2022 CERI Research Symposium

Thursday, October 6, 2022
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Learning Objectives
By the end of the Research Symposium the learner will be able to:

- Identify new topics pertinent to health professions education
- Recognize advances in medical education research and scholarly innovations
- Appraise and discuss the presentations with respect to methodology and applicability to health professions education

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<th>Time</th>
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<tr>
<td>8:00 – 8:30 a.m.</td>
<td>Registration &amp; Coffee</td>
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<tr>
<td>8:30 – 8:45 a.m.</td>
<td>Opening Remarks</td>
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<td>Dr. Chris Watling, CERI Director</td>
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<tr>
<td>8:45 – 10:00 a.m.</td>
<td>Annual Weston Lecture in Medical Education</td>
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<td><em>Moderated by Chris Watling</em></td>
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<td>Dr. Mark Goldszmidt</td>
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<td>Professor, Department of Medicine</td>
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<td>Scientist, CERI</td>
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<td>“We’re all different, we’re all the same: Reflections on a decade of research on practice variability and its implications for research, education and clinical care”</td>
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Learning Objectives
By the end of the presentation the learner will be able to:

1. Critically reflect on the impacts of practice variability on clinical care
2. Consider how practice variability impacts clinical education processes and outcomes
3. Determine how to account for practice variability in clinical and educational research
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<td>10:00 – 10:30 a.m.</td>
<td>Networking &amp; Coffee</td>
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| 10:30 – 11:30 a.m.  | Oral Abstract Presentations 1: Educational Innovations  
*Moderated by Erin Kennedy*  
1. Talking about notes: Discharge summary quality and improvement on a geriatric inpatient unit (Alysha Burrell)  
2. The Medical Sciences Community Outreach Team (MaSCOT): Students as Partners & Contributors to the Community (Sarah McLean)  
3. Comparing individual vs. team-based decision making using simulated exercises in a Master of Public Health program (Shannon Sibbald)  
4. Development of an on-call assessment tool for surgical specialties (Eric Mitchell)  
Learning Objective  
By the end of the presentations the learner will be able to:  
- Reflect on educational innovations within medical education literature |
| 11:30 a.m. - 12:15 p.m. | Networking & Lunch                           |
| 12:15 – 1:00 p.m.  | Meet-the-Scientist                           
Dr. Jacqueline Torti  
Assistant Professor, Department of Medicine  
Scientist, CERI  
“Seeking wellness through a character-lens in health professions education”  
Learning Objectives:  
By the end of the presentation the learner will be able to:  
- Describe Character-Based Leadership and its role in health professions education  
- Recognize the connection between character development and well-being  
- Consider the connections between leadership and other methodological and theoretical orientations in health professions education research |
| 1:00 – 2:15 p.m.   | Oral Abstract Presentations 2: Learning & Curriculum  
*Moderated by Jill Dombroski*  
1. Do Postgraduate trainees select tasks to maximize learning? (Sarah Blissett)  
2. The art of transformation: A critical narrative review of the arts and humanities in medical education for transformative learning & social advocacy (Snow Wangding)  
3. Exploring the medical school training experiences of Canadian medical students with a background in Arts & Humanities (Arjun Patel)  
4. Residents, responsibility and error: How residents learn to navigate the intersection (Stephanie Chilton) |
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<tr>
<td>2:15 – 2:30 p.m.</td>
<td>1-minute Poster Presentations</td>
<td><strong>Moderated by Lorelei Lingard</strong></td>
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<td>1. Back from the brink: A novel approach to clinician-scientist training (J Colin Evans)</td>
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<td>2. Timespace as a unit of analysis in HPE research (Alena Tarasevich)</td>
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<td>3. Examining the effect of virtual learning on Canadian pre-clerkship medical student well-being during the COVID-19 pandemic (Asaanth Sivajohan)</td>
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<td>4. Initial steps toward incorporating Indigenous content into an introductory biochemistry course (Derek McLachlin)</td>
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<td>5. Exploring the landscape of leadership development for nurse practitioners: A systematic review (Erin Kennedy)</td>
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<td>6. Assessing integration of team cognition in Canadian emergency medicine simulation programs: a methodology (Aman Sehmbi)</td>
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<td>7. End of life conversations: Exploring health care professionals' experiences (Jill Dombroski)</td>
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<td>8. The impacts of parenting quality prior to and during COVID-19 on the mental health and service utilization of treatment-seeking children and youth (Abigail Withers)</td>
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<td>9. Education of future Public Health professionals through integrated workshops (Shannon Sibbald)</td>
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**Learning Objective**
By the end of the presentations the learner will be able to:
- Consider medical education research within professional practice.

| 2:30 – 3:00 p.m. | Poster Viewing & Coffee                      | Vote for best poster: |
3:00 – 4:15 p.m.

