
i) Demonstrate a patient and family centered, interdisciplinary approach in the assessment of pain and symptoms in patients with advanced illness or near end of life.
This will include demonstration of a professional attitude toward their patients health care providers.
ii) Describe and or demonstrate an approach to defining cultural, religious, and aboriginal issues in palliative and end-of-life care.
iii) Discuss how one's own attitudes may potentially impact care delivered to the dying patient.

1) To describe the nature of suffering and the patient's experience of advanced illness or impending death.
2) To recognize and describe the role that existential anxiety may contribute to suffering or "total pain" near end-of-life.
3) To conduct patient-centred interviews which explore the patient's feelings, ideas, impact on function, and expectations.
4) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management rather than needing to always take charge.
5) Perform a physical exam without causing the patient embarrassment.
6) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
7) Recognize risk factors and be able to counsel patients on risk reduction.
8) Tolerate uncertainty and focus on the patient's welfare rather than a need for precision with faced with a difficult situation.
9) Abide by the principles of the Code of Ethics as published by the Canadian Medical Association and keep informed of changes in the code.
10) On completion of the elective, students will be able to identify and attend to suffering.
11) Use specialized knowledge and skills to contribute to the community as well as the individual's well-being.
12) Identify the rights and legal responsibilities of physicians to patients and the community.
13) Demonstrate skill in self-directed learning by:
    a) Ability to identify areas of deficiency in one's own knowledge and skills.
    b) Ability to find appropriate educational resources.
    c) Ability to evaluate personal learning process.
    d) Ability to use new knowledge to care for patients.
    e) Opportunity to learn and apply the scientific method.
14) Determine the validity and applicability of published data through critical appraisal.
15) Develop the self-knowledge necessary for personal growth and continuous learning.
16) Develop the ability to work effectively as a member of a team, as participant or leader.
17) Collaborate effectively with patients and families without having to take charge.
18) Demonstrate skill in finding common ground when differences of opinion exist.
19) Demonstrate the ability to communicate effectively with peers and colleagues by contributing to productive communication and co-operation among colleagues engaged in education, research, and health care.
20) Establish effective relationships with colleagues and other members of the health care care team by:
    a) Considering their suggestions and criticisms.
    b) Tactful handling of differences of opinion.
    c) Providing support and direction to less experienced personnel.
21) Recognize personal biases and ensure that they do not interfere with the best patient's best interests

22) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
23) Use concepts of evidence-based medicine to guide patient care decisions.
24) Identify potential conflict between individual and population interests and seek advice from others, including ethicists, when necessary to help resolve issues.
25) Explain the scientific method in assessing interventions for pain, symptom, and quality of life indicators.
26) Support and value the work of scientists as vital to the health of the population.
27) Assess the effectiveness of practice and engage in continuous quality improvement.
28) Self assess one's own attitudes and beliefs in caring for the dying.
29) Identify the concept of "self-care" and how a physician may seek additional help when feeling unable to cope or overwhelmed.
30) Develop an awareness of personal assets, biases, and limitations.
31) Accept that physicians cannot be 'all things to all people'.
32) Respond to personal and family needs and develop effective support systems.

Assessment
Weekly formative assessment will be provided to the student by their supervisorThe final assessment and feedback will be presented by the education coordinator, Dr. Giddings.

Number of Students Accepted: 2 students per block, 2 or 4 week electives, preference given to students who desire a 4 week rotation

OPHTHALMOLOGY

Academic Director: Dr. Andrew Petrakos
Education Assistant: Bev Nicholls
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OFFICE LOCATION: Windsor Regional Hospital Rm 4306

Please note that this description has not been updated. It is subject to change.

DESCRIPTION

A) General Description

Exposure to the clinical ophthalmology in out-Patient Departments. Association with in-patient services, investigative and surgical procedures and post-operative management.

B) Learning Objectives

Recognition of the clinical problems confronted by those rendering eye medical services, and ability to discriminate between minor eye problems and those requiring secondary to tertiary care.

Routine eye examination as part of a general physical examination will be stressed, and treatment of eye conditions within the scope of the family physician.

Sufficient exposure will be provided to those who may be interested in tertiary eye care levels to stimulate their interest in the speciality.

a) The Eye Examination
   i. Describe normal ocular anatomy.
   ii. Measure and record visual acuity.
   iii. Determine and record colour vision.
   iv. Perform Schiotz tonometry.
   v. Use the slit-lamp.
   vi. Use the direct ophthalmoscope for fundus examination.
   vii. Differentiate a normal from an abnormal fundus.
   viii. Determine whether reduced visual acuity is due to ocular, systemic or neurological disease
   ix. Dilate pupils.

b) Acute & Chronic Visual Loss
   i. Obtain an accurate history regarding the onset of visual loss and modify the general history to take into account possible systemic causes.
   ii. Distinguish acute visual loss caused by medical opacity from that caused by retinal and optic nerve disease, using a penlight and direct ophthalmoscope.
   iii. Recognize a normal from an abnormal optic disc.
   iv. Perform a Schiotz tonometry.
   v. Recognize a cataract and determine its effect on vision.
   vi. Determine if a cataract is the only cause of a patient's visual loss.
   vii. Examine the macula and recognize a macular abnormality.

c) Red Eye
   i. Perform the appropriate diagnostic steps for the red eye.

ii. Recognize the dangerous signs and symptoms that may accompany red eye and recognize those problems that should be referred to an ophthalmologist.
iii. Describe the treatment for those conditions that can be treated by undifferentiated physician.
iv. Describe the serious complications of prolonged use of topical anaesthetic and corticosteroid drops.

d) Injuries
i. Modify history and examination in order to determine the problem quickly and efficiently.
ii. Describe and initiate immediate treatment in true ocular emergencies (e.g., chemical burn).
iii. Describe and demonstrate procedure required to examine an injured eye and record visual activity as accurately as possible.
iv. Describe the treatment of those common ocular and orbital injuries that can be managed by the undifferentiated physician and identify those that require referral.
v. Demonstrate common treatment skills required to handle eye injuries.

e) Amblypoia and Strabismus
i. Measure or estimate visual acuity in children.
ii. Detect strabismus by gross inspection, the corneal light reflex and the cover test.
iii. Perform ophthalmoscopy on a child to rule out organic causes of reduced acuity or strabismus.
iv. Describe to the parents the effects of amblyopia and explain the need for prompt treatment by an ophthalmologist.

f) Neuro-Ophthalmology
i. Detect abnormalities of visual acuity.
ii. Examine and detect abnormalities in papillary reactions and interpret abnormal papillary reactions.
iii. Examine and detect abnormalities in the function of the extraocular muscles.
iv. Examine and detect abnormalities in peripheral vision (visual fields) and interpret their meaning.
v. Examine and detect abnormalities of the optic nerve head.

g) Ocular Manifestations of Systemic Disease
i. Recognize, on ophthalmoscopic examination, the characteristic features of nonproliferative and proliferative diabetic retinopathy.
ii. Explain to the patient (or parent) the natural history of untreated diabetic retinopathy and the expectations of laser therapy.

h) Drugs and the Eye
i. Demonstrate the correct application of eye drops to the conjunctival sac.
ii. Discuss and detect the ocular effect and complications of topical ocular anaesthetics, mydriatics and corticosteroids.
iii. Discuss and detect the ocular side effects of systemically administered corticosteroids, chloroquines, digitalis, dephenylhydantion, ethambutol and the phenothiazines.
iv. Discuss and detect the systemic side effects of topically administered beta-adrenergic blockers, the cholinergic simulators and the adrenergic drugs.

1) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
2) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
3) Perform a physical examination without causing the patient embarrassment.
4) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
5) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
6) Recognize risk factors and be able to counsel patients on risk reduction.

7) Identify the rights and legal responsibilities of physicians to patients and the community.
8) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
9) Apply the concept of cost-effectiveness to public health interventions.
10) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
11) Determine the validity and applicability of published data through critical appraisal.
12) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
13) Collaborate effectively with patients and families without having to take charge.
14) Demonstrate skill in finding common ground when differences of opinion exist.
15) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
16) Demonstrates the ability to place the needs of patients and families first.
17) Demonstrates honesty and trustworthiness in assessment, study and learning.
18) Demonstrates responsibility and respect.
19) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
20) Be willing to seek help, advice or consultation when needed.
21) Respond to personal and family needs and develop effective support systems
22) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
23) Use the concepts of evidence-based medicine to guide patient care decisions.
24) Identify potential conflict between individual and population interests and seek advice from others.
25) Assess the effectiveness of practice and engage in continuous quality improvement.

C) Type of Clinical Experience

In Patient	( )
Out Patient	( )
Both	(xx)

D) Night and Weekend Call

Yes	( )
No	(xx)

E) Evaluation Procedure

Written Exam	( )
Oral Exam	( )
Informal Clin. Exam	(xx)

Note: Registration is NOT through the lottery.

OTOLARYNGOLOGY – HEAD AND NECK SURGERY

Academic Director: Dr. Andrew Petrakos
Education Assistant: Bev Nicholls
PHONE: 519 254-5577 ext 52507
EMAIL: beverlyn@uwindsor.ca
OFFICE LOCATION: Windsor Regional Hospital Rm 4306

A) Introduction

Clinical elective students are defined as medical students spending an intensive continuous period in the Department of Otolaryngology – Head and Neck Surgery. An elective block is typically 2 to 4 weeks. It is understood that elective students have a particular interest in the specialty beyond the experience obtained during their core medical curriculum.

B) Description

The Otolaryngology program at the University of Western Ontario is based at three teaching hospitals in London, Ontario: London Health Sciences Centre - Victoria Hospital, University Hospital, and St. Joseph's Health Care. UWO is the only major referral centre for Southwestern Ontario, and provides comprehensive tertiary level care in every Otolaryngology subspecialty, including:

- Head and Neck Oncology
- Head and Neck Microvascular Reconstructive Surgery
- Otology and Neuro-otology
- Pediatric Otolaryngology
- Laryngology and Professional voice
- Rhinosinology and Endoscopic skull base surgery
- Facial Plastic & Reconstructive Surgery, Facial Cosmetic Surgery, and Trauma

As well, the teaching hospitals deliver general otolaryngologic care to the city of Windsor and surrounding areas. This unique situation enables students to better appreciate the scope of the specialty.

