DOCTOR OF MEDICINE CURRICULUM RENEWAL

DEVELOPMENT & IMPLEMENTATION

Schulich School of Medicine & Dentistry, Western University
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Executive Summary

In response to Dean Dr. Michael J. Strong’s vision for all medical education programs in the Schulich School of Medicine & Dentistry to be competency-based through shared education support resources, and to align our program with evolving standards and practices in Canadian medical education, a renewed Doctor of Medicine (MD) Program curriculum will launch in September 2019 for Year 1 students (Meds 2023).

This curriculum will be delivered using an integrated, active learning (“An educational process where students become vigorously engaged in assimilating the material being taught rather than absorbing it passively in a lecture format.”)\(^1\) model offering seven new courses in Years 1 and 2, continue a single Year 3 Clerkship course, and a Year 4, which features Clinical Sciences Electives and Integration & Transition courses.

Learning will be aligned with the vision of supporting active student learning with staged assessments of competency and decision-making from month one of curriculum. Key to this curriculum will be early integration of clinical and foundational learning with clinical experiences. Curricular learning will be aligned with the concept of graduating competent, generalist physicians who are “Master Adaptive Learners.” \(^2\)

Our new program competencies, adopted from CanMEDS 2015 (Appendix F) will guide a competency-based program design that utilizes formative and summative assessment strategies. Students will be able to track, with their individual coaches, progress in reaching defined stages of curriculum with data posted in the new learning platform: Elentra. The new Year 1 learning activities will feature more independently accountable student learning; case-based, and expert led small group learning; projects (Research, Quality Improvement); laboratory and simulation; interactive large group learning; independent learning outside scheduled curricular learning for one day; seminar learning, as well as opportunities to allow for clinical experiences in communities throughout Southwestern Ontario. Our curriculum will deliver on being socially accountable to the population we serve in Southwestern Ontario. Course context and content will be in alignment with regional health care challenges and patient diversity. We envision that enhancements to our curriculum across all years in both student assessment and learning will align with the vision of our school to: “Become a destination of choice for exceptional education and learning.” \(^3\)

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\(^1\) http://www.businessdictionary.com/definition/active-learning.html


\(^3\) https://www.schulich.uwo.ca/continuingprofessionaldevelopment/docs/StrategicPlan_Web.pdf
Introduction

Medical education is changing across Canada as expectations of physicians in health care moves to delivering and ensuring accountable and quality patient care. With this, comes the responsibility of all health care professionals to demonstrate: adherence to patient and family values, including cultural safety and respect for diversity, adaptation to new fiscal pressures in patient care and evolving systems management, commitment to evidence-based decision making, and adoption of a leadership role in a climate of continual change to effectively meet the evolving health care needs of the patients and communities we serve. This document outlines the processes that will guide the development, implementation, and continuous improvement of the new CBME model for the School’s new MD program.

Student learning expectations as the next generation of physicians differ from the present and past. Our education model must move, to meet this challenge, from “passive” learning and assessing solely for factual knowledge. Physicians can now access factual material and clinical support from personal devices and are assuming the role of decision makers and leaders working with health partners in a complex system throughout their careers. Our MD Program renewal is positioned to build on the strengths of our existing curriculum as we move to a learning model that delivers an exceptional learning experience for medical students who graduate prepared to meet the challenges of future Canadian patient care.

Our new MD curriculum will support adaptive learning as the foundation to our competency-based medical education (CBME) model. We aspire to create active learners through deeper integration and early-staged clinical decision making in curriculum. We will be assessing for competency - not grades. Our CBME curriculum will be delivered through an outcomes-driven model with a vision to graduate competent, socially accountable, generalist physicians who, as health care professionals, can meet the vision of being clinicians, scholars, and leaders ready to enter any residency program and serve the health care needs of Canada in the twenty-first century.
Goals of the curricular change include: (1) improving patient care using an outcomes-based curriculum; (2) aligning with CBME in Canada at the postgraduate level; (3) ensuring learners demonstrate the knowledge, skills, and attitudes to meet the needs of Canadian patients and communities, regionally and nationally; and, (4) preparing learners for the continuum of life-long learning.

Our present curriculum has supported strong outcomes for the past decade. Courses created in our 2007 build have innovated throughout time in adopting new pedagogical approaches that include team-based learning; small-group learning, narrative medicine and projects (Research, Quality Improvement). Our assessments have expanded from multiple-choice to include short-answer and key-feature questions. Presentations, projects, quizzes and reflections are other examples of effective assessment methods. Our main learning model; however, remains to be one of passive learning and it will shift considerably as we promote active learning strategies throughout the curriculum.

Students currently receive content from a faculty educator and may not always be accountable for accessing and appraising evidence. Our data and standards identify the need to integrate student learning around the present challenges of care we see daily as clinicians, to be socially accountable to the patients and families we serve. We will encourage learners to be active participants, capable of addressing clinical situations of increasing complexity across their entire journey to becoming physicians.

Outcome data from our program indicates many students experience a “silod" approach to integrated body system-based learning with no formally assessed clinical integration in actual patient care. Students learn a discipline in a short period, are then assessed and often are not receiving reinforced or advanced in this knowledge until Year 3 “Clerkship.” This is not the model seen in residency or continuing professional development medical education. Integrating learning across and within body systems and addressing the additional variables from chronic disease, age, gender, diversity, social determinants and health systems early and often should be the norm for students from the beginning of their medical educational journey.

Our curriculum will be learner-centered, organized to achieve incrementally our curriculum competencies while emphasizing the acts or observable clinical abilities of physicians – described as Entrustable Professional Activities (EPAs) in the CBME literature. It will contain early, meaningful clinical integration of learning, with a robust and multifaceted assessment system delivering effective learner feedback to facilitate their developmental progression to postgraduate medical education (PGME) entry competence. Learning will stress decision-making from Year 1 of study while working and leading in teams. Through this, graduates will lead in addressing the health challenges of our region, province, country, and global village.
Principles of a CBME Curriculum
As we focus to change to advance our learning process in the MD Program, innovating from our present and looking to a stronger future as a School, the underlying foundations of a competency-based curriculum will guide the process.