Oral Abstract Presentations 3: Peers, Leaders & Teams

Moderated by Sayra Cristancho

1. How do medical clerks successfully integrate into clinical teaching teams? A scoping review (Majid Mohamed)
2. The role of character in physician leadership (Jacqueline Torti)
3. Distinguishing supportive and collaborative interdependence to better understand individuals’ contributions to the healthcare team (Lorelei Lingard)
4. “For the most part it works”: Exploring how authors navigate peer review feedback (Chris Watling)
5. Artificial intelligence as a teammate: A critical interpretive synthesis of artificial intelligence-human teamwork literature (Natalie Palumbo)

Learning Objective

By the end of the presentations the learner will be able to:
- Identify elements of peers, leaders & teams in medical education research and practice.

4:15 – 4:30 p.m.

Awards Presentations
Dr. Lisa Shepherd

Closing Remarks
Dr. Chris Watling

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25% of this symposium is dedicated to participant interaction

RCPSC (MOC Section 1) This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada, and approved by Continuing Professional Development, Schulich School of Medicine & Dentistry, Western University. You may claim a maximum of 5.75 hours (credits are automatically calculated)

This symposium has no commercial support
ABSTRACTS
Educational Innovations

Title:
Talking about notes: discharge summary quality and improvement on a geriatric inpatient unit

Presenting Author, Department & Institution:
Alishya Burrell, Department of Medicine, Western University

Co-Authors, Departments & Institutions:
Mark Goldszmidt, Department of Medicine, Western University

Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
Discharge summaries are important educational tools, guiding trainees in their collection and documentation of data. As geriatric competencies are integrated in medical curricula, documentation on inpatient geriatric rotations should represent the unique care and education provided, yet often follow generic templates. What content should be included in a geriatric discharge summary has not previously been explored and was the purpose of this study.

Research ~ Methods OR Educational Innovation ~ Intervention:
A mixed-methods designed-based research approach was used to assess note quality on a geriatric inpatient unit and iteratively co-develop a template with examples through three phases: (1) needs assessment, (2) consensus building and (3) template development.

Research ~ Results OR Educational Innovation ~ Observations:
Sixty-eight discharge summaries were assessed by five geriatricians, with 14 gaps identified. Many of these reflected elements that were present but addressed generically without attention to the specificity required from a geriatric perspective. In response, the team developed a geriatric-specific template with explicit examples. Through the consensus process three barriers to quality notes and trainee education were identified: the chronic state of low-quality notes being accepted as the norm, time limitations due to the high volume of patients, and high volume of clinical documents.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
The identification of gaps in geriatric discharge summaries allowed for the co-development of an instructional template and examples that goes beyond simple headings and highlights the importance of applying and documenting geriatric competencies. Although we encourage others to take up and modify the tools for trainees in their local context, more importantly, we encourage them to take up the dialogue about note quality.

Three single keywords: discharge summary, clinical documentation, geriatric competencies
The Medical Sciences Community Outreach Team (MaSCOt) - Students as Partners and Contributors to the Community

Presenting Author, Department & Institution:
Sarah McLean, Department of Anatomy & Cell Biology, Western University

Co-Authors, Departments & Institutions:
Jedd Sardido, Schulich School of Medicine & Dentistry, Western University

Research ~ Background/Purpose OR
Educational Innovation ~ Context/Setting:
This presentation will outline the development and pedagogical principles behind MaSCOt, a new co-curricular community-engaged learning opportunity jointly developed by faculty, community partners, and students at Schulich Medicine and Dentistry in the Bachelor of Medical Sciences.

Research ~ Methods OR
Educational Innovation ~ Intervention:
How can students become change agents in their communities while simultaneously learning transferable skills and an understanding of social determinants of health? With MaSCOt, we believe that students develop essential skills such as empathy, perspective-taking, and leadership through experience. Importantly, co-curricular community-engaged learning offers an avenue for students to develop these "soft skills" that instructors often assume that students have already learned. Finally, by engaging directly with local community partners, we believe that students will form a greater sense of connection to the London community that will positively impact their academic development. By forming a team of community partners, students, and faculty, we created a modular-based training program for students to engage in prior to their volunteer opportunity with MaSCOt. This approach upholds an ethos of reciprocity between community partners and the academic institution that can be overlooked in volunteer and service-learning activities.

Research ~ Results OR
Educational Innovation ~ Observations:
By directly involving community partners through informational interviews for an environment scan of their needs, we were able to customize the topics essential for students' success with their organizations. Students were engaged throughout the summer as co-creators of content, acting as partners to ensure that the needs of students were addressed and the student perspective was top-of-mind for our modules.