Every attempt will be made to allow the student to critically evaluate Otolaryngology as a career choice and to objectively view the residency training program at the University of Western Ontario. As such, the student will be fully integrated into the clinical environment and will have the opportunity to be a vital part of the surgical team. Time will be spent in the operating rooms, providing inpatient care, and participating in outpatient clinics. It will be expected that students participate in the call schedule and have the opportunity to evaluate emergency patients with resident/consultant supervision

Optional academic endeavours such as formal round presentations will be welcomed if schedules permit during the student's tenure. As well, students wishing to participate in clinical projects such as case presentations or retrospective reviews are encouraged to discuss their interest with residents and consultants.

C) Objectives

Otolaryngology is a surgical subspecialty with tremendous breadth and depth. Problems that affect structures of the head and neck significantly impact patients' function and quality of life (e.g., smell, hearing, breathing, swallowing, phonation). Our patient population ranges from neonates to the elderly. Clinical problems can be life-threatening (e.g., airway obstruction), urgent (e.g., head and neck cancer), and elective (e.g., cosmetic

surgery). Our surgical procedures are diverse, ranging from intricate (e.g., paediatric airway surgery), technologically and anatomically complex (e.g., endoscopic sinus surgery with 3D-image guidance), really small (operating on the smallest bones of the body in the ear), really large (head and neck cancer resection with free flap reconstruction), creative (cosmetic surgery), and most of all….rewarding.

Medical Expert / Decision Maker

A. Skills

a) Ear
    a. Otologic history taking for common otologic problems:
        i. Ear discharge
        ii. Otalgia
        iii. Infant hearing loss
        iv. Adult hearing loss
        v. Dizziness
        vi. Facial weakness
    b. Removal of ear wax
    c. Otoscopy including pneumatic otoscopy
    d. Tuning fork tests
    e. Interpretation of basic audiogram (hearing test)
    f. Otoneurologic examination
        i. Dix-Hallpike maneuver and the Particle Repositioning Maneuver
        ii. Cranial nerve examination
        iii. Cerebellar function

b) Nose and Paranasal Sinus
    a. History taking for common nasal problems:
        i. Nasal obstruction
        ii. Nasal discharge
        iii. Facial pain
        iv. Anosmia
        v. Epistaxis
    b. Anterior rhinoscopy
    c. Exposure to endoscopic examination of the full nasal cavity
    d. Identification of normal structures within the nasal cavity
    e. Examination of the external nasal structures
    f. General appreciation of plain films and CT scans of the nose and paranasal sinuses

c) Oral Cavity
    a. History taking for common oral cavity problems:
        i. Sore mouth
        ii. Drooling
        iii. Salivary gland problems
        iv. Lip lesion
        v. Tongue mass
    b. Examination of the oral cavity including bimanual palpitation
    c. Identification of salivary duct openings
    d. Assessment of the oropharynx

d) Pharynx and Larynx
    a. History taking for common throat problems:
        i. Sore throat
        ii. Foreign body sensation (globus)
        iii. Hoarseness

iv. Sleep apnea
v. Stridor

b. Examination of the pharynx and larynx via mirror as well as an exposure to endoscopic examination of these anatomical areas

e) Neck
   a. History taking for common neck/visceral problems:
      i. Thyroid nodule
      ii. Neck mass
   b. Examination of the head and neck and its viscera
   c. Appreciation of normal anatomy
      i. Identification of the triangles in the neck
      ii. Identification of surface anatomy of normal anatomical structures, such as the carotid artery, thyroid gland, salivary glands, laryngeal structures
   d. Observe the technique of fine needle aspiration

B. Knowledge

a) Ear Infection
   a. Demonstrate knowledge of the differential diagnosis of otorrhea and otalgia (local and referred) with an emphasis on external otitis, acute and chronic otitis media and their complications

b) Hearing Loss / Tinnitus
   a. Show an understanding of the need for the early diagnosis of hearing loss in infants including the need for a high "index of suspicion" (early warning signs) and the need for early audiologic testing and habilitation. The protocol followed by the *Universal Infant Hearing Program* should be known to you.
   b. Describe the common causes of conductive hearing loss (external canal to the staples footplate)
   c. Develop a differential diagnosis of sensory neural hearing loss (sudden *vs* gradual), appreciate the need for preventative measures in the workplace (noise reduction) and the devices available for rehabilitation (hearing aids and assistive devices)
   d. Provide a working knowledge of tinnitus (subjective and objective)

c) Vertigo
   a. Differentiate vestibular vertigo from other causes of imbalance vertigo
   b. Distinguish peripheral *vs* central vertigo
   c. Provide a DDx of vertigo with and without hearing loss
   d. Diagnose benign paroxysmal vertigo based on the history and clinical findings

d) Facial Paralysis
   a. Differentiate peripheral *vs* central paralysis and show an understanding of peripheral facial paralysis from an ENT-HNS perspective (i.e., intracranial, temporal bone, extratemporal)

e) Nose and Paranasal Sinuses
   a. Describe the functions of the nose (airway, mucocillary system, warming and humidification)
   b. Demonstrate knowledge of the DDx of nasal obstruction with and without rhinitis
   c. Recognize, investigate, and treat acute sinusitis
   d. Formulate an approach to a patient with acute epistaxis (anterior and posterior)

f) Pharynx
   a. Demonstrate an understanding of obstructive sleep apnea. Who is at risk? What are the symptoms and long term complications?
   b. Describe the mechanisms that are in place that allow one to maintain and protect the lower respiratory tract (i.e., DDx of aspiration)

c. Describe the signs and symptoms that might arise due to the presence of an infection/mass lesion (structural abnormality or loss of function, e.g., carcinoma of the tongue base) in this area (i.e., the effect on swallowing, breathing, phonation, pain, foreign body sensation, odynophagia, referred otalgia)

g) Larynx and Upper Airway
   a. Describe the supraglottic region and understand that it extends up into the pharyngeal airway and thus pathology in this region presents in a way similar to other pharyngeal airway pathologies
   b. Formulate a DDx for dysphonia (hoarseness)
   c. Demonstrate knowledge of the different types of stridor that present from the different sites of the upper airway
   d. Describe the acute management of upper airway obstruction using positioning, artificial airways, and tracheotomy

h) Oral Cavity and Pharynx
   a. Outline the three phases of swallowing with emphasis on the oro-pharyngeal phases for ENT purposes
   b. Demonstrate a basic knowledge of dental abnormalities as they might be included as the primary cause of oral symptoms and signs
   c. Have knowledge of the DDx of mucosal lesions in the oral cavity
   d. Demonstrate knowledge of the differential diagnosis of dysphagia
   e. Show an understanding of the lymphatic drainage of the oropharynx as a route of metastatic spread

i) Salivary Glands
   a. Demonstrate knowledge of the anatomy of the three major salivary glands
   b. Discuss the DDx of salivary gland swelling (single gland, multiple glands)

j) Congenital Masses
   a. The DDx of congenital lesions found in the neck (midline and lateral), and have knowledge of the pertinent embryology

k) Lymphatics
   a. The anatomy (nomenclature) of the regional lymph nodes
   b. The importance of the regional lymphatic drainage and its relevance in the DDx of primary lymph node pathology
   c. Other pathologic entities that might occupy a lymph node
   d. The importance of a thorough head and neck functional inquiry in investigating a possible metastatic neck mass from a primary in the upper aerodigestive tract (the functional inquiry often leads to the primary site of pathology)
   e. Risk factors in developing H&N cancer malignancies
   f. General principles in the treatment of H&N squamous cell malignancies and the multidisciplinary nature of H&N cancer treatment
   g. Quality of life issues inherent in choosing or not choosing different treatment modalities

l) Thyroid Viscera
   a. The anatomy of the thyroid gland
   b. DDx of a thyroid mass (functional *vs* neoplastic) for ENT emphasis on neoplastic thyroid abnormalities

D) <u>Evaluation</u>

During the student's elective period, the consultants and residents with whom the student has spent time will complete evaluations. All evaluations are reviewed and compiled by the Undergraduate Director and a report is made available to the student at the end of the rotation on One45.

An outgoing interview will take place with the ENT On-site Chief of the hospital in which the student spends his last week of elective in order to answer further questions the student may have, and to provide the student with an overall assessment from the department.

E) Type of Clinical Experience

In patient	( )
Out Patient	( )
Both	(x)

F) Night and Weekend Call

Yes	(x)

G) Evaluation Procedure

Written Exam	( )
Oral Exam	( )
Informal Clin. Eval.	(x)

Note: Registration is NOT through the lottery.

PAEDIATRICS

Academic Director UGE:	Dr. Mark Awuku
Education Assistant:	Linda Wright, lindaw@uwindsor.ca, 519-254-5577 ext. 56424
Office Location:	Windsor Regional Hospital, 3rd Floor, Schulich Office

A) General Description

Clinical Paediatrics – Office, Emergency, Newborn & Ward:

Clinical paediatric electives are located at Windsor Regional Hospital. Students will work closely with paediatricians and may be involved in one or more of the following activities.

- caring for patients in the outpatient subspecialty and general paediatric clinics
- caring for patients in the Emergency Department
- caring for patients on the inpatient unit in the form on consultations or on-going care
- being on-call
- attending rounds
- presenting rounds

B) **GENERAL LEARNING OBJECTIVES**

1. To put into practice and build upon the clinical skills acquired during the paediatric clerkship.

2. To expand upon knowledge of paediatrics and paediatric subspecialties through interaction with medical staff, residents, interns and reading, stimulated by patient exposure in paediatric offices, the hospital Emergency Department and the wards.