A schematic of the core underlying principles is:

Each component:

- Focus on outcomes: Curricular Competencies, Accreditation Standards, Societal Needs, Generalism;
- Emphasising Measureable Skills: EPAs;
- Time is not a factor: Allowing for an accelerated, advanced or parallel learning plan with guidelines of maximum time in studies;
- Learner centered: Support for each learner to achieve skill and master competency across each stage of curriculum.

These concepts differentiate this curriculum from our present traditional educational model.

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Vision and Goals for new MD Program Curriculum

Vision
The vision for the new MD Program CBME curriculum is to graduate students competent who address all patients’ needs in clinical practice in the twenty-first century through:

- learner-centred curriculum;
- socially accountable learning objectives, content, and placements;
- individual coaching;
- active learning models;
- outcomes based in patient safety, quality and evidence-based decision;
- career-based scholarship;
- early clinical care immersion in Year 1;
- understanding the complexity and uncertainty in clinical decisions;
- delivering safe supportive care by respecting diversity and cultural safety;
- contributions as members or leaders of inter-professional teams;
- continuous integration of basic, clinical and social sciences;
- system learning;
- optional parallel learning for learner enrichment with Western University certificates or masters degrees;
- learning in sites across the distributed education region.
**Goals**

We will become known as an MD Program that supports active student learning and includes structured and independent self-directed independent learning while seeing their growth in competence as clinicians with effective frequent feedback delivered through an electronic platform. Students, like clinicians, want to be assessed as being physicians. The MD Program CBME curriculum will differ substantially from the present UME Program current model. The new competency-based model will:

- promote measured learner competence using a series of regular, formative, and summative assessments adaptable across learning modalities;
- be grounded in course and learning objectives meaningfully integrated across curriculum years;
- be created with body system and foundational sciences integrated modules supported with “themes” that weave across all Program courses and years;
- feature learner Immersion in the clinical learning environment early;
- promote learning as more active in pedagogy through small group, project, interactive large group and simulation learning;
- assess learner performance with competency-based assessments in the curriculum anchored by the Association of Faculties of Medicine of Canada EPAs across all years with milestones with assessment methodology including techniques such as 1:1 assessments; Peer and 360 assessments; readiness testing and intermittent formative assessments. Many will resemble PGME CBME assessments.
Master Adaptive Learners
The goal of this MD Program change is to graduate students who are Master Adaptive Learners as outlined in Cutrer et al.’s (2017) conceptual model:

Master adaptive learners enter their careers always asking what they need to update knowledge; where they can access information; how they can improve; seek internal and external information on performance and adapt it to care. They continually ask what to plan to improve. They need to be aware of where to seek and learn new evidence then apply to care and assess results or outcomes and, if useful, adapt their model(s) of care. In effect they are continually actively undergoing continuous career quality improvement that is self or team driven to improve outcomes in care.

Why Change Now?
We as a School have a narrow window of opportunity after our 2015 CACMS review of accreditation to innovate into a new learning model. Top students looking at our School, will expect a curriculum that has more hands-on experiential learning from day one and a learning model that fits their learning needs. Use of technology and ability to be adaptive in learning is key. Expectation of the public, funders and regulators are increasing for the demonstration of applicable learner outcomes and competence. Finally, we have a unique opportunity to partner with PGME and Continuing Professional Development to adopt a CBME model across the continuum of medical education. Most clinicians are involved in UME and PGME education.

With the move toward improving the quality of health care systems and patient outcomes in Canada, and the mandate for schools of medicine to be socially accountable to their patients and communities, the MD Program will align with a CBME model. This change also aligns with Western University’s Strategic Priorities; Schulich Medicine & Dentistry’s Strategic Plan’s Directives, Mission and Core Values, and the AFMC’s Future of Medical Education in Canada report.

Our School can lead and partner with peers in the development and implementation of a competency based medical education for the next decade.

Guiding Strategic Documents
The new MD Program CBME Curriculum will deliver to and be informed by key national and university outcomes documents:

1. The mission and vision of the MD Program
2. Our 2017 MD Program Curriculum Competencies (Appendix F)
3. The Standards and Elements of the Committee for Accreditation of Canadian Medical Schools
4. AFMC Entrustable Professional Activities
5. The Medical Council of Canada Blueprint
6. The Future of Medical Education in Canada (FMEC): A Collective Vision for MD Education
7. Strategic planning documents of Western University
8. Schulich School of Medicine & Dentistry Strategic Plan 2011-2021
9. Outcomes from similar curriculum underway in the AMA and AAMC consortium of CBME.
Curriculum Structure
The build will draw from the following key principles.

Accreditation Standards
The evolving standards and elements of the Committee on Accreditation of Canadian Medical Schools (see Guiding Documents) will guide the structure of the Program. This will impact curriculum, as well as the course objectives, processes, content, assessment, evaluation and outcomes. Our goal is to ensure prospective continuous quality improvement and compliance with each element on an ongoing basis, and be always: “Accreditation Ready”.

The Four Project Pillars of the CBME Curriculum Development
Four main project pillars support key deliverables in this curricular change.
Learning Modalities

Small and Large Group
While our current curriculum already makes use of a variety of student learning modalities, there remains a heavy reliance on the didactic lecture – a passive learning model. This traditional approach to teaching does not foster students’ active participation in the learning process, nor does it allow for effective assessment of competence. In our renewed curriculum, more student learning activities will transition from lectures to interactive large group (flipped classroom and team-based learning), case-based small group, and independent learning modules (ILs). Small group observed learning provides a rich opportunity for student assessment using pre-session readiness testing and facilitator assessment for formative feedback, and to enhance student confidence in evidence-based clinical decision-making and tasks of a physician or EPAs. We will build from the strengths of our Patient-Centred Context, Integration and Application (PCCIA) and clinical discipline driven expert small groups to partner with new case-based small group learning around MCC Medical Expert objectives to integrate and advance student learning within and across courses.

Independent Learning
Independent learning (IL) modules in many courses supplement and support classroom and lab-based learning. In the new curriculum, ILs will be utilized to prepare for small-group learning and readiness assessments for weekly objectives. In addition, we will be continuing narrative medicine and project team-based learning in quality improvement and research. The new curriculum will support stronger IL modules that effectively deliver learning outcomes and capture learning outcome data.