Research ~ Conclusions OR
Educational Innovation ~ Discussion:
Moving forward, we are excited to roll-out this new educational innovation and begin collecting data on volunteer hours and engagement with the community. Ultimately, we would like to conduct a phenomenological research study to evaluate the impact of co-curricular CEL on students’ sense of belonging during their undergraduate studies. Potential approaches to this research question will be addressed in the presentation.

Three single keywords:
engagement, reciprocity, community
Comparing Individual vs. Team-based Decision-making using Simulated Exercises in a Master of Public Health Program

Presenting Author, Department & Institution:
Shannon L. Sibbald, Department of Family Medicine, Faculty of Health Sciences, School of Health Studies, Schulich School of Medicine and Dentistry, Western University

Co-Authors, Departments & Institutions:
Mark Speechley, Department of Epidemiology and Biostatistics, Schulich School of Medicine and Dentistry, Western University
Nicole Campbell, Department of Physiology and Pharmacology, Schulich School of Medicine and Dentistry, Western University

Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
Masters of Public Health (MPH) students require the expertise to adapt and coordinate responses during health emergencies, particularly mobilizing their efforts alongside other disciplinary teams. The School of Medicine & Dentistry hosts an interfaculty 12-month program recognized by the Council on Education for Public Health (CEPH). The curriculum emphasizes group-based learning through learning teams (LTs) and the use of the case-based method.

Research ~ Methods OR Educational Innovation ~ Intervention:
LTs, typically of six students, are formed by program faculty and staff in September and remain for the entire year. LTs are intentionally created to balance personal characteristics and be as diverse as possible in gender, country of origin, race/ethnicity, educational/professional background, and years of experience. We collected quantitative data from three cohorts of Master of Public Health students to determine if teams make better decisions than individuals (‘team effect’) between September and January. Students completed simulated emergency survival exercises requiring them to make correct decisions individually and then as teams. Decision quality was determined by comparison to survival experts’ decisions. We calculated the ‘team effect’ as the gain or loss of mean individual vs. group scores across 10 learning teams for fall and winter exercises.

Research ~ Results OR Educational Innovation ~ Observations:
The LTs that have undergone simulated team-based exercises empirically demonstrate a substantial improvement in team decision-making between September and January.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
This study demonstrates the potential benefit of incorporating team-based learning and using simulation in health education to help prepare students for interprofessional collaboration. These results might help convince students of the benefits of teamwork, facilitate collaborative decision-making, and enhance the learning experience.

Three single keywords:
learning teams, public health education, simulated learning
Title: Development of an on-call assessment tool for surgical residents

Presenting Author, Department & Institution: Eric Mitchell, Plastic and Reconstructive Surgery, Schulich School of Medicine & Dentistry

Co-Authors, Departments & Institutions: Aaron Grant, Plastic and Reconstructive Surgery, Schulich School of Medicine & Dentistry Doug Ross, Plastic and Reconstructive Surgery, Schulich School of Medicine & Dentistry Michael Ott, General Surgery, Schulich School of Medicine & Dentistry

Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting: Success of competency-based medical education depends on regular assessment of resident competence across all care settings. Residents spend a significant portion of time throughout training on-call, often with increased autonomy and they practice decision-making and technical skills without direct supervision. There are currently no formative assessment tools available to surgical educators to provide structured feedback to residents based on their on-call performance. The purpose of this study was to develop an assessment tool for this setting and collect validity evidence on its application.

Research ~ Methods OR Educational Innovation ~ Intervention: A consensus group using nominal group technique was held to identify important elements of surgical resident competence on-call. A tool was developed based on these elements, incorporating a novel 5-point construct-aligned scale. The tool was piloted over 6 months in the Division of Plastic & Reconstructive Surgery. Qualitative and quantitative methods were used to gather validity evidence on the tool through semi-structured interviews and psychometric analysis of scores.

Research ~ Results OR Educational Innovation ~ Observations: A 10-item tool was developed which included optional patient feedback. 63 tools were completed by 7 staff members for 10 residents. Thematic analysis of semi-structured interviews found the tool improved the quantity and structure of feedback given and that it was considered feasible and acceptable. The tool had a reliability coefficient of 0.67 based on a generalizability study and scores were significantly associated with year of training.

Research ~ Conclusions OR Educational Innovation ~ Discussion: Our novel on-call assessment tool has multiple sources of validity evidence to support its intended purpose of assessing surgical resident competence on-call. Further research is required to assess generalizability across specialties.

Three single keywords: assessment, validity, surgery
Title: Do postgraduate trainees select tasks to maximize learning?