3. To develop problem solving skills by first contact with a spectrum of more common paediatric problems.

The student is able to:

- Demonstrate proficiency in acquiring a complete and accurate paediatric history with consideration of the child's age, development, and the family's cultural, socioeconomic and educational background.
- Describe differences between the medical management of paediatric patients versus adult patients.
- Recognize an acutely ill child and describe an initial management plan.
- Demonstrate an approach (the generation of a differential diagnoses, appropriate initial diagnostic investigations, and management plan) to the following core clinical paediatric presentations:

** Listed under each core clinical paediatric presentation are key topics/conditions. The key conditions are neither a differential diagnosis nor a scheme (approach to the clinical presentation). The highlighted conditions are those that may be unique to paediatrics, that are essential, or that are common. Some conditions could have different presentations, but for simplicity are listed under one core presentations. **

Paediatric Health Supervision

- Infant / child nutrition
- Colic
- Infant sleeping

- Injury prevention
- Healthy active lifestyle
- Immunizations
- Normal development

Newborn

- Prematurity
- Transition from intrauterine to extrauterine environment with respect to:
  - Temperature regulation
  - Cardiac / respiratory physiology
  - Glucose regulation
  - Initiation of feeding

Neonatal Jaundice

- Biliary atresia
- TORCH infections
- Neonatal hepatitis
- Sepsis
- Breast feeding jaundice
- Breast milk jaundice
- Physiologic jaundice
- Birth trauma/bruising
- Isoimmune/hemolysis
- Kernicterus

Fever

- Kawasaki Disease
- Meningitis
- Sepsis
- Occult bacteremia

Dehydration

- Mild / moderate and severe dehydration
- Diabetes / Diabetic ketoacidosis

Respiratory Distress/Cough

- Pneumonia
- Bronchiolitis
- Asthma
- Cystic fibrosis
- Pertussis
- Croup
- Foreign body
- Epiglottitis
- Congestive heart failure
- Anaphylaxis

Developmental & Behavioral Problems

- Autism / Pervasive developmental delay

- Attention deficit hyperactivity disorder
- Isolated and global developmental delay
- Down Syndrome
- Fetal alcohol syndrome
- Common behavioral challenges (temper tantrums, sleep problems)

Growth Problems
- Failure to thrive
- Hypothyroidism
- Precocious and delayed puberty
- Short and tall stature
- Obesity
- Anorexia
- Turner's syndrome

Inadequately Explained Injury (child abuse)
- Physical, sexual, neglect and domestic violence

Abdominal Pain
- Appendicitis
- Intussception
- Constipation
- Recurrent abdominal pain of childhood

Vomiting
- Viral gastroenteritis
- Pyloric stenosis
- Malrotation / volvulus
- Gastroesophageal reflux disease

Diarrhea
- Viral and bacterial enteritis
- Inflammatory bowel disease
- Cow's milk protein intolerance
- Toddler's diarrhea

Altered Level of Consciousness - Seizure/Paroxysmal Event
- Epilepsy
- Febrile seizures
- Syncope
- Poisoning / intoxication
- Head injury / concussion
- Hypoglycemia
- ALTE
- Breath holding spell

Headache
- Migraine
- Brain tumor

- Increased ICP

Murmur and/or Cyanosis

- Innocent murmurs (Stills and venous hum)
- VSD
- Coarctation of the aorta
- ASD
- Tetralogy of Fallot
- Transposition of the great arteries

Rash

- Cellulitis
- Varicella
- Atopic dermatitis
- Diaper dermatitis
- Viral exanthems
- Scarlet fever
- Scabies
- Acne
- Impetigo
- Seborrhea
- Urticaria

Bruising & Bleeding

- Leukemia
- Pancytopenia
- Hemophilia
- Von Willebrand disease
- Idiopathic thrombocytopenic purpura

Pallor (anemia)

- Iron deficiency
- Anemia of chronic disease
- Hemolysis
- Inherited hemoglobinopathies (sickle cell anemia and thalassemia)

Lymphadenopathy

- Reactive / benign
- Cervical adentitis
- Malignancy (leukemia / lymphoma)
- Mononucleosis

Limp/Extremity Pain

- Osteomyelitis
- Septic arthritis
- Transient synovitis
- Developmental dysplasia of the hip
- Legg Calve Perthes disease

- Slipped capital femoral epiphysis

Urinary Complaints (polyuria/frequency/dysuria/hematuria)

- Diabetes / diabetic ketoacidosis
- Urinary tract infection
- Enuresis
- Post infectious glomreulonephritis
- Henoch-Schonlein purpura

Edema

- Nephrotic syndrome – minimal change disease

Sore Ear

- Otitis media and externa

Sore Throat/Sore Mouth

- Pharyngitis
- Peritonsillar and retropharyngeal abscess
- Thrush

Sore Eye/Red Eye

- Periorbital/orbital cellulitis
- Conjunctivitis

Demonstrate competence with the following paediatric physical examination skills in addition to general physical examination skills:

- Position and immobilize patient for certain physical exam skills
- Measure and interpret height, weight, head circumference (including plotting on growth curve and calculation of BMI)
- Measure and interpret vital signs
- Palpate for fontanelles and suture lines
- Perform red reflex and cover-uncover test
- Perform otoscopy
- Inspect for dysmorphic features
- Elicit primitive reflexes
- Inspect for and describe common newborn skin rashes
- Assess for features that distinguish innocent from organic murmurs
- Perform infant hip examination
- Assess the lumbosacral spine for abnormalities
- Assess for scoliosis
- Palpate femoral pulses
- Examine external genitalia
- Assess for sexual maturity rating (Tanner staging)

C) **Type of Clinical Experience**

In Patient ( )
Oral Exam ( )
Both (xx)

D) **Night and Weekend Call**

Yes	(xx)
No	( )

E) **Evaluation Procedure**

Written Exam	( )
Out Patient	( )
Informal Clin. Evaluation	(xx)

F) **Number of Students Accepted**

1 student each block.

PATHOLOGY

Academic Director: Dr. Wassim Saad
Coordinator: Dr. David Shum
Contact: Nadia Hachem
Hotel Dieu Grace Hospital Rm 5.469
Tel: 519 973-4411 ext 3380
Email: nadiah@uwindsor.ca

ELECTIVES IN PATHOLOGY ARE NOT PART OF THE LOTTERY.

DESCRIPTION:

A) General Description

The Department of Pathology offers an option in Clinical Anatomical Pathology to 4th year medical students during all blocks (September-December). The student may initially observe and later participate in the routine activities of the Clinical Department of Pathology, including participation in autopsies and examination of gross and microscopic specimens. The student will be assigned to a staff pathologist for direction and supervision. The supervisor will negotiate with the student the terminal objectives of the rotation and the students learning goals.

B) **Learning Objectives**

1) Learn to use light microscope.
2) Start to acquire familiarity with normal histology and basic histopathological features.
3) Observe and assist pathologist and/or resident with surgical dissection.
4) Begin to learn methods of tissue sampling for histology.
5) Examine slides for selected routine cases and review cases with residents and/or pathologist.
6) Observe the technique and approach to frozen section diagnosis.
7) Attend autopsies; observe and assist pathologist and/or resident with dissection.
8) Be able to recognize abnormal gross autopsy findings and to correlate with pathophysiology and cause of death.
9) Learn how to submit specimens properly to pathology.
10) Learn what constitutes valid consent for autopsy.
11) Be able to review a patient chart and present a coherent summary prior to starting an autopsy.
12) Understand scenarios where the coroner may need to be contacted.
13) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients and pathologists
14) Identify the rights and legal responsibilities of physicians to patients and the community.
15) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
16) Understand the specialist's role in representing the patient's best interests with respect to disease prevention and advocating for socio-economic factors to improve health.
17) Understand the specialist's role in community intervention with regard to disease prevention.
18) Demonstrate skill in self-directed learning by:
    i. Ability to identify areas of deficiency in one's own knowledge and skills.
    ii. Ability to find appropriate educational resources.
    iii. Ability to evaluate personal learning progress.
    iv. Ability to use new knowledge in the care of patients.
19) Determine the validity and applicability of published data through critical appraisal.

20) Begin reading a standard basic pathology textbook, e.g., *Robbin's Pathologic Basis of Disease*.
21) Read around autopsy and surgical cases.
22) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
23) Demonstrate skill in finding common ground when differences of opinion exist.
24) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
25) Demonstrates honesty and trustworthiness in assessment, study and learning.
26) Demonstrates responsibility and respect.
27) Be willing to seek help, advice or consultation when needed.
28) Respond to personal and family needs and develop effective support systems.
29) Understand the role of the anatomical pathologist as a member of the health care team, providing timely, high quality service to patients and clinicians.
30) Use the concepts of evidence-based medicine to guide patient care decisions.
31) Identify potential conflict between individual and population interests and seek advice from others.
32) Assess the effectiveness of practice and engage in continuous quality improvement.

C) **Requirements**

You must be N95 Mask Test Fitted **prior to your elective**, this is mandatory for the autopsy suite. If for some reason you have not been previously fitted, please contact Occupational Health and Safety at LHSC (Ext. 33201) or drop in for a calendar of fitting dates to: Room B3-109, 3rd Floor, LHSC-UH.

C) **Type of Clinical Experience**

In Patient	( )
Out Patient	( )
Both	(x)

D) **Night and Weekend Call**

Not necessary but available

E) **Evaluation Procedure**

Written Exam	( )
Oral Exam	( )
Informal Clinical Exam	( )
Formative Evaluation	(x)

G) Number of Students Accepted

Subject to space constraints.

Note: Registration is NOT through the lottery.