Self-Directed Clinical
Students in Years 1 and 2 of our present curriculum have eight hours of non-scheduled time for off-schedule learning each week. Many students in our School undertake independent clinical learning during observerships. The lack of a day of free time limits student opportunity for independent, longitudinal, or single full-day learning enrichment in London, Windsor, or the Distributed Education sites. We will be supporting independent student learning with assessment by providing additional free time and a structured longitudinal generalist clinical care experience across Year 1. Summer elective student clinical and research learning will continue.

Courses
The new MD Program CBME curriculum is significantly different from our present model. By moving to a new state with fewer but integrated courses and a planned approach for vertical (across time), horizontal (across subject, disciplines) and spiral (across time & subject integration of concepts, principles, and context of care, we will deliver a curriculum that aligns with evolving health system transformation in Canada.
**Week at a Glance**
An outline of the schedule for typical Year 1 week is displayed in Appendix D.

**Foundations of Medicine**
A course stretching from September to end of December in Year 1 will support and assess learner competence on all key topics of basic, social, and clinical sciences necessary for critical thinking, problem-solving, and clinical decision-making. A key goal is outlined in the first week – “How to think like a physician”. The curriculum will incorporate the social determinants of health, ethics, cultural competence, health promotion and prevention. This and all subsequent courses will be aligned with issues prominent in Canadian health care, especially those applicable to Southwestern Ontario. Body system of Hematology and an introduction to Infectious diseases, Immunology and Microbiology offer clinical application for learning. This course will instill a firm grounding in what will be Themes within courses of: Basics of Anatomy and Cell Biology; Pathology and disease; Laboratory Medicine, Imaging, Lab and Pathology Diagnostics and Choosing Wisely; basic Pharmacology and therapeutics; Physiology; Ethics; Diversity and ethnic challenges; Health Systems; Quality Management; Biochemistry; Genetics (including genomics, epigenetics) and Evidence Based Care.

Learning and assessment will use a variety of methods including case-based and small group/team-based learning, interactive large group learning, labs and independent learning. This course will serve as a secure grounding for learning in other parallel and subsequent Program courses. Students will be introduced to the grounding for EPAs in demonstrating the tasks of a physician.

**Principles of Medicine I and II**
Each course (January 2 to mid-June of year 1 for Principles of Medicine I and September 2 to end January for Principles II) will support student development of competence in the key principles of medical disciplines, represented in the present curriculum within Years 1 and 2. Integration of content objectives will occur across the course using a case-based and application model of active learning at the end of course, and with parallel (PCCM) and subsequent courses (Transition to Clerkship and Clerkship). Curricular competencies learned and assessed in these courses extend beyond medical expert to include all curricular competencies. Course goals are to integrate foundational and clinical sciences with learning related to social determinants of health and social accountability, while establishing competence to enter clinical bedside learning. Case-based learning will serve as an environment for key integration and competency assessment. Students will see their growth as a clinician in their maturation of effectiveness in EPAs.
Transition to Clerkship
Spanning February to late June of Year 2, students will be assessed for early clinical competency by clinical immersion in key Clerkship rotations while expanding their decision-making in seminar or small group multi-system or theme based learning. Another key deliverable will be to support students for their career choices by immersion in mini-rotations of Clerkship.

This course will deliver learning by consolidating body system (foundational and clinical sciences) learning, and introducing students to prescribing, investigations and patient care decision making and skills that they will see in Clerkship. Additional objectives will include data management, systems-based care; electronic health records use, and health informatics, and artificial intelligence.

Patient-Centred Clinical Methods
Building from the present course that offers strong foundations for approaching clinical care, and with some sessions moving to Transition to Clerkship) (i.e. Introduction to Surgery and Family Medicine Consolidation), this course will integrate with the systems-based learning in Principles I and II. This course will be a key source of small group assessments for the AFMC EPAs (1-6) in point-of-care assessments, using similar or identical tools from Clerkship and PGME. As in the present curriculum, learning will focus on using small group standardized patient simulation interspersed with actual patient exposure, inter-professional learning, and use of evolving technology such as point-of-care ultrasound. The present outcome measure OSCE, the formative TOSCE and regular group assessments offer an excellent frame for a CBME Assessment structure.

Experiential Learning
A key characteristic of being a successful clinician for the next decades to come is leadership. Leadership has many forms, and the curriculum will support this competency through working in teams on understanding first-hand the impact of social determinants on health outcomes and advocating for change; creating scholarly work for publication; establishing a quality and patient safety culture in systems-based care. Using independent learning, mentorship and team projects, students will apply learning from other courses and establish key career competencies pre-Clerkship. This will be a project-based course, with the outcome measure of passing each project and the grade of pass.
**Professionalism, Career, and Wellness (previously Professional Identity)**
Evolving educational standards, Western’s strategic plan and evolving literature\(^5\) point to the need to support learners with tools to address wellness, professionalism, leadership and professional career success.

Course objectives will include topics related to personal health, substance, boundaries, and professionalism, leadership, professional ethics, identification and management of bias in patient care, inter-professional learning, and regulatory/legal aspects of being a registered health professional in the twenty-first century. Learning will be in small groups; Interactive large groups; projects and seminars.

**Independent Learning**
There will be time, as provided in the present curriculum, and as described in the national standards, for students to pursue independent clinical learning through observerships, community-service learning, research, certificates and other independent learning. The curriculum will be allocating more than 12 hours per week for this area of learning – including the full day of Tuesday. We will support students in experiential learning that day and encourage clinical placements – especially longitudinal in teaching sites for London, Windsor and especially our Distributed Education region.

**Parallel Degree or Certificate Learning**
A new process will be developed for students who achieve curricular outcomes in advance of the prescribed curricular competency based plan, to pursue parallel master’s degrees (e.g., Master of Public Health) and official Western University or University of Windsor certificates (e.g., Global and International Health or other existing university certificate programs).

[Western University Certificate Learning](#)
[University of Windsor Certificate Learning](#)

**Clerkship**
Clerkship, as a course, was reviewed along with Clinical Sciences Electives in September 2018 by two educational leaders. The report from this review process will be delivered to the Curriculum Committee by December 2018. Subsequent curricular innovation in this stage of integrated clinical learning will be directed through an internal planning process, resulting in a new Clerkship model designed for this era of Canadian medical education. Decisions on this will be reached by the Curriculum Committee and ECSC in early 2019.