Presenting Author, Department & Institution: Sarah Blissett, Department of Medicine, Western University

Co-Authors, Departments & Institutions: Emma Mensour, Department of Medicine, Western University; Jennifer M Shaw, Department of Gender, Sexuality and Women’s Studies, Western University; Leslie Martin, Department of Medicine, McMaster University; Stephen Gauthier, Department of Medicine, Queen’s University; Anique De Bruin, Department of Educational Development, Maastricht University; Samuel Siu, Department of Medicine, Western University; Matt Sibbald, Department of Medicine, McMaster University

Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
It is imperative that postgraduate trainees engage in clinical tasks in their zone of proximal development (ZPD) to maximize learning. The problem is they could jeopardize their learning by selecting tasks that are too easy or too hard. We do not fully understand how trainees select clinical tasks. If we knew the goals and factors they consider when selecting a task, we could design strategies to select tasks that maximize learning. We explored how postgraduate trainees select clinical tasks using echocardiography interpretation as a model.

Research ~ Methods OR Educational Innovation ~ Intervention:
Canadian General Cardiology residents and Echocardiography fellows were invited to participate in semi-structured interviews. Two independent researchers used a directed content analysis approach to identify codes and themes.

Research ~ Results OR Educational Innovation ~ Observations:
Eleven trainees from 7 Canadian universities participated (PGY4=4, PGY5=3, PGY6=1, echocardiography fellows=3, female=3). Goals included learning content, fulfilling assessment criteria, and contributing to clinical demands. Trainees switched between goals throughout the day, as it was too effortful for them to engage in tasks within their ZPD at all times. When trainees had sufficient mental effort available, they selected higher complexity tasks that could advance learning content. When available mental effort was low, trainees selected less complex tasks that fulfilled numerically-based assessment goals or contributed to clinical demands. Trainees predominantly used perceived complexity of the echocardiogram as a factor to select tasks to achieve their desired goals.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
Postgraduate trainees select tasks within their ZPD that enable them to maximize learning when they perceive to have sufficient mental effort and support available. These findings can inform individual and systemic strategies to maximize learning when selecting tasks.

Three single keywords: task selection, postgraduate medical education, mental effort
Title:
The art of transformation: A critical narrative review of the arts and humanities in medical education for transformative learning and social advocacy

Presenting Author, Department & Institution:
Snow Wangding, Department of Medicine, Schulich School of Medicine & Dentistry

Co-Authors, Departments & Institutions:
Dr. Tracy Moniz, Department of Communication Studies, Mount Saint Vincent University
Dr. Paul Haidet, Department of Medicine, Penn State College of Medicine
Dr. Benjamin Vipler, Department of Medicine, University of Colorado School of Medicine
Dr. Javeed Sukhera, Department of Psychiatry, Hartford Hospital
Dr. Lorelei Lingard, Department of Medicine Schulich School of Medicine & Dentistry

Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
The arts and humanities have transformative potential in medical education. Research suggests that arts and humanities-based pedagogies may facilitate both personal and professional transformation, which can further enhance teaching and learning on social advocacy. Despite their potential, there is a paucity of research that explores how arts and humanities-based approaches may foster such objectives. Therefore, we sought to explore how the arts and humanities may facilitate transformative learning and social advocacy in medical education.

Research ~ Methods OR Educational Innovation ~ Intervention:
Building upon previous literature reviews, we conducted a critical narrative review seeking examples from the literature on how arts and humanities practices may promote transformative learning and social advocacy. We identified 11 articles and analyzed them based on both a descriptive and interpretative analysis of how they related to key tenets of transformative learning including: disorientation/dissonance, critical reflection, skill development, and action.

Research ~ Results OR Educational Innovation ~ Observations:
We found that arts and humanities are used in varied and largely limited ways to foster transformative learning and social advocacy. Although arts and humanities may be useful to elicit disorientation and dissonance, there is less evidence in the literature regarding how they may be of potential utility when applied to critical reflection, facilitated dialogue, or action.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
The tremendous potential of the arts and humanities to foster personal and professional transformation remains somewhat constrained. Future research must consider how novel approaches that draw from the arts and humanities may foster discussion and action in the application of transformative learning pedagogy.

Three single keywords: humanities, advocacy, learning
Title:
Exploring the Medical School Training Experiences of Canadian Medical Students with a Background in Arts and Humanities

Presenting Author, Department & Institution:
Arjun Patel, MSc, Schulich School of Medicine and Dentistry, Western University

Co-Authors, Departments & Institutions:
Khadija Ahmed, MSc, Schulich School of Medicine and Dentistry, Western University
Lorelei Lingard, PhD, Undergraduate Medical Education, Western University

Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
Arts and Humanities (A/H) training is a powerful strategy to help medical students develop humanistic and reflective competencies. These skills align with the CanMEDS roles that physicians are expected to embody. Despite calls for medical schools to integrate A/H in training, there are challenges in formal programming and allotting curricular time. However, it may be that some students enter medical school with skills from prior A/H training. Exploring the experiences of this unique student body could inform practices in medical education.