PHYSICAL MEDICINE AND REHABILITATION

Academic Director: Dr. Wassim Saad
Contact: Nadia Hachem
Hotel Dieu Grace Hospital Rm 5.469
Tel: 519 973-4411 ext 3380
Email: nadiah@uwindsor.ca

DESCRIPTION

A. General Description

1. Exposure to rehabilitation concepts and experience in musculoskeletal and neuromuscular disorders. The in-patient services (stroke, head injury, spinal cord injury, orthopaedic, amputee) to strengthen and provide skills to assess disability across a broad spectrum of diseases including: hemiplegia, cognitive dysfunction paraplegia, tetraplegia, amputated limbs, chronic pain, brain injury.

2. **Out-Patient Clinics**
Offers exposure to upper and lower extremity impairments, orthotics, amputees, general rehabilitation, neuromuscular impairments, sport medicine, occupational medicine, electrodiagnostic medicine, spinal cord injury, traumatic brain injury and stroke.

3. **In-Patient Services**
Multi-disciplinary and inter-disciplinary rehabilitation teams in the assessment and treatment of stroke, neuro-locomotor, amputee, traumatic brain injury, spinal cord injury and orthopaedic rehab.

B. **Objectives**

1) Perform a screening neuromusculoskeletal examination as part of a general physical examination, when appropriate.
2) Understand concepts of impairment, disability, and handicap and be able to apply them.
3) Perform a detailed and organized musculoskeletal examination, including muscle strength testing, active and passive range of movement testing, and gait analysis, when needed.
4) Provide an effective differential diagnosis when presented with a patient with back pain, neck pain, extremity regional pain, hand numbness, localized weakness, and localized tenderness.
5) Recommend pertinent modalities and exercises.
6) Refer for an electrodiagnostic study to physiotherapy, occupational therapy, speech-language pathology, social services, psychology, vocational assessment, or pastoral care, when appropriate.
7) Refer a patient to a physiatrist, if appropriate, using a useful referral note.
8) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
9) Develop relationships with patients characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
10) Perform a physical examination without causing the patient embarrassment.
11) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.
12) Demonstrate skill in communication of information with clear, concise explanations that are understandable to patients.
13) Recognize risk factors and be able to counsel patients on risk reduction.

14) Identify the rights and legal responsibilities of physicians to patients and the community.
15) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
16) Apply the concept of cost-effectiveness to public health interventions.
17) Demonstrate skill in self-directed learning by:
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.
    d. Ability to use new knowledge in the care of patients.
18) Determine the validity and applicability of published data through critical appraisal.
19) Demonstrate the ability to work effectively as a member of a team, as participant or leader.
20) Collaborate effectively with patients and families without having to take charge.
21) Demonstrate skill in finding common ground when differences of opinion exist.
22) Establish effective relationships with colleagues and other member of the health care team by:
    e. Considering their suggestions and criticisms.
    f. Tactful handling of differences of opinion.
23) Demonstrates the ability to place the needs of patients and families first.
24) Demonstrates honesty and trustworthiness in assessment, study and learning.
25) Demonstrates responsibility and respect.
26) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
27) Be willing to seek help, advice or consultation when needed.
28) Respond to personal and family needs and develop effective support systems
29) Assist patients in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
30) Use the concepts of evidence-based medicine to guide patient care decisions.
31) Identify potential conflict between individual and population interests and seek advice from others.
32) Assess the effectiveness of practice and engage in continuous quality improvement.

C. Type of Clinical Experience
In-patient and Out-patient.

D. Night and Weekend Call
Yes ( ) No (xx)

E. Evaluation Procedure
Written and Informal

<u>Note</u>: Registration is NOT through the lottery.

PSYCHIATRY

Academic Director UGE: Dr. Mark Awuku
Education Assistant: Linda Wright, lindaw@uwindsor.ca, 519-254-5577 ext. 56424

YOU MAY TAKE TWO or FOUR WEEK ELECTIVES IN PSYCHIATRY

B. GENERAL DESCRIPTION

Clinical electives can be arranged for students in most areas of psychiatry:

- Child & Adolescent
- General Adult
- Geriatric
- Psychosis
- Mood & Anxiety Disorders
- Consultation-Liaison
- Addictions
- Forensics

B. LEARNING OBJECTIVES

Psychiatry is a broad based specialty and so the learning objectives for an elective will depend on the orientation of the staff person and team with whom the student is involved. For example, involvement on a general inpatient ward, attachment to an early intervention program for psychosis, participation in a consultation-liaison service, or work with someone specializing in neuropsychiatry constitute four very different learning experiences (and these are only four of many different possibilities).

1) Demonstrate knowledge regarding the proposed etiology, clinical features, differential diagnosis and various treatment modalities for the following adult and child/adolescent psychiatric conditions:
    a. **Psychotic Disorders**: Schizophrenia, Schizophreniform Disorder, Schizoaffective Disorder, Drug-Induced Psychotic Disorder
    b. **Mood Disorders**: Major Depressive Disorder, Bipolar Disorder
    c. **Anxiety Disorder:** Generalized Anxiety Disorder, Obsessive-Compulsive Disorder,
    d. **Substance Use Disorders:** Substance Abuse, Substance Dependence, Intoxication and Withdrawal Syndromes
    e. Personality Disorders
    f. **Eating Disorders, Psychosomatic Disorders**.
    g. **Child/Adolescent Psychiatric Disorders:** ADHD, Anxiety and Mood Disorders. Developmental Disorders
2) Complete a basic psychiatric interview and mental status examination.
3) Learn effective preventive and therapeutic interventions in psychiatry.
4) Learn the ethical, legal, and professional aspects of psychiatric practice that are of particular relevance to the specialty.
5) Conduct patient-centered interviews that explore the patient's feelings, ideas, impact on function, and expectations.
6) Develop relationships with the patient characterized by compassion, empathy, respect, and genuineness, demonstrating a willingness to collaborate with the patient about management.
7) Perform a physical examination without causing the patient embarrassment.
8) Adapt treatment plans to the individual with consideration for the patient's age, general health, special needs, expectations, cultural background, progress, or changes in condition.

9) Write progress notes on patients that communicate accurately the patient's condition and treatment plan.
10) Demonstrate skill in communicating information with clear, concise explanations that are understandable to patient.
11) Recognize risk factors and be able to counsel the patient on risk reduction.
12) Identify the rights and legal responsibilities of physicians to the patient and the community.
13) Describe the determinants of health and apply them appropriately to enhance individual and community well being.
14) Apply the concept of cost-effectiveness to public health interventions.
15) Perform competent psychiatric assessments that will:
16) Effectively identify and explore significant mental health issues in patient encounters.
17) Elicit and explore patient concerns to construct a history that is relevant and accurate.
18) Demonstrate an understanding of developmental issues in the life cycle and the importance of the interaction between patient and the patient's family.
19) Use a variety of interview techniques to elicit and explore patient concerns and to respond appropriately and empathically to significant cues from the patient to deliver compassionate and patient-centred care.
20) Elicit and understand the issues from a patient's history that are amenable to psychotherapeutic interventions.
21) Provide a clear and concise oral presentation of a patient's history and mental status examination.
22) Demonstrate effective clinical reasoning, interpreting biological, social and psychological data and integrating information to generate a differential diagnosis and management plan.
23) Conduct an assessment of risk of harm to the patient or others.
24) Employ the bio-psycho-social model in understanding a patient's unique circumstances and in developing a comprehensive treatment plan which will engender the
25) Ability to diagnose primary psychiatric disorders.
26) Ability to recognize psychiatric disorders that are secondary to medical illness, the result of treatment for medical illnesses, or due to substance misuse.
27) Ability to select medically appropriate investigations to distinguish primary from secondary psychiatric disorders, particularly the value of a thorough history and physical exam.
28) Ability to understand the rational use of psychotropic medication.
29) Ability to recognize and address the psychosocial factors related to psychiatric illness.
30) Ability to identify which types of psychotherapy are suitable for particular patient issues.
31) Ability to recognize the factors interfering with treatment adherence, including lifestyle choices, neglect of personal care, barriers to treatment, and side effects of psychotropic medications, as well as strategies aimed at improving compliance.
32) Ability to develop an approach to the immediate management of psychiatric emergencies, such as in the Emergency Department or in a crisis situation in inpatient or outpatient settings.
33) Understand the ethical, legal and professional aspects involved in psychiatric practice by learning
34) The Code of Ethics developed by the Canadian Medical Association and abiding by it.
35) The special aspects of the doctor-patient relationship that take place in psychiatry
36) How boundary crossings and violations can undermine professionalism in the delivery of psychiatric care.
37) To understand how personal biases can influence the provision of psychiatric care, and that the doctor-patient relationship is a dynamic one with reciprocal influences.
38) To use one's own emotional responses to more fully understand patients and to more appropriately provide psychiatric care.
39) The basics of the Mental Health Act, obtaining informed consent, and how to conduct various capacity assessments.
40) Demonstrate skill in self-directed learning by developing the
    a. Ability to identify areas of deficiency in one's own knowledge and skills.
    b. Ability to find appropriate educational resources.
    c. Ability to evaluate personal learning progress.

d. Ability to use new knowledge in the care of patients.

41) Determine the validity and applicability of published data through critical appraisal.
42) Demonstrate the ability to work effectively as a member of a multidisciplinary team, as participant or leader.
43) Collaborate effectively with the patient and the patient's family.
44) Demonstrate skill in finding common ground when differences of opinion exist.
45) Establish effective relationships with colleagues and other member of the health care team by:
    a. Considering their suggestions and criticisms.
    b. Tactful handling of differences of opinion.
46) Demonstrate the ability to place the needs of the patient and the patient's family first.
47) Demonstrate honesty and trustworthiness in assessment, study and learning.
48) Demonstrate responsibility and respect.
49) Recognize personal biases and ensure that they do not interfere with the patient's best interests.
50) Be willing to seek help, advice or consultation when needed.
51) Respond to personal and family needs and develop effective support systems.
52) Assist the patient in accessing the health care system for physical, psychological, social, and economic rehabilitation or long-term care.
53) Use the concepts of evidence-based medicine to guide patient care decisions.
54) Identify potential conflict between individual and population interests and seek advice from others.
55) Assess the effectiveness of practice and engage in continuous quality improvement

C. TYPE OF CLINICAL EXPERIENCE

Inpatient	( )
Outpatient	( )
Both	(X)

D. NIGHT AND WEEKEND CALL

Students are NOT required to participate in Call. Calls are available if requested.