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\(^5\) [https://www.cma.ca/En/Pages/physician-health.aspx](https://www.cma.ca/En/Pages/physician-health.aspx)
In the interim, Clerkship will be moving in September 2019 to assessments using a CBME frame of EPAs. This will mean for the most part linking existing assessments to EPAs and if new assessments are added, then they are at the expense of existing assessments.

**Themes**
Themes are topics key to delivering culturally safe, socially accountable effective evidence-based quality health care or impacting care by lifecycle that impact physicians delivering care or improving health care outcomes. In a traditional curriculum, many would be courses on their own. In our new approach to learning, themes will be weaved into sessions across and within courses.

Themes for our curriculum will include:

- cultural safety and diversity;
- Indigenous culture and health;
- evidence-based therapeutics;
- diagnostic imaging;
- pathology;
- laboratory medicine;
- history of medicine;
- paediatrics;
- geriatrics;
- oncology;
- basic sciences (anatomy & cell biology; physiology/pharmacology; biochemistry);
- genetics;
- immunology;
- infectious diseases and antimicrobials;
- prevention and health care systems;
- global health;
- ethics;
- epidemiology and biostatistics;
- Inter-professional learning.
These topics will be included in all courses (where relevant) and assessed across the curriculum in a graded and staged manner.

**Progression**

Presently students progress by achieving a grade-point average for a course of 60%. Students with marks below 60% on key assessments are required to remediate but allowed to progress to the next level.

Progression across the year and curriculum in the new CBME curriculum for UME will be revised to reflect the same model used in PGME CBME; progression by competency as decided by a central committee. A program Competency Committee will oversee all assessment outcomes on an iterative (not staged by semester end) process. This will require students to complete and achieve PASS in small formative assessments and be reviewed for progression by outcomes (quantitative and qualitative data) entered by faculty relevant to EPA based assessments. Progression will no longer be by marks, but by results.

Some students may show advanced competency for an area of stage. *(Appendix G)* They will be encouraged to undertake parallel leaning processes (Certificate or master’s learning) or independent learning to demonstrate competency at a PGY 1 level for a clinical discipline. There will not be an option for early graduation or residency match.

The Competency Committee will be composed of faculty, staff and learners – drawing from the strength of the existing UME Progression Committee.

**Implementation Plan**

The new MD Program CBME curriculum *(Appendix A)* will launch September 2019 for Year 1 of Medicine Class of 2023. In the same year, a progressive revision in our Clerkship model (Year 3) with the introduction of EPA’s in the assessment framework will be launched.

New courses in the CBME curriculum:
- Foundations of Medicine
- Patient Centred Clinical Methods (PCCM)
- Principles of Medicine I
- Principles of Medicine II
- Experiential Learning
- Professionalism, Career, and Wellness
Each class will experience change and improvement of their curriculum.

**Coaching and Learner Support**

Coaching for learners is a key concept of CBME. While this is a new concept in UME, it is well established in other faculties and professions such as the arts and sports. Coaches are positioned not to correct but support, direct and advise students on performance. The Program will establish a parallel learner Coaching cohort of clinical faculty who work aligned with the vision of coaching as outlined in the recent American Medical Association publication at:

https://www.ama-assn.org/education/coaching-medical-education-faculty-handbook#Chapter%20Downloads

Present School support across all campuses with the resources in the Learner Equity & Wellness (LEW) Office will continue, in addition to the resources of Western University and the University of Windsor.

The Program will work with the LEW Office to optimize support for personal and career support within the curriculum across all years in a staged manner.
Curriculum Development
Project Development Committees

Curriculum development will be by individual course and process committees:

Governance
A committee led by the Associate Dean, UME with membership selected by process will create structures, processes and documents to guide the MD Program CBME Curriculum leadership, process, progression and quality management.

Subgroups will address:
- Progression including Competence Committee
- Curricular governance committee structure
- Policies

The process for approval and oversight of learning and assessment in the new CBME MD Curriculum will be by the MD program Curriculum Committee (CC) as outlined below. There will be oversight and reporting of program outcomes using committee processes outlined below.

The Curriculum Renewal Executive Committee (CREC), with membership from Clerkship will create and maintain a true collaborative learning environment that leads to deeper integration and cohesive planning to meet outcome objectives of the Program.
The key informing committees to the CC is the CREC and the existing Quality Committee (QC). There will be oversight of course objectives to ensure they are addressing the overall vision of Generalism in the curriculum, by a committee composed of generalist educators and learners.

Leadership roles are outlined for the MD Program CBME Curriculum in Appendix B.

Course Committees
Each new course in the MD Program CBME curriculum will have a course committee to oversee the development, implementation, and review/revision of the course pedagogy and assessment model.

Each course will have a course committee and involve all present course leads, new thematic leads, and student representatives to develop curriculum by: integrating present content objectives to new curricular objectives and learning; assessments that draw from existing assessments and are competency based; and overseeing integration of life-stage, social, clinical, and basic science.

Course committees will be supported by program resources and work from the new Western online resource: Microsoft Teams. This program allows for tracking project progress, housing content and videoconference capability for virtual team meetings – saving clinician educators’ time and allowing flexibility of scheduled course meetings.
Each course committee will meet on at least a monthly basis and be composed of the following members:

- Course Chair (Chair);
- Windsor Vice Chair (Vice Chair);
- Each Systems Based Leader (i.e. Cardiology/GI/Neurology/Psychiatry etc.) – if relevant;
- Students (across all years of the MD Program);
- Resident(s);
- Windsor and London faculty at large;
- representative(s) from the Pedagogy/Assessment/QC committees;
- theme leads as ad-hoc members for development specific to their area;
- Generalist;
- relevant Basic Science educators;
- UME staff support.

This committee must be outcomes driven and deliver on timelines illustrated in Appendix D

**Process Committees and Task Groups**

**Accreditation Committee**
The Accreditation Committee (AC) will continue to review compliance with CACMS Standards and Elements in preparation for our 2019 Internal Review for both current curricula and new curricula.

**Quality Committee**
The QC will be responsible for the continued quality assurance of the current and CBME curricula during and after implementation.