Research ~ Methods OR Educational Innovation ~ Intervention:
Descriptive qualitative research methodology was used to conduct semi-structured interviews exploring the perspectives of Canadian medical students with an A/H degree or training in A/H (n=13). Domains such as identity, integration of interests, and challenges in maintaining A/H interests were explored.

Research ~ Results OR Educational Innovation ~ Observations:
Participants described their A/H identity as intertwined with their identity as medical trainees and described their sense of interconnection between the disciplines. Challenges included imposter syndrome and difficulties in relating with peers. Participants described returning to A/H interests as a tool for wellness, and perceived a positive A/H hidden curriculum which served their needs better than explicit integration of A/H content.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
Medical students with a background in A/H describe this as offering both affordances and challenges for their sense of identity, belonging, and wellness. These students come with dispositions of value to medicine and they perceive a positive, hidden A/H curriculum that supports their maintenance of these dispositions during training. Understanding more could help foster the development of well-rounded and humanistic physicians in the entire medical class.

Three single keywords: medicine, arts, humanities
Residents, Responsibility and Error: How Residents Learn to Navigate the Intersection

Presenting Author, Department & Institution:
Stephanie Chilton, Division of Emergency Medicine, Department of Medicine, Schulich School of Medicine and Dentistry, Western University

Co-Authors, Departments & Institutions:
Lisa Shepherd, Division of Emergency Medicine, Department of Medicine, Researcher, Centre for Education Research & Innovation (CERI) Schulich School of Medicine and Dentistry, Western University, Sayra Cristancho, Dept. of Surgery and Faculty of Education; Scientist, Centre for Education Research & Innovation (CERI), Schulich School of Medicine and Dentistry, Western University

Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
As a competency of Canadian postgraduate education, residents are expected to “demonstrate the ability to promptly disclose medical errors, take responsibility for and steps to remedy mistakes”. How residents, vulnerable through their inexperience and hierarchical team position, navigate the highly emotional experience of medical error is underexplored. The purpose of this study was to better understand how residents perceive learning to become responsible for patients who have experienced a medical error.

Research ~ Methods OR Educational Innovation ~ Intervention:
Using a constructivist grounded theory methodology, 19 residents, from a breadth of specialties and years of training at Western University, were recruited to participate in semi-structured interviews probing their experience caring for patients who had experienced a medical error. Data collection and analysis were conducted iteratively with themes identified through constant comparative analysis.

Research ~ Results OR Educational Innovation ~ Observations:
Participants described their process of developing intuition around error and the positive and negative influences that shaped their thinking. The demands of residency including heavy workload, fatigue and constantly changing environments, were felt to heighten their risk of making error but also challenge their ability to find support through an emotionally trying time.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
Teaching residents to avoid making errors is important, but it cannot replace the critical task of supporting them clinically and emotionally when errors inevitably occur. A better understanding of how residents learn to become responsible for medical error offers guidance for educators to explicitly discuss errors and provide emotional support in their management. Improving residents’ early career experience navigating error can shape future behaviour as role models and teachers for those that follow.

Three single keywords: error, residents, responsibility
Title: Uncommon Places: Learning from the design of Competence by Design

Presenting Author, Department & Institution:
Mary Ott, Faculty of Education, Western University

Co-Authors, Departments & Institutions:
Lori Dengler & Kathy Hibbert, Faculty of Education, Western University

Research ~ Background/Purpose OR
Educational Innovation ~ Context/Setting:
Curriculum making is a contested, contextual, ongoing process. However, the literature on curriculum design for CBME is largely conceptual. In the national implementation of Competence by Design, there is opportunity to study the process. According to Schwab, four “commonplaces” should be represented as sites of decision making. How were the commonplaces of teachers, learners, milieu, and subject matter expert included in the design of Competence by Design? Understanding the influence of these commonplaces can offer insights for curriculum improvement.

Research ~ Methods OR
Educational Innovation ~ Intervention:
This thematic analysis uses Schwab’s theoretical framework to interpret a set of 18 semi-structured interviews with CBD implementation leads at national, institutional, and program levels in 3 provinces. Interviews explored participants’ experience of the process of curriculum design and translation to practice. Two researchers independently coded the data to identify examples of human and material actors representing the commonplaces. We then engaged in 4 analytic team meetings to discern the effects of inclusions and exclusions in these sites of decision making.

Research ~ Results OR
Educational Innovation ~ Observations:
The commonplace of subject matter expert was well-represented, while the perspectives of teachers and learners were frequently overlooked. We found three, often unanticipated material actors in the milieu for CBD, represented by institutional policies, technologies, and training contexts. When silent or hidden, the commonplaces of teachers, learners, and milieu had unintended consequences of disconnecting assessment and entrustment from tailored learning experiences in early implementation of CBD.