E. EVALUATION PROCEDURE

The evaluation is based on the student's clinical performance during the rotation and during a structured clinical assessment. The Schulich School of Medicine and Dentistry Electives Assessment form must be completed with a summative evaluation being a pass.

<u>Note</u>: Registration is NOT through the lottery.

SURGERY

Academic Director: Dr. Andrew Petrakos
Education Assistant: Bev Nicholls
PHONE: 519 254-5577 ext 52507
EMAIL: beverlyn@uwindsor.ca
OFFICE LOCATION: Windsor Regional Hospital Rm 4306

Introduction

Fourth year student Clinical Science Electives in the practice of surgery are offered Windsor Regional Hospital and Hotel Dieu Grace Hospital for a period of two to four weeks and are designed to give the student exposure to clinical areas of his/her interest in any of the following surgical services: Cardiac Surgery, General Surgery, Orthopaedic Surgery, and Urology.

General Description

Students are integrated into the surgical team and assist in all aspects of patient care. Depending on the service, students will be expected to take part in ward rounds, clinics and observe and assist in operative procedures, as well students may be expected to attend resident teaching.

Number of Students per block – General Surgery only is 1 student per block, all other sugery specialties are not in the lottery

Surgery Objectives

Surgery Objectives

1. Medical Expert

a) For each of the clinical conditions listed below, the student will able to:
Describe the relevant aspects of the common surgical illnesses and clinical problems, listed below, according to the following headings:

i. Definition
ii. Epidemiology
iii. Causes, including a consideration of each of the following factors:
- biological
- psychological
- social

iv. Pathogenesis and pathophysiology
v. Clinical features and complications
vi. Investigations required to confirm a diagnosis
vii. Management, including:
- medical
- surgical
- involvement of allied health care professionals
- nutritional

viii. Prognosis

I. <u>General Surgery</u>
a. Anal disease and lower gastrointestinal bleeding

b. Upper gastrointestinal bleeding
c. Appendicitis
d. Inflammatory bowel disease
e. Biliary tract disorders of benign, malignant and congenital etiology
f. Pancreatic disorders of benign, malignant and congenital etiology
g. Acute abdominal pain and peritonitis
h. Bowel obstruction and abdominal wall hernia
i. Breast disease of benign and malignant etiology
j. Colorectal disorders of benign and malignant etiology
k. Disorders of the thyroid, parathyroid, and adrenal glands
l. Disorders of the spleen and liver and portal hypertension
m. Blunt and penetrating trauma.

II. Pediatric General Surgery
a. gastrointestinal obstruction and developmental anomalies
b. common abdominal wall, inguinal and scrotal disorders
c. common pediatric tumours.

III. Plastic Surgery
a. Common skin lesions, both benign and malignant
b. Facial trauma
c. Burns
d. Hand injuries including infections, fractures and lacerations.

IV. Urology
a. Genitourinary trauma
b. Prostate disorders both benign and malignant
c. Common congenital and developmental urologic disorders
d. Urolithiasis
e. Neurogenic bladder
f. Urologic tumours including kidney, collecting system, bladder and scrotum

V. Neurosurgery
a. Acute spinal cord injury
b. Cerebral trauma and hemorrhage
c. Neurologic tumours

VI. Orthopaedic Surgery
a. Musculoskeletal infections and tumours
b. Ligament Injuries and dislocations and musculoskeletal exam
c. Fracture care
d. Surgical principles of arthritis
e. Orthopedic trauma
f. Principles of pediatric orthopedics
g. Disorders of the lumbo-sacral spine

VII. Thoracic Surgery
a. Benign and malignant disorders of the stomach and esophagus
b. Tumours, infections and common disorders of lung, mediastinum, and pleural space.

VIII. Cardiac Surgery
   a. Coronary artery disease
   b. Valvular heart disease .

IX. Vascular Surgery
   a. Cerebrovascular disease
   b. Aortic aneurysms
   c. Limb ischemia both acute and chronic
   d. Renal and mesenteric arterial occlusive disease.

X. Anesthesia
   a. Fluids, electrolytes, and acid-base management
   b. General anesthesia and monitoring
   c. Pre-anesthetic assessment and preparation
   d. Regional anesthesia including obstetrics and post-operative pain
   e. Respiratory failure and airway management.

XI. Peri-operative Care
   a. Surgical nutrition
   b. Shock and surgical infection
   c. Wound closure and healing
   d. Preparation for surgery
   e. Common post-operative problems.

b) Technical Skills

i. Surgical procedures that each student should become familiar with during a Surgical Clerkship rotation include:

- OR sterile technique
- Wound closure (simple)
- Suture removal
- N.G. tube
- I.V.
- Airway management and intubation
- Uretheral catheter
- Local anaesthesia*
- Casting (e.g., splinting, traction etc).

Type of Clinical Experience
Inpatient and Outpatient

Call Expectations
Night and weekend call will vary depending on the service.

Evaluation Procedure
This will be based on observation of the student's performance.

CARDIAC SURGERY OBJECTIVES

Similar to all surgical specialties, cardiac surgery has its routine and commonly encountered cases. There is also a variety of cases we see and operations performed that are quite atypical, unusual and rare. Because you are only on service for two weeks, the cases you will be involved with can vary considerably. You can certainly expect to participate in cases of coronary revascularization as well as valve repairs and replacements. Other cases with which we deal include, but are certainly not limited to, ascending aortic and arch reconstruction, ventricular remodeling, endocarditis, transplantation, cardiac tumours, congenital abnormalities and trauma. While much of your learning will focus on cases encountered during your rotation, it is important to achieve a good basic understanding of common cardiovascular diseases with which you will be confronted regardless of your chosen specialty. This would include identifying common cardiac disease and corresponding patient presentations/symptoms, natural history and management strategies. Below is a list of some of the goals and objectives we would expect you to achieve throughout your rotation.

1. Medical Expert

a) Pre-Operative Cardiac Surgery History and Physical Examination
    a. Review cardiac risk factors in conjunction with past medical history
    b. CCS classification of Angina
    c. NYHA classification of shortness of breath
    d. Perform complete cardiac surgery inpatient history and physicals
    e. Attend outpatient clinic with consultants on your team.

b) Basic Understanding of Cardiac Surgery Patients
    a. Indications of coronary artery bypass grafting
        i. What are possible graft conduits used for CABG
    b. Understand the rationale, indications, and benefits/drawbacks to various management strategies for coronary disease, including CABG, percutaneous coronary intervention and medical management.
    c. Approaches to coronary surgery
    d. Aortic valve diseases and indications for aortic valve surgery
        i. Options for aortic valve replacement (review the types of aortic valves and indications for each type (i.e., bioprosthetic *vs* mechanical)
    e. Indications for mitral valve repair or replacement
    f. Robotic heart surgery

c) Basic Understanding of Intra-Operative Cardiac Surgery Techniques
    a. Obtain a basic overview of cardiopulmonary bypass
    b. Intra-operative monitoring
    c. Review the waveform of CVP
    d. What is MAP? How do you calculate it?
    e. What is Cardiac Index?
    f. How does Heparin work? What is ACT? What is a good ACT for starting CPB?
    g. What is Protamine? What is Coumadin? What is Plavix?
    h. Review of Gross Anatomy of:
        i. Chambers of heart
        ii. Electrical pathway of heart
        iii. Aortic/Mitral/Pulmonic valves
        iv. Branches of great vessels of heart
        v. Review angiogram with resident and review all branches of coronary arteries
        vi. Understand coronary artery dominance and its relevance

d) Basic Understanding of Post-Operative Management of Cardiac Surgery Patients
    a. Inotropic medications and their mechanisms of action
    b. Routine post-op ward and ICU management
e) Basic Surgical Skills
    a. Surgical assistance
    b. Proper handling of surgical instruments
    c. Performing simple interrupted and running sutures and placing skin staples
    d. Knot tying
f) Management of Specific Cardiac Surgery Issues
    a. Post-operative atrial fibrillation
    b. Chest pain
    c. Shortness of breath
    d. Low urine output
    e. Cardiac tamponade
    f. Post-operative bleeding
    g. Review treatment of NSTEMI, STEMI, cardiogenic shock
    h. What is an IABP and how does it work
g) What is a Type A and Type B aortic dissection?
    a. How are they treated
h) Clinical Signs of Endocarditis
    a. Acute *vs* subacute endocarditis
    b. Treatment options
i) The remainder of assessment will be based on CANMEDS protocol.

GENERAL SURGERY OBJECTIVES

1. Medical Expert

A. General

a) Participate as a full member of the General Surgery team during ward rounds, teaching rounds, clinics, operating room and participate in daily clinical duties.
N.B. On the first day, the clerk should discuss the weekly schedule with the senior resident or consultant on his/her respective team.

b) Gain knowledge of the anatomy, physiology and pathophysiology of common general surgical problems, including trauma.

c) Learn how to take a detailed history, evaluate (physical examination and ancillary tests) and develop a management plan for patients presenting with common general surgery problems as well the multiply injured trauma patient.