**Curriculum and Pedagogy Task Force**
This Task Force will provide pedagogical materials, hands-on support, and oversight for course design, development, and delivery.
Assessment Task Force
This committee will support the development and implementation of course
evaluations (including EPAs) as approved by the CC. Tools to adopt existing
evaluations and create new methods of assessment will be created for course
development.

The CC has outlined time allocation for course scheduling and internal time allocation
between didactic and interactive large-group learning; small group learning (case-based
method for integration of concepts; expert small group and what was formerly PCCIA
learning). For some courses, small group and team-based learning will be the primary
modality. A draft typical week and course outline for Foundations of Medicine is outlined
in Appendix D.

Assessment will follow the approved matrix of the CC and teach to program
competencies and align with the Medical Council of Canada Blueprint. (Appendix E).
This new national standard was created from a five-year process informing on the skills
and knowledge needed for physicians in the upcoming decades. The Program will
support students’ achievement of competencies by offering bi-weekly formative
assessments (quizzes and Independent learning testing); readiness testing to be
submitted pre small group sessions; lower stakes summative assessments; project and
team assessments; summative assessments focused on decision making; laboratory
quizzes; observed participation and assessment in a variety of small group learning;
reflections and moving over time to include programmatic assessment and 360 degree
assessments (from peers/patients/families/health care partners).
Faculty Development
Led by the new school CBME faculty development lead (anticipated to be appointed in November 2018), this group will support processes to deliver faculty and resident preparation to educate and assess learning outcomes across the UME-PGME programs using competency-based methods and tools. It will be critical for this group to collaborate closely with course leaders and offer sessions and support with broad applicability to faculty for MD Program and PGME Curriculum.

Materials such as course guides, workshops and videos for course delivery will be created and delivered with the support of the CPD Program.

Information Services and Learning
The UME and PGME Programs will migrate over three years for all program learning to the evolving learning platform adopted by many leading North American medical schools: Elentra. This learning platform offers the ability to fully monitor and report on learning outcomes and enter assessments from your PDA at point-of-care for EPA assessments. There has been migration in the early CBME Programs from CBME and in other schools moving to our curriculum (U Toronto; U Calgary, and UBC) with success and enthusiasm for learners and clinical faculty.

Scholarship
Key to this project will be planning for scholarship and identifying emerging issues from the curriculum development process to share in peer-reviewed publications, conference presentations and posters, as well as other scholarly documents for national and international distribution.

Collaboration with other educators, leaders, faculty, staff and learners, both internal and external, will be key to this deliverable.

Timelines
The MD Program CBME curriculum renewal project will be guided by a systematic process across all phases of implementation to ensure adherence to the timeline as presented in Appendix C.
QI and Evaluation

The implementation of a competency-based model will be evaluated on outcomes for adherence to project timelines, CC framework of student learning and assessment, and CACMS standards and elements during the project. This will be reported in monthly reports to the CREC. The QC, who will own this process, will report directly as per their mandate to the MD Program CC and Program leadership.

The MD Program’s continuous quality improvement model will be applied and enhanced in the new CBME curriculum. We will continue to utilize our process of evidence-based decision making to build the new curriculum and to facilitate changes to it. New performance indicators relevant to a CBME curriculum will be built and applied).

The program’s QC will be responsible for the continued monitoring of the non-CBME and CBME curricula during and after implementation. The program’s AC will continue to review compliance with CACMS Standards and Elements in preparation for our 2019 I internal review from both curricula. Our evaluation process is designed to recognize successes and opportunities for growth during and after our curricular implementation.

Our MD Program CQI valuation will continue through regular monitoring of project goals over the implementation is key to the project management plan.

Supporting the renewal of the curriculum will be a continuous quality improvement process driven by the current MD Program QC. Measuring a variety of outcomes that gauge the success of the Program, the evaluation strategy will allow for evidence-based governance and decision-making to support the curriculum and to make real-time improvements in how the Program is delivered.

Core measures will include, but are not limited to:

- test pilots of curriculum experiences and learning innovations;
- student satisfaction of required learning experiences;
- student perception of competence as various stages of training;
- student performance in required learning experiences, including
  - Competency-based assessment of students;
- student advancement and graduation rates;
- results of LMCCQE Part I Exam;
- results of LMCCQE Part II Exam;
- residency match results;
- specialty choices of students;
- licensure rates of students;
• feedback from program graduates on preparedness for residency;
• feedback from residency program directors on graduate preparedness for residency;
• practice setting of students;
• practice location of students;
• feedback from faculty;
• adherence to CACMS standards and elements.

**Summary**

Drawing from new processes in medical student learning and aligning with the move to a Canadian medical education that is competency based across the continuum, the Schulich Medicine MD Program will start in September 2019. This curriculum will graduate who are socially accountable, collaborative, culturally sensitive master adaptive learners. Students will be assessed for meeting a graduation level all MD Program outcome competencies to successfully enter a Canadian PGME Program. The steps to and changes in this document are supported by the Program CC and will allow innovation from our existing core curriculum that has been delivered effectively over the past two decades to a curriculum we see as leading Canadian medical student learning for the next decade.
Appendices

Appendix A: Course Structure

[Diagram showing course structure over four years with months and subjects listed]
Appendix B: Leadership
Curricular Leads

- Foundations of Medicine
- Principles of Medicine I
- Principles of Medicine II
- Transition to Clerkship
- Clerkship
- Transition to Residency
- Experiential Learning
- Professionalism, Career, and Wellness
- Coaching

Theme, Module and Clinical Leads

Module

- Research
- Patient Safety and Quality Improvement
- Reflection and Narrative in Medicine
- Service Learning
- Discovery Week
- Longitudinal Family Medicine Year 1 Clinical Experience Immersion

Theme Leads

- Diversity
- Indigenous Health
- Inter-professional Education
- Life stage leads
  - Paediatrics
  - Geriatrics
- Laboratory Medicine
- Pathology
• Anatomy and Cell Biology
• Physiology and Pharmacology
• Biochemistry
• Hematology
• Immunology
• Genetics
• Epidemiology & Population Health
• Global Health
• Infectious Diseases
• Ethics
• Informatics
• Evidence Based Therapeutics