Research ~ Conclusions OR
Educational Innovation ~ Discussion:
This study of curriculum making in Competence by Design offers empirical and critical insights to inform quality improvement of competency-based curricula in medical education.

Three single keywords: curriculum making, competence by design, quality improvement
Title: Back from the brink of extinction: A novel approach to clinician-scientist training

Presenting Author, Department & Institution: J. Colin Evans, PGY 3, Emergency Medicine, Research Fellow, Centre for Education Research and Innovation, Schulich School of Medicine and Dentistry, Western University

Co-Authors, Departments & Institutions: M. Blair Evans, Psychology, Western University
Lorelei Lingard, Centre for Education Research and Innovation, Schulich School of Medicine and Dentistry, Western University

Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting: Clinician-scientists are an increasingly endangered species and the opportunity for residency trainees to develop an expertise in the rigors of scientific inquiry are limited. The traditional pathways for investigator development are criticized as either too arduous, or inadequate, resulting in few opportunities to develop skills necessary to be a nationally and internationally competitive investigator.

Research ~ Methods OR Educational Innovation ~ Intervention: We have developed a longitudinal, skills-oriented training pathway that includes protected research time throughout a 5-year emergency medicine residency. This program features scientist co-supervision (CERI, Dept. of Psychology) with clinician support for all projects. Objectives are co-determined dynamically as the trainee gains exposure and a greater understanding of their area of interest.

Research ~ Results OR Educational Innovation ~ Observations: The program objectives emphasize a variety of scientific methods, as well as proficiency in ethics submission and grant-writing; however, we have also observed the trainee develop a more programmatic mindset towards research and build an international collaboration of experts to support his program while gaining mentorship and supervisory skills as he oversees a medical student researcher pursue a project of their own.

Research ~ Conclusions OR Educational Innovation ~ Discussion: In 2018, the Canadian National Consensus Conference identified several threats to the dwindling population of clinician-investigators and proposed recommendations including the need for non-traditional training pathways and training on a continuum. In response, we present a longitudinal resident physician research fellowship that includes extensive mentorship and protection. To date, this fellowship has yielded not only an enhanced skillset of research fundamentals, but also induced in the candidate the strategic, collaborative, and supervisory approach essential for success as a clinician-scientist.

Three single keywords: Clinician-scientist, fellowship, residency
Title:
Timespace as a Unit of Analysis in HPE Research

Presenting Author, Department & Institution:
Alena Tarasevich, CERI, the University of Western Ontario

Co-Authors, Departments & Institutions:
Mark Goldszmidt, CERI, the University of Western Ontario

Research ~ Background/Purpose OR
Educational Innovation ~ Context/Setting:
In HPE, researching practice and learning in practice is key as it is from and within practice that trainees learn to become practitioners. However, clinical settings are fraught with many tensions related to patient care and clinical education. These tensions shape both practice variability (how practice is organized and functions) and outcomes of care and learning that are feasible to achieve.

Research ~ Methods OR
Educational Innovation ~ Intervention:
We plan to apply the notion of a timespace as a unit of analysis to practice-based research. A timespace is an activity-based segment of time in physical space and recognized as such by practitioners who use it. For example, a surgery team participates in timespaces of pre-rounding, rounding, pre-operative debriefing, operating, etc.

Research ~ Results OR
Educational Innovation ~ Observations:
Because of its focus on activity, timespace approach is uniquely situated for studying practice and clearly articulating tensions that arise in it.

Research ~ Conclusions OR
Educational Innovation ~ Discussion:
Identifying and labelling tensions of practice is only the first, yet necessary step to find a compromise for resolving them and letting practitioners ‘get the job done’. Findings from this type of research can inform curriculum and faculty development; in turn, system change can positively impact patient care and clinical education.

Three single keywords: timespace, tensions, practice-based
Examining the effect of virtual learning on Canadian pre-clerkship medical student well-being during the COVID-19 pandemic

Presenting Author, Department & Institution:
Asaanth Sivajohan, Schulich School of Medicine and Dentistry

Co-Authors, Departments & Institutions:
Nikita Ollen-Bittle, Schulich School of Medicine and Dentistry
Majid Gasim, Schulich School of Medicine and Dentistry
Josh Jesin, Schulich School of Medicine and Dentistry

Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
During the COVID-19 pandemic, pre-clerkship medical education abruptly transitioned to a primarily virtual form of content delivery. The high levels of stress associated with the medical school experience has been well documented, and its connection to poor mental health in medical students is widely viewed as a significant issue. Given the demanding and evolving nature of medical education, it is pertinent that the effects of virtual learning on pre-clerkship medical student wellbeing be understood.