B. Knowledge

a) Have a basic understanding of the peri-operative evaluation of the surgical patient (including fluids and electrolytes, nutrition and common post-operative complications).

b) Have a basic knowledge of the anatomy and physiology of the GI tract, endocrine systems (thyroid, adrenal, parathyroid), breast and hernias

c) Have a basic understanding of the presentation, investigation and management of the following common general surgery problems:
ix) the acute abdomen
x) gallbladder disease
xi) hernias

xii) perianal disease
xiii) colorectal cancer
xiv) breast cancer
xv) endocrine disorders (thyroid, parathyroid and adrenal)
xvi) trauma patient

C. Skills

a) Take appropriate history and physical exam on general surgery patients in both elective and emergent scenarios.

b) Establish a management plan based on appropriate consideration of conservative, medical or surgical options for the disease process.

c) Participate in the operating room and show appropriate skills and attitudes to:

vi. Prep and drape a sterile field
vii. Insert urethral catheter (Foley)
viii. Insert naso-gastric tube
ix. Identify pertinent operative anatomy
x. Perform basic surgical techniques (retraction, tissue handling, and basic suturing).

Number of Students per block – General Surgery is 1 student per block

ORTHOPAEDIC SURGERY OBJECTIVES

1. Medical Expert

a) Cognitive Skills – understand and describe
    a. Pathophysiology
        i. Fracture healing and response to injury
        ii. Soft tissue healing
        iii. Infection: bone, joint
        iv. Arthritis: non-inflammatory, inflammatory

b) Psychomotor and Affective Skills – perform
    a. Proficient History
        i. Patient-centred
        ii. Accurate documentation
    b. Demonstrate Examination
        i. Anatomic landmarks
        ii. Range of motion
        iii. Peripheral nerves
        iv. Joint instability: paediatric hip, adult knee & shoulder
    c. Patient Care: Emergency Room, Ward and Clinic
        i. Administration of analgesics
        ii. Closed reduction techniques (fractures and dislocations)
        iii. Splint and case immobilization
        iv. Aspiration and injection
        v. Utilization of investigations
        vi. Establish treatment plan for common disorders

UROLOGY SURGERY OBJECTIVES

a) An understanding of the relevant anatomy, physiology and pathophysiology of patients' clinical conditions encountered during the selective.
b) Able to perform a thorough history and physical examination on patients assessed in the outpatient clinic and emergency department.
c) Able to present the case history of patients assessed in clinic in a concise manner, and to propose differential diagnoses and possible treatment strategies.
d) Able to perform urethral catheterization and minor suturing under supervision.
e) An understanding of the relevant investigations and indications for intervention of the following urologic conditions:
    i. Benign prostatic hyperplasia
    ii. Prostate cancer
    iii. Urinary tract infections
    iv. Erectile dysfunction
    v. Infertility
    vi. Urinary incontinence
    vii. Urinary stone disease
    viii. Bladder cancer
    ix. Kidney cancer
    x. End-stage renal failure
    xi. Enuresis

VASCULAR SURGERY OBJECTIVES

A. General

a) Participate as a full member of the vascular surgery team during ward rounds, teaching rounds, clinics, operating room and participate in daily clinical duties.
b) Learn how to evaluate and treat vascular surgery patients and to understand the systemic nature of atherosclerosis.

B. Knowledge

a) Have a basic understanding of the systemic nature of atherosclerosis and the medical management of vascular surgery patients.
b) Have a basic understanding of what an aneurysm is and the indications for repair as well as treatment options.
c) Have a basic understanding of the indications for intervention in carotid artery disease and the treatment options.
d) Have a basic understanding of the classification of peripheral vascular disease and to understand the indications for intervention and the treatment options.
e) Have a basic understanding of venous and lymphatic disease.

C. Skills

a) Take an appropriate history and physical exam of vascular surgery patients.
b) Order the appropriate investigations for vascular surgery patients.
c) Scrub in and assist in vascular surgery cases.
d) Develop basic suturing, tissue handling and surgical techniques.

Number of Students per block – General Surgery only is 1 student per block, all other surgery specialties are not in the lottery

MEDICAL ELECTIVES OVERSEAS PROGRAMME

Program Director: Dr. Shiva Kalidindi drshiva@gmail.com 519-661-2111 ext. 89135
Program Coordinator: Hélène Lau helene.lau@schulich.uwo.ca 519-661-2111 ext. 89135
Office Location: Health Sciences Addition H 041

Global Health Office Website: www.schulich.uwo.ca/globalhealth

Learning Objectives

After completion of this international experience, you should be able to:

- Describe the natural history of disease, particularly not seen on our continent
- Relate how social and economic factors to the cause, treatment, and prevention of disease and be able to incorporate the root causes of health issues and health outcomes, including the various determinants of health, in a case presentation.
- Identify barriers to effective health care, whether they be attitudinal, infrastructural, training-oriented, resource-centered, or any combination thereof.
- Give examples of use of clinical skills with limited laboratory aids.
- Demonstrate sensitivity to the needs of different and vulnerable communities, and to reflect on services to deal with these needs
- Demonstrate knowledge of basic global health elective principles, including cultural competency, personal health and safety, the need for basic language competency, and ethics and community building.
- Identify ways in which different health disciplines can collaborate and cite examples where you saw the value of inter-professional care.
- Describe the Royal College of Family Physicians' CanMEDs Framework and Competencies (medical expert, communicator, collaborator, manager, health advocate, scholar and professional) as it relates to populations to which you have been exposed.

It is important that the office of global health is aware of all overseas plans months in advance, and that contact information is provided, forms are filled, and all pre-departure training is completed. All electives need to be approved by the global health and undergraduate medical office. Failure to do so may result in denied permission to participate in a credited and insured experience. Let us know as soon as possible so we can send forms to your preceptors prior to your elective.

Students who are considering an overseas elective are required to attend a "Pre-departure Training Conference", which is arranged through the Global Health Education office (http://www.schulich.uwo.ca/globalhealth/predepartureresources).

Please provide the date, location, and preceptor of your location to the Program Director and Coordinator by email.

AWARDS Funding is available through the Global Health Funding Committee. There are also two awards for overseas electives.

CLINICAL ELECTIVES

Students are responsible for arranging their own overseas electives; however, the Office of Global Health has four partner sites. Therefore, there is no limit to the number of Global Health electives in any block. The program coordinator can be contacted to assist in finding an appropriate physician in partner sites, where availability may be limited.

EVALUATION

To be discussed with your preceptor. Forms are currently in development.

General Description

The Schulich School of Medicine & Dentistry has established links with several countries. However, students often find their own placements. The university prefers to have students to work within the framework of partnership between UWO and overseas institutions.
Primary sites: Antigua, **Guatemala** (also Santiago de Atitlan, Guatemala City) (Spanish required); Arusha, Mwanza, **Tanzania**; Chengdu, Huai'an, **China** (Mandarin required), Dehra Dun, New Delhi, **India**

Selection and orientation interviews with Dr. Kalidindi cover placement, funding, documentation, health protection, and orientation.

The Office of Global Health and the Department of Family Medicine must approve each placement and will evaluate any new placement to ensure that they meet the desired learning objectives and opportunities. Students not doing electives at partner sites will be required to demonstrate how the program they are going to meets program and learning objectives. Each placement will be 3 to 8 weeks long (most will be 4 weeks) and will include contact with a primary preceptor at least 40% of time.

Process

Planning at least 12 months ahead is a good goal.

1. Discuss the possibilities with Dr. Kalidindi, who will provide as much background information as possible. Fill out the application form.
2. Arrange an interview with Dr. Kalidindi for discussion of placement, funding, orientation, etc.
3. Arrange funds, approach sponsoring agencies, etc. Process documentation for country of elective. Arrange for immunizations, etc.
4. About six months before departure, be sure to contact Dr. Kalidindi to tie up loose ends, report on fundraising, etc.
5. IMPORTANT: Approximately three weeks before departure, see Dr. Kalidindi for a final briefing. At that time, provide flight details, and arrival and departure dates. AN EVALUATION FORM WILL BE GIVEN TO YOU, ALONG WITH OTHER PAPERS. THESE FORMS SHOULD BE COMPLETED DURING THE ELECTIVE. Alternatively, these forms may be attained online and e-mailed to Hélène Lau at helene.lau@schulich.uwo.ca
6. On return, make another appointment with Dr. Kalidindi as soon as possible for debriefing and discussion of the evaluation report. You may also be expected to do reflection papers and talks.

APPENDIX A - LOTTERY PLANNING FORM

Please use this form to keep a record of the choices you are making on the ONLINE Lottery.

Block 1 Sept. 6-18	Block 2 Sept. 19–Oct. 2	Block 3 Oct. 3-Oct. 16	Block 4 Oct. 17-30	Block 5 Oct. 31-Nov 13	Block 6 Nov 14-27	Block 7 Nov 28–Dec 11	Block 8 Dec 12-23

APPENDIX B-Learning Objectives

Schulich School of Medicine & Dentistry

The University of Western Ontario

London, Canada

FOURTH YEAR ELECTIVES – LEARNING OBJECTIVES

This form is to be completed and submitted to the Schulich Undergraduate Education Office **before the start of your elective rotation**. The objectives must also be reviewed and signed off by your elective rotation supervisor **at the start of your elective rotation**. You should keep a copy of this form for your mid-rotation review (rotations of 4 weeks or more) and your final assessment exit interview. Completed, signed form should be attached to the final Elective Assessment form and sent back to the UME office following elective.

PLEASE PRINT:

Name of Student: _____

Name of Elective Rotation: _____

Location: _____

Elective Rotation Supervisor: _____

Elective Rotation Dates: _____

#	Objectives - Details	Comments	Achieved? Yes / No
1	Physician as Medical Expert:		
2	Physician as Communicator/Educator:		
3	Physician as Health Advocate:		
4	Physician as Professional/Collaborator:		
5	Physician as Resource Manager:		
6	Physician as Scholar:		
7	Other Rotation-Specific Objectives:		

Note: The student is not required to have objectives identified for all categories. If objectives change after the initial meeting with the elective rotation supervisor, the updated objectives are to be forwarded to the Schulich Undergraduate Education Office. Questions – Contact Dawn MacDonald, Clinical Electives Administrator, at dawn.macdonald@schulich.uwo.ca

APPENDIX C - How the Electives Lottery Works

The lottery makes multiple "passes" of all students and their requests. The 1st time the lottery runs, the order is purely random. The system chooses one student, looks at their first choice, and processes that request as follows:

If the choice is available, the student is assigned the elective and the system then randomly chooses another student and processes their first choice the same way.