**Clinical Leads**

  o Family Medicine
  o Cardiology
  o Oncology
  o Palliative Care
  o Diagnostic Imaging
  o Respiratory
  o Neurology
  o Otolaryngology
  o Ophthalmology
  o Women’s health
  o Urology
  o Surgery
  o Orthopedics
  o PMR
  o Psychiatry
• Endocrinology
• Nephrology
• Gastroenterology
• Nutrition
• Rheumatology
• Critical Care
• Emergency Care
• Dermatology

• Windsor Campus and Distributed Education Leads

Process Leads
• Project Manager
• (Academic) Assessment Lead
• Curriculum Specialist
• Evaluation Specialist
• EPA Lead
• Accreditation Lead and CQI Lead
• IT/LMS Lead
• Faculty Development Lead
Appendix C: Timelines

- **Reports Curr.&Assess:** 5-2-2018 - 6-15-2018
- **Project Review:** 5-2-2018 - 6-15-2018
- **Environmental Scan:** 5-30-2018 - 8-30-2018
- **Project Charter PM:** 5-12-2018
- **PROJECT PLAN:** 6-3-2018
- **Governance Review:** 5-12-2018 - 5-18-2018
- **Program Restructure:** 5-2-2018
- **Submit Business Plan:** 7-26-2018 - 7-30-2018
- **Curr. Renew - Found.:** 5-2-2018 - 12-28-2018
- **Curriculum Renew - PI, Clerkship:** 10-1-2018 - 3-30-2019
- **Curriculum Renew Longitudinal:** 10-1-2018 - 3-30-2020
- **Assessment Map - Yrs 1-3:** 6-15-2018 - 6-26-2018
- **Assessment Plan:** 5-2-2018 - 11-30-2018
- **Assessment Dev. Y1:** 10-1-2018 - 3-30-2019
- **Program Eval. Plan:** 8-1-2018 - 3-30-2020
- **PROJECT TEAM MTG:** 6-26-2018
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<td>Project Eval</td>
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Tuesday (All day independent learning can be combination of: observations/service learning/QI project/Research Project/Portfolio II, Patient Experience/Family Medicine Clinical Experience/IL prep for Block courses)
## Appendix E: MCC Blueprint

### Dimensions of care

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<tr>
<th>Physician activities</th>
<th>Health Promotion &amp; Illness Prevention</th>
<th>Acute</th>
<th>Chronic</th>
<th>Psychosocial Aspects</th>
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<td>Management</td>
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<td>Professional Behaviours</td>
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| Column %                     | 20±5 | 35±5 | 30±5 | 15±5 | 100               |

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Medical Expert
Medical Expert, the central physician competency integrating with all other competencies, represents the cornerstone of physician identity, defines scope of practice and encompasses the knowledge, skills, values and attitudes for a clinical decision maker providing high quality and safe patient-centered care. Medical Expert involves integration of the foundational sciences and other knowledge into patient and family centered care.

1. Practice medicine within the scope of generalism as an undifferentiated generalist physician.
   
   1.1 Demonstrate commitment to quality patient care.
   1.2 Apply knowledge from the clinical, biomedical and social/behavioral sciences in acute and chronic health challenges across the age spectrum.
   1.3 Provide all care in the context of each patient’s determinants of health.
   1.4 Perform safe, sensitive and timely clinical assessments with recommendations presented in an organized manner.
   1.5 Deliver clinical responsibilities in the face of competing demands.
   1.6 Recognize and respond appropriately to the complexity, uncertainty, and change in medicine.
   1.7 Demonstrate an understanding of longitudinal care to patients and families in the management of their health challenges.

2. Perform a patient and family-centered clinical assessment, formulate a diagnosis, create and implement a management plan.

   2.1 Identify and prioritize issues to be addressed in each encounter.
   2.2 Elicit a relevant, concise history and perform a complete or focused accurate physical and/or mental health examination as appropriate to the patient context and clinical presentation.
   2.3 Deliver a prioritized relevant differential diagnosis for each patient clinical presentation.
   2.4 Select and interpret appropriate cost-effective interventions for the management, prevention and health promotion in patient care.
   2.5 Establish goals of care in collaboration with other health professionals, patients and their families to optimize outcomes.
   2.6 Develop an effective and appropriate patient-centered management plan.
   2.7 Participate effectively in patient and family-centered care, valuing each patient’s and family’s unique needs.

3. Plan and perform procedures and therapies for patient management.

   3.1 Determine appropriate procedures or therapies for a patient’s care.
   3.2 Participate in obtaining and documenting informed consent (including risks, benefits and rationale) for a proposed procedure or therapy.
   3.3 Discuss and participate in prioritizing a procedure or therapy, considering clinical urgency and available resources.
   3.4 Perform a designated procedure in a skillful and safe manner at the level of an undifferentiated physician, adapting to findings and changing clinical circumstances.
   3.5 Demonstrate effective documentation of a procedure or therapy recommended or delivered to a patient.
4. **Formulate and implement plans for ongoing patient care and when appropriate seek timely consultation.**

   4.1 Formulate and assist in implementing a comprehensive patient-centered care plan.
   4.2 Perform timely follow-up on all inquiries, investigations, outcomes and suggest consultation or intervention where appropriate.

5. **Actively contribute as a member of a team providing care, to the continuous improvement of health care quality and patient safety.**

   5.1 Recognize and respond to patient safety incidents arising in health care.
   5.2 Understand the principles of and contribute to patient safety and quality improvement through human and system factors.
   5.3 Participate in a disclosure of adverse events to patients, families, caregivers with other health professionals.

**Communicator**

Communicators form relationships with patients, families, communities, colleagues and members of Interprofessional teams to facilitate gathering and sharing essential knowledge and create plans for effective care. Communicator involves all verbal and non-verbal actions in encounters. As Communicators, learners invoke a professional approach to all discussions using verbal and non-verbal skills, written text, and illustrations to convey information, including social and electronic media.

1. **Develop and recognize the essential skills of a communicator**

   1.1 Engage in patient-centred care that supports autonomy in decision-making and establishes trust while demonstrating empathy, respect and compassion.
   1.2 Demonstrate effective verbal and non-verbal communication in all contexts of care.
   1.3 Demonstrate effective communication to optimize care outcomes and minimize errors.
   1.4 Effectively communicate respecting the diversity and background of patients, families, communities and colleagues.
   1.5 Ensure an appropriate physical location for all discussions while understanding the context and supporting patient safety, comfort, dignity, privacy and diversity.
   1.6 Deliver information to the patient and family in a humane manner that is clearly understood, encourages discussion and supports full participation in decision-making.
   1.7 Demonstrate skills and methods in the disclosure of adverse outcomes in a timely and complete manner.