Research ~ Methods OR Educational Innovation ~ Intervention:
This study utilizes a constructivist grounded theory approach to explore how online education during the COVID-19 pandemic has affected Canadian pre-clerkship medical student mental health. Semi-structured interviews were conducted with pre-clerkship medical students from the Schulich School of Medicine.

Research ~ Results OR Educational Innovation ~ Observations:
Participants have repeatedly voiced a feeling of isolation. Feelings that extend beyond the confines of the virtual classroom, encompassing a lack of identity formation as a Western student or medical student. Connections with the class as a whole have been reduced by the online format, limiting student supports and shared bonding surrounding pre-clerkship stress and anxieties for upcoming clerkship. Several students also reported a lack of structure in their day without in-person learning, contributing to noticeable difficulties with school-life balance and motivation. Counterbalancing this, several students raised positive insights such as increased cross-campus collaboration, increased scheduling flexibility and the ability to learn content at one’s own pace.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
The themes presented in this study should serve to inform optimization of future pre-clerkship medicine curriculum planning and content delivery.

Three single keywords: online learning, medical education, student well-being
Title:
Initial steps toward incorporating Indigenous content into an introductory biochemistry course

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Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
Western’s Indigenous Strategic Plan calls on the university community to “nurture an inclusive campus culture that values Indigenous peoples, perspectives, and ways of knowing”, and “enhance Indigenous students’ experience at Western”. In response to this call, I sought to introduce Indigenous perspectives into my introductory biochemistry course in the Fall 2021 term.

Research ~ Methods OR Educational Innovation ~ Intervention:
I delivered a personalized land acknowledgement in the first lecture and noted injustices experienced by Indigenous Peoples on the National Day for Truth and Reconciliation. I connected Indigenous agricultural practices with nutrition information presented in the course. I explained how certain plants traditionally used by Nehiyawok (Cree) healers impacted metabolic pathways related to diabetes. Finally, I named Biochemistry of Indigenous Knowledges as a general area students could consider when choosing an assignment topic.

Research ~ Results OR Educational Innovation ~ Observations:
Students listened respectfully when I spoke about Indigenous topics in class. Two student groups chose to do their assignment on Indigenous-related topics. Three students mentioned my handling of Indigenous issues in the end-of-course survey comments, all favourably. In particular, one student identifying as Indigenous wrote an extended comment about how this aspect of the course impacted them, encouraging me to expand my efforts in this direction.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
Instructors have a responsibility to create an inclusive environment in which all students feel seen, respected, and valued. Indigenous students are underrepresented at university and in STEM disciplines, and are in particular need of encouragement in undergraduate science classrooms. My experiences demonstrate that even small actions can have a positive impact on individual students.

Three single keywords: decolonization, Indigenous students, course design
Exploring the Landscape of Leadership Development for Nurse Practitioners: A Systematic Review

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Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
The dynamic and increasing challenges placed on the health care system necessitate strong leadership. Increasingly, as part of interdisciplinary teamwork models of collaborative leadership are becoming the norm. Yet, little has been done by way of formalized training to equip teams to undertake these essential roles. When leadership is collaborative and interprofessional, healthcare teams become more cohesive, optimizing healthcare accessibility while improving resource utilization and maximizing care quality. Nurse practitioners (NPs) play an important yet unique role within healthcare teams given their unique skill set combining elements of both medicine and nursing practice and are well positioned to assume leadership roles. These roles can include both patient-focused and organization and system-focused leadership responsibilities. Therefore, it becomes prudent to understand the current landscape of leadership development initiatives for NPs to position future development and training opportunities that are both robust and comprehensive.

Research ~ Methods OR Educational Innovation ~ Intervention:
A systematic review of the literature was undertaken to provide an understanding of the current trends, lessons learned and gaps in leadership interventions aimed at developing the leadership skills, attributes and competencies in NPs. Using the PRISMA guidelines for systematic reviews, we searched Medline, Embase, CINAHL, PsychINFO, ERIC and Proquest Nursing and Allied Health utilizing a search strategy developed in consultation with an academic librarian.

Research ~ Results OR Educational Innovation ~ Observations:
Results to date will be shared including initial insights, availability of literature, types of pedagogical methods, conceptual frameworks used, and evaluation outcomes.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
Findings from our systematic review will inform and enhance a character-based leadership course aimed at improving leadership development and training for NPs as well as other health care providers.

**Three single keywords:** interprofessional teams, leadership, systematic review

Title:
Assessing integration of team cognition in Canadian emergency medicine simulation programs—a methodology

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**Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:**
Elements of team cognition including shared mental models and team situational awareness are being integrated into emergency medicine training; however, literature to date has not identified a consistent definition for these constructs, nor has it developed a validated tool for measuring these constructs in this setting. Numerous reviews have identified that research pertaining to team cognition focuses on measuring behaviours while failing to assess the cognitive and affective processes that contribute to those behaviours. Emergency medicine programs are attempting to integrate the findings of this research into their training, but without consistent definitions or comprehensive measurement tools, what exactly are they doing?