If the choice is not available, the system moves to the student's second choice in their list. If the elective is available the student is assigned that elective. If not, the system moves to the third choice. This process continues until each student has been assigned one elective.

For the second and subsequent passes:

The order that students' choices are processed is now determined by which elective the student received in the previous pass. Therefore, any student who received their first choice in the first pass, moves to the bottom of the list for the second pass. The student who received the lowest choice is first to be processed for the next pass. If there are several students who are now "ranked" the same, they will be chosen randomly.

For example:
Student A received their 1st choice in pass #1.
Student B also got their 1st choice.
Student C received their 4th choice.
Student D received their 3rd choice.
In the next pass, the system will start with Student C, then go to Student D, and then it will randomly choose between Students A and B. The order of the third pass will depend on the results of the second pass, and so on.

The process will continue until all requests have been considered.

Please note:

If a student requests the same elective (ie: Obs/Gyn block 1) 8 times, this will NOT increase the chances the student will be assigned this elective. Once the system processes the request, (either accepts or denies it) the remaining 7 requests for the same elective will be skipped.

APPENDIX D – Elective Assessment Form

MEDS 2012

NOTE: THIS IS A 6-PAGE FORM ON CARBONLESS PAPER.
PLEASE SEPARATE PAGES BEFORE COMPLETING.

THE UNIVERSITY OF WESTERN ONTARIO
Schulich School of Medicine & Dentistry

SUMMATIVE CLINICAL ELECTIVE ASSESSMENT

Academic Year 2011 – 2012

Student Name:		Student #
Elective Dates:	From:	To:
Number of Days Absent: _____ →	Academic Leave _____	Non-Academic Leave ___ Illness ____
Is the student's behaviour consistent with the CMA Code of Ethics?	☐ Yes ☐ No	For an up-to-date version of the CMA Code of Ethics, please visit: http://policybase.cma.ca/PolicyPDF/PD04-06.pdf

If not consistent, explain:

University:	Department:
Name of Supervisor (print):	
Signature of Supervisor:	
Signature of Student:	
Date:	

Note: Signature by the student indicates that the student has seen the assessment. It does not indicate that the student agrees with the assessment.

Distribution:

White original to:	Ms. Dawn MacDonald, Undergraduate Medical Education, Room 101 Medical Sciences Bldg, UWO, London, ON N6A 5C1. FAX: 516-661-4043
Pink copy to:	Student
Yellow copy to:	Department

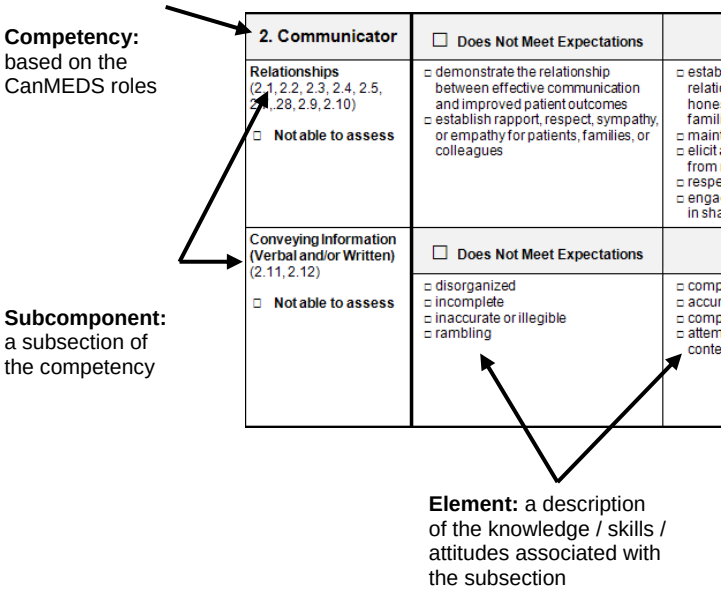
(Revised 16/08/2011)

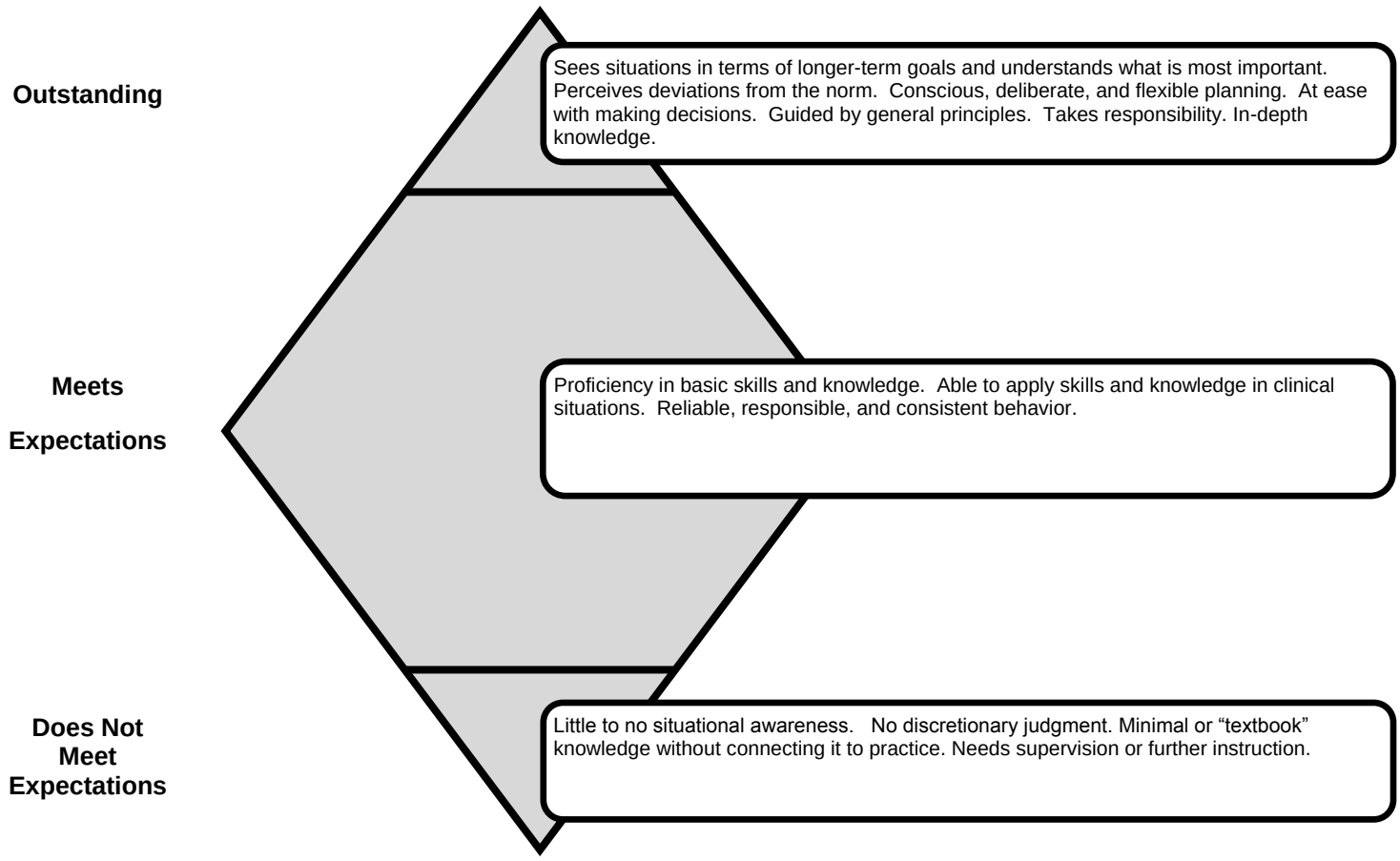
INSTRUCTIONS FOR ASSESSORS

Check the appropriate box. If you are unable to assess a specific section, please indicate "Not Able to Assess". Also, please make sure to complete the **Overall Performance** and **Preparation for Further Learning** sections at the end of this form.

Notes about usage:

- It is expected that **90% or more** of the students will receive **Meets Expectations**
- This summative assessment should take into account **all of the formal assessments** that have been done during the elective**,** and any relevant anecdotal reports
- For the **Medical Expert** and **Professional** competencies, the asterisk (*) Indicates a clerk **must** achieve "**Meets Expectations**" **in order to pass the elective**
- For the remaining 5 competencies, a clerk must achieve a minimum of "**Meets Expectations**" in 4 out of the 5 competencies **in order to pass the elective**
- **Note:** A failure **in any one subcomponent of a competency** constitutes a failure for the entire competency
- When assessing a subcomponent, **it is possible** to check elements from Does Not Meets Expectations, Meets Expectations, or Outstanding **to denote specific strengths or weaknesses**
    - The overall result for each subcomponent is determined by **where the majority of competence has been demonstrated**
- The category "**Outstanding**" is for awards purposes and does not impact a student's overall final result (**Does Not Meets Expectations / Meets Expectations**)