2. **Develop a common understanding on issues, problems and plans with patients, families, colleagues and other professionals to develop a shared plan of care.**
2.1 Develop rapport, trust and ethical relationships with patients, families, communities, colleagues and healthcare providers.
2.2 Enable patient-centered active communication in exploring patient symptoms and experience.
2.3 Understand the patient and family's beliefs, values, gender, culture, knowledge, preferences and perspective on care.
2.4 Integrate social, economic, medical, family, life stage, demographic, work/school, and other relevant history factors in the clinical encounter.
2.5 Participate in shared decision-making through common ground for diverse patient and community values including, but not limited to gender, religion and cultural beliefs to address patient health goals.
2.6 Participate in obtaining informed patient consent.
2.7 Demonstrate an approach to managing physical, verbal and emotionally challenging scenarios.

3. Develop practices for documenting and sharing written and electronic information on encounters to optimize clinical decision-making, patient safety, confidentiality and privacy.

3.1 Document clear, accurate and appropriate written and/or electronic records.
3.2 Effectively report clinical encounters and treatment plans to patients, families, and health professionals.
3.3 Demonstrate effective reporting of encounters and treatment during transitions of care.
3.4 Demonstrate professionalism in all communication.
3.5 Demonstrate privacy, data security and confidentiality in written, verbal, social media and electronic communication.
**Collaborator**

Collaborators work cohesively with health-care professionals, community partners, system leaders and stakeholders, colleagues, patients and families to develop, provide, promote, evaluate and improve on quality and efficient patient care. Collaborator is grounded in the team skills of mutual trust, respect, and sharing knowledge in decision-making while respecting diversity across the continuum of care. Through collaboration, physicians participate in effective shared decisions of medical care, education, administration, and scholarship. Collaboration extends as a life skill into the professional’s professional, personal and community life.

1. **Work effectively and appropriately within an Interprofessional health care team.**
   1.1 Demonstrate an understanding of the integrated responsibilities and skillsets of health care team members.
   1.2 Demonstrate the ability to identify, develop, research and communicate new knowledge in care with the health care team.
   1.3 Work effectively and respectfully with patients, families and health professionals to provide patient and family-centered care.
   1.4 Participate in shared decision-making with patients, families, and other health professionals.
   1.5 Demonstrate the verbal and written skills necessary to safely handover care to health care team members in all clinical contexts.

2. **Contribute to a positive professional work and care environment.**
   2.1 Demonstrate respect for patients, families and all health professionals.
   2.2 Demonstrate how to navigate interpersonal differences, misunderstandings, and limitations of dialogue to foster a positive collaborative professional culture

**Leader**

As leaders, physicians engage with members of the health care team and other system partners in the creation, delivery, review and continuous improvement of patient care and system function. Leaders demonstrate actions through collaboration, communication, engagement, empowerment and continual improvement while balancing personal, clinical, scholarly and educational roles. Leaders frame all decisions in local, national and global contexts.

1. **Contribute to the improvement of health care delivery in teams, organizations and systems.**
   1.1 Apply the science of quality improvement to improving patient safety and systems of care.
   1.2 Analyze and address patient safety incidents to enhance care.
   1.3 Utilize health informatics to improve the quality of care and optimize patient safety.
   1.4 Demonstrate an understanding of the governance and financial operations of the Canadian healthcare system.
2. Demonstrate the ability to utilize resources for cost-effective healthcare.
   2.1 Understand how care is impacted by healthcare resources.
   2.2 Apply evidence-based processes to deliver cost-appropriate care across all patient care contexts.
   2.3 Describe how public health and health policy shape the delivery of our healthcare system.

3. Demonstrate key elements of leadership in your role as an individual, professional, team contributor and a member of the community.
   3.1 Apply the principles of change management to enhance healthcare outcomes.
   3.2 Set priorities and manage time in professional responsibilities and personal life.
   3.3 Implement processes to ensure personal and professional continuous improvement.
   3.4 Participate in teams with other health professionals in respectful and effective decision-making.
   3.5 Demonstrate an approach to managing professional and personal finances.

Health Advocate
Health advocacy is integral to advancing the health and well-being of patients and families, communities and populations. Advocates deliver on their social accountability mandate for improving local, national and global health care. Advocates focus attention on and communicate for and support effective change on behalf of, or with: patients and families, health care partners and system leaders and stakeholders.

1. Identify and respond in a socially accountable manner to the health care needs of patients and families by advocating for and with them in promoting healthy outcomes and disease prevention.
   1.1 Utilize determinants of health including environmental, social, behavioral and health system perspectives when improving access to care.
   1.2 Work with patients and families to adopt healthy behaviors.
   1.3 Demonstrate skills that advance health promotion and surveillance to positively influence the health of patients and their families.

2. Identify and respond in a socially accountable way to the health care needs of communities or populations served by advocating for system-level change that promotes healthy outcomes and disease prevention.
   2.1 Engage with communities and/or populations to identify and address determinants of health including environmental, social, behavioral and system policies that impact their health.
   2.2 Advance patient care by health promotion, disease prevention and health surveillance in the communities served.
2.3 Apply health knowledge to a quality improvement process that positively improves the health of the communities and populations served.

**Scholar**

Scholars demonstrate a lifelong commitment to excellence through lifelong learning, teaching and modelling, evaluating evidence in decision making, and contributing to expanding the science of medicine. In acting as a Scholar, students commit to the application, dissemination, translation, and creation of knowledge and practices applicable to advancing health care.

Learners acquire scholarly abilities by continually evaluating the processes and outcomes of their daily work and actively seeking feedback in the interest of quality improvement and patient safety. Scholars formulate questions to address knowledge gaps and arrive at decisions informed by evidence. Scholars identify pertinent evidence, evaluate it using criteria, and apply it in practice and scholarly activities while including patient values and preferences.