**Research ~ Methods OR Educational Innovation ~ Intervention:**
Our target population consists of simulation educators from emergency medicine training programs in Canada. We will recruit participants through an existing network of simulation educators and by distributing study information to emergency medicine program directors. Our study consists of a brief self-report questionnaire via Qualtrics paired with qualitative descriptive interviews, which we will subject to thematic analysis.

**Research ~ Conclusions OR Educational Innovation ~ Discussion:**
Shared mental models and team situational awareness are essential for teams performing interdependent, time-sensitive tasks in dynamic environments and are rapidly being adopted into emergency medicine training curricula. Without adequate definitions or validated tools for evaluating these skills in teams or individuals, we suspect educators are facing the dual challenge of not being able to describe the skill they are trying to teach while also being unable to adequately evaluate it. Our project seeks to assess these challenges as they are currently manifesting in emergency medicine training programs across Canada.

**Three single keywords:** education, simulation, cognition
End of Life Conversations: Exploring Health Care Professionals' Experiences

Jill Dombroski, Faculty of Education, Western

Leading discussions with patients about the reality of an end-of-life prognosis constitutes a challenging conversation. Death and dying are complex phenomena, and engaging in meaningful dialogue with patients and their families struggling with end-of-life support requires a broader understanding. A lack of death and dying education available for many Health Care Professionals (HCP) with little experience may make leading such discussions more challenging. Advancements in thanatology literature practices and training could offer HCPs meaningful ways of thinking about developing the end-of-life support they provide to patients and caregivers.

Using Constructivist Grounded Theory (CGT), 17 semi-structured interviews with HCPs and follow-up interviews were conducted over 7 months to understand HCPs' existing repertoire of knowledge and experiences with end-of-life support and, second, to learn if the theories generated in the field of Thanatology might expand their repertoire. Data was analyzed through an iterative process using constant comparison to build a theoretic framework to understand the participants' shared experiences better.

HCPs' reported that patients' unpreparedness for end-of-life conversations required intensive time and skills in educating the patient. They learned to use direct, explicit language when discussing prognosis to allow patients and families to plan. Many reported being the third or fourth HCP on a team to interact with a patient, but the first to tell them of their life-limiting diagnosis.

In preliminary findings, HCPs recalled that the experience of listening, watching, and learning from their patients was significant. Interestingly, these noted experiences are thanatological practices in nature. Buckle up; it's going to be an exciting ride!

Three single keywords: dying, end-of-life, curriculum
Title:
The Impacts of Parenting Quality Prior to and During COVID-19 on the Mental Health and Service Utilization of Treatment-Seeking Children and Youth

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Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
The COVID-19 pandemic has had profound impacts on children, youth, and families. Caregivers of clinically referred children and youth have experienced stress, yet few studies have sought to investigate parenting quality changes during the pandemic and associations with children’s mental health, especially in clinical samples. Further, children’s mental health service utilization has changed during the pandemic, and although research suggests caregivers impact their child’s mental health service usage, little is known regarding associations between parenting quality and service utilization trends during COVID-19.

Research ~ Methods OR Educational Innovation ~ Intervention:
Using data collected from interRAI Child and Youth Mental Health Assessments of 4–18-year-old clinically referred children, this study will explore changes in parenting quality two years prior to the COVID-19 pandemic compared to two years during the pandemic. This study will investigate parenting quality changes associated with children’s mental health outcomes and service utilization before compared to during the COVID-19 pandemic.

Research ~ Results OR Educational Innovation ~ Observations:
The changes in parenting quality before COVID-19 compared to during the pandemic will be exploratory in nature. It is expected that results will show poor parenting quality to be associated with higher levels of mental health concerns and lower service utilization during the pandemic, compared to pre-pandemic levels.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
It is hoped that findings from this study will develop our understanding of COVID-19 and parenting quality, as well as the role parenting quality has in clinical samples of children and youth. Findings are expected to help inform clinical practice, support clinicians in tailoring treatment planning or family interventions, and specify directions for future research.

Three single keywords: Covid-19, children’s mental health, parenting
Education of Future Public Health Professionals Through Integrated Workshops

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Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
The challenge for educating public health professionals is creating a comprehensive learning environment that prepares students for the complexities of public health. Western University's Master of Public Health program uses three daylong integrative workshops (IWs) to foster integrated learning across courses within the program (Sibbald et al., 2016).

Research ~ Methods OR Educational Innovation ~ Intervention:
There are four key components to IWs in the Western MPH curriculum: (1) a multidisciplinary perspective; (2) incomplete information