1. Medical Expert *	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	
*** Clinical Reasoning and the Application of** **Basic Knowledge** (1.4, 1.8, 1.9, 1.11) ☐ **Not able to assess**	☐ **Does Not Meet Expectations** □ often unable to solve clinical problems □ difficulty interpreting and integrating available data □ frequently unable to manage routine clinical situations effectively □ neglects to incorporate patient input in management planning	☐ **Meets Expectations** □ offer most possible solutions and explanations for clinical problems □ interpret and integrate available data □ begin to address situations that take into account best evidence and practices (patient safety, costs, patient values, and resources) □ begin to develop an effective patient-centred management plan	☐ **Outstanding** □ addresses a broader range of clinical issues through the interpretation and integration of available data with increased accuracy □ consistently reaches common ground with patients in developing a management plan □ always recommends an effective management plan
*** Patient Assessment – History Taking** (1.6) ☐ **Observed** ☐ **Inferred** ☐ **Not able to assess**	☐ **Does Not Meet Expectations** □ is more random than purposeful □ lacks completeness □ inconsistent response to patient concerns and/or contexts	☐ **Meets Expectations** □ negotiates an agenda with the patient □ consistently identifies and addresses issues by exploring diagnosis, causes, severity, and impact □ elicits patient's concerns □ explores social issues □ is thorough, accurate and systematic	☐ **Outstanding** □ probes issues with subtlety □ always flexible and responsive to patients □ uses reading around cases to help probe more deeply into pertinent issues
*** Patient Assessment – Physical / Mental Status Examination** (1.7) ☐ **Observed** ☐ **Inferred** ☐ **Not able to assess**	☐ **Does Not Meet Expectations** □ disorganized sequence □ often misses or ignores significant normal and abnormal findings □ insensitive or unresponsive to patient	☐ **Meets Expectations** □ efficient and complete □ focused, relevant, and accurate □ consistently able to elicit significant normal and abnormal findings □ sensitive to patient needs	☐ **Outstanding** □ uses the exam to confirm diagnosis, underlying causes, and severity □ uses the exam to answer questions and identify inconsistencies from history □ recognizes the implications of significant normal and abnormal findings □ always attentive to patient comfort □ knows when to ask senior members of the team to check findings
2. Communicator	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	
Relationships (2.1, 2.2, 2.3, 2.4, 2.5, 2.7,.28, 2.9, 2.10) ☐ **Not able to assess**	☐ **Does Not Meet Expectations** □ unable to demonstrate the relationship between effective communication and improved patient outcomes □ does not demonstrate rapport, respect, sympathy, or empathy for patients, families, or colleagues	☐ **Meets Expectations** □ establish a positive therapeutic relationship (understanding, trust, respect, honesty, empathy) with patients and their families □ maintain patient confidentiality / privacy □ elicit and synthesize relevant information from multiple sources □ respect diversity (gender, religion, culture) □ engage patients, families, and colleagues in shared decision making	☐ **Outstanding** □ always earns patient confidence and cooperation □ communicates effectively with patients, family, and colleagues □ elicits and synthesizes relevant information from multiple sources □ knows when to involve or seek additional support

Conveying Information (Verbal and/or Written) (2.11, 2.12) ☐ **Not able to assess**	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	☐ **Outstanding**
	□ disorganized □ incomplete □ inaccurate or illegible □ rambling □ problem list not attempted or complete □ unable to consistently develop an appropriate differential diagnosis	□ complete □ accurate presentation of information □ comprehensible □ attempts to adapt information to clinical contexts □ well organized problem list □ able to develop an appropriate differential diagnosis	□ is consistently concise and demonstrates attention to detail □ always adapts to varying contexts (people or situations) □ is informative to other team members □ accurately defends hypotheses as justified by the data (neither overstating nor understating)
3. Collaborator	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	
Interprofessional Healthcare Team (3.3, 3.4, 3.5, 3.6) ☐ **Not able to assess**	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	☐ **Outstanding**
	□ exhibits difficulty working with other members of the team □ often uncooperative, disruptive or unprofessional □ thoughtless or arrogant □ fails to recognize or respect the opinions and roles of others	□ recognizes and respects the diversity of roles, responsibilities and competencies of other professionals □ works within the team to assess, plan, provide and integrate patient care □ participates in a collegial process to maximize effective team functioning	□ seeks out and engages other team members in patient care situations □ takes on additional tasks to support the team in patient care, when able □ seeks clarification about roles, where appropriate
Conflict Prevention and Resolution (3.2, 3.5) ☐ **Not able to assess**	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	☐ **Outstanding**
	□ unable to recognize and/or deal with interpersonal conflict □ causes conflict □ fails to respect and/or understand the skills, knowledge, experience, or opinions of other professionals	□ recognizes interpersonal differences, misunderstandings and limitations □ works with other team members to prevent, negotiate, and resolve interprofessional conflict	□ proactively recognizes the potential for interpersonal or interprofessional conflicts to occur □ seeks support from senior members of the team to prevent or resolve conflict
4. Manager	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	
Healthcare System (4.1, 4.2, 4.3, 4.4) ☐ **Not able to assess**	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	☐ **Outstanding**
	□ often unaware of resource availability and/or limitations when making clinical decisions	□ aware of access to appropriate resources for learning and patient care □ allocates resources in an ethical and cost-effective manner	□ takes into account the ramifications of clinical decision making (economic, social, and resource implications) □ takes into account decisions involving utilization of resources in patient care
5. Health Advocate	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	
Patients, Communities, Populations (5.2, 5.3, 5.4, 5.5) ☐ **Not able to assess**	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	☐ **Outstanding**
	□ does not recognize the importance of the determinants of health □ does not consistently inquire about lifestyle/risk factors □ often omits patient involvement or understanding of their health	□ identifies adverse lifestyle issues during patient care and promotes disease prevention & healthy living □ engages in anticipatory guidance of patients □ demonstrates accepted legal, moral and ethical principles of physicians in	□ balances advocate & manager roles, and recognizes when advocacy supersedes □ draws attention to the potential legal, moral & ethical challenges in patient care and brings them to the attention of senior members

	and health care □ does not always apply accepted legal, moral and ethical principles when dealing with patients and/or colleagues	relation to the community and to patients □ recognizes the importance of the determinants of health in relation to community and patient's well being	of the team □ advocates for patients by going beyond standard system processes to ensure safe and effective healthcare □ attempts to incorporate the determinants of health in decision making
6. Scholar	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	
Life-long Learning (6.1, 6.2, 6.3, 6.4, 6.5, 6.6) ☐ **Not able to assess**	☐ **Does Not Meet Expectations** □ does not always recognize personal limitations (knowledge and/or skills) □ does not assume responsibility for learning	☐ **Meets Expectations** □ seeks out the appropriate resources to track, evaluate, and achieve self-growth when areas for knowledge and/or skill development are identified □ applies newly gained knowledge or skills in the care of patients □ demonstrates ability to share newly gained knowledge/skills with colleagues	☐ **Outstanding** □ consistently plans learning strategies that are reflective of the elective's objectives and personal learning needs □ goes beyond standards by applying analytic and intuitive approaches to knowledge and/or skill development □ engages in dialogue with peers & senior members of the team as he/she explores how to incorporate new practices
Evaluation and Application (6.7, 6.8, 6.10) ☐ **Not able to assess**	☐ **Does Not Meet Expectations** □ poor critical appraisal skills □ does not recognize degrees of complexity □ rarely demonstrates curiosity in the face of the unknown □ does not appear to know how and where to find appropriate answers	☐ **Meets Expectations** □ asks effective clinical questions and attempts to answer with appropriate resources □ applies critical appraisal skills when considering appropriate resources □ recognizes own uncertainty and seeks clarification □ seeks guidance from senior members of the team	☐ **Outstanding** □ is aware of the evidence that informs practice □ conveys his/her degree of certainty and seeks further clarification □ demonstrates initiative & innovation in the face of the unknown □ seeks opportunities to contribute knowledge & ideas beyond assigned tasks

7. Professional *	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	
*** Ethical and Social Behaviour** (7.1, 7.2, 7.3, 7.5, 7.6) ☐ **Not able to assess**	☐ **Does Not Meet Expectations** □ has demonstrated limited knowledge of and/or respect for professional boundaries □ does not recognize or respond appropriately to common ethical issues □ often fails to demonstrate integrity, or responsibility, or respect □ does not always demonstrate respect for patient confidentiality and privacy	☐ **Meets Expectations** □ abides by the professional, legal and ethical codes of practice □ maintains appropriate professional boundaries □ recognizes and responds appropriately to common ethical issues □ honest and trustworthy □ identifies personal conflicts of interest that may affect care □ completes clinical assignments efficiently and effectively □ responds appropriately to the diverse needs of patients and families in routine circumstances	☐ **Outstanding** □ anticipates, recognizes and responds appropriately to ethical issues □ overcomes conflicts that may affect care □ develops a strong sense of duty towards service and professional expertise □ maintains professional demeanor in challenging or stressful circumstances

* **Reflective Practice** (7.11, 7.12, 7.13) ☐ **Not able to assess**	☐ **Does Not Meet Expectations**	☐ **Meets Expectations**	☐ **Outstanding**
	□ does not demonstrate the ability to learn from experience □ does not recognize own limits and/or seek help □ difficulty accepting and/or incorporating personal and/or professional feedback	□ demonstrates ability to learn from experience in common & critical events □ seeks feedback about personal performance from senior members of the team □ recognizes how personal biases, attitudes and feelings may impact self-learning and patient care □ recognizes personal limits and seeks help appropriately	□ learns from a variety of authoritative sources in response to a clinical event □ uses multiple sources to assess level of personal performance □ tries to incorporate feedback on personal and professional performance

Overall Performance	
Summary: Please provide a summary of the student's **overall** performance	

SUMMATIVE (Final) Elective Assessment	
If the student **Does Not Meet Expectations,** the student has **failed** the block. **Details that support this decision must accompany this form.**	☐ **Does Not Meet Expectations** ☐ **Meets Expectations**

FORMATIVE FEEDBACK

Preparation For Further Learning – not subject for inclusion in the MSPR (Dean's Letter)Note: Clerks should complete an initial draft of this section **prior to their exit interview**. The supervisor may **suggest additional feedback** in consultation with the clerk during the exit interview, as well as discuss **peer review feedback**.

Use this space to identify what you are going to take away from this elective that has contributed to your development as a professional. You may wish to consider (but are not limited to): • What new knowledge or experience had the most significant impact during the elective? • What areas for personal or professional growth did this elective identify for the next elective? • How did your learning strategies help you cope with the demands of the elective? Do they need to change? If so, how?	