1. **Engage in lifelong learning**
   1.1 Identify personal learning needs and create a plan of action.
   1.2 Identify opportunities for learning and improvement by regularly assessing performance using internal and external data.
   1.3 Engage in collaborative learning with colleagues and other health professionals.
   1.4 Review outcomes using quality improvement processes to identify items for analysis.

2. **Participate actively in the education of self and others.**
   2.1 Recognize and address role modelling and impact of the informal or hidden curriculum.
   2.2 Promote a safe learning environment for all.
   2.3 Plan and deliver personal, other professional and community lifelong learning activities.
   2.4 Provide meaningful feedback for improvement to peers, mentors and programs.
   2.5 Evaluate peers, teachers, and education programs using relevant tools and practices.

3. **Integrate best available evidence into learning and decision-making.**
   3.1 Recognize personal and system knowledge gaps in patient care
   3.2 Generate focused questions that address gaps.
   3.3 Critically evaluate the integrity, reliability and applicability of research literature.
   3.4 Integrate evidence into clinical decision-making.
   3.5 Formulate well-structured questions and consult scholarly resources in confronting a patient care problem.
3.6 Discuss selecting the most appropriate action in the absence of evidence.
3.7 Interpret qualitative and quantitative knowledge using standardized practices that address bias, validity, barriers, and relevance to care.
3.8 Apply new knowledge and evaluate the impact on patient care.

4. **Contribute to the creation and dissemination of knowledge applicable to health care.**

4.1 Demonstrate an understanding of the scientific principles of research and the role of evidence and research in health care.
4.2 Identify ethical principles for research and incorporate them into obtaining informed consent, while considering potential harms, benefits and needs of vulnerable populations.
4.3 Pose questions for inquiry, select methods to address them and share results.
4.4 Communicate findings of relevant research and scholarly research to peers, other health professionals, communities, patients and families.
4.5 Generate original scholarly work for dissemination to broad or specific communities.

**Professional**

As health professionals, students work to develop a professional identity acknowledging a commitment to the health and well-being of patients, families, society and their colleagues. Embracing ethical patient care, high personal standards, accountability to the profession, society and the educational program while maintaining personal health, students evolve as professionals. Professionals commit to competence through ongoing professional development, promotion of the public good, meeting the values of integrity, honesty, altruism, and humility, respecting diversity, and full transparency in any or all potential conflicts of interest.

1. **Demonstrate a commitment to the needs of patients and families by applying integrity, honesty, altruism, respect, and best practices while adhering to high ethical standards.**

1.1 Demonstrate appropriate professional behaviours and relationships in all patient care while respecting diversity, and maintaining confidentiality.
1.2 Demonstrate a commitment to excellence in all aspects of patient and family centred care.
1.3 Recognize and develop an approach to ethical dilemmas as they present.
1.4 Recognize and manage all conflicts of interest.
1.5 Demonstrate professional behaviours in the use of technology-enabled communication.
1.6 Respect autonomy of individual patients regardless of age, sex, gender, ethnic origin or religious beliefs consistent with the Canadian Charter of Rights and Freedoms.
2. Demonstrate a commitment to society by applying integrity, honesty, altruism, and respect in recognizing and responding to community expectations in health care.

2.1 Demonstrate accountability to patients and families, society, the community you serve and our profession in responding to expectations.
2.2 Demonstrate commitment to patient safety and quality improvement.

3. Demonstrate a commitment to the profession by applying integrity, honesty, altruism, and respect in adhering to accepted standards.

3.1 Understand and adhere to the professional and ethical codes, expectations and requirements of our school, program and profession.
3.2 Recognize and respond to address all unprofessional and unethical behaviours in colleagues, teachers, mentors, patients and families, communities and other professionals.
3.3 Contribute regularly to meaningful peer assessment.
4. Demonstrate a commitment to personal health and well-being.

   4.1 Exhibit self-awareness and address all influences on personal well-being and professional performance.
   4.2 Promote a culture that recognizes, supports, and responds effectively to colleagues in need.
   4.3 Develop and maintain sustainable personal health, work and learning habits.
   4.4 Demonstrate skill in reflective practice and individual improvement to seek excellence in performance.

Contributions

The Associate Dean, Undergraduate Medical Education and the Curriculum Committee of the MD Program at the Schulich School of Medicine & Dentistry wishes to recognize and thank the extraordinary effort of students, faculty and staff who collaborated to produce this set of program competencies.

The Program also thanks contributors to the CanMEDS 2015 Physician Competency Framework and the Royal College of Physicians and Surgeons of Canada – Jason R. Frank, Linda Snell and Jonathan Sherbino - for establishing the foundation on which Canadian medical education programs can build measurable, accountable, competency based academic learning and assessment programs.
# Appendix G: Stages of Curriculum

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<th>Course</th>
<th>Foundations</th>
<th>Stage 1</th>
<th>Year 2</th>
<th>Stage 2</th>
<th>Year 3</th>
<th>Stage 3</th>
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<td>Block 2</td>
<td>Block 3</td>
<td>Block 4</td>
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<td>Clerkship</td>
<td>Electives</td>
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<td>Course Goals</td>
<td>Introduction, use and assessment of the key background concepts that form the basis for delivering evidence-based socially accountable patient-centered health care in Canada.</td>
<td>Introduction, learning and assessment of foundational and mid program curricular conceptions in key body systems by individual and integrated between some or all course systems and those learned prior to this course at Chrom 1-2 level.</td>
<td>Introduction, learning and assessment of foundational and mid program curricular conceptions in key body systems by individual and integrated between some or all course systems and those learned prior to this course at Chrom 1-2 level.</td>
<td>Transition to Clerkship. Integration and consolidation of key curricular content and competencies to date using course and seminar learning with assessment to demonstrate Chrom 2 level of competency. Assessment of clinical competency for delivering patient care in Clerkship rotations with clinical and inpatient settings.</td>
<td>Integration of clinical learning in a variety of teams across six (6) core patient care rotations with elective learning experiences to advance and demonstrate though assessment individual learner competency at Chrom 3 level.</td>
<td>Individual clinical and non-clinical elective learning at Western and in other centers to advance competency in each student targeted career path.</td>
<td>Advanced learning in key areas to assess learner outcomes (EPA) for Chrom 3B level. Learning to improve successful graduate transition to residency.</td>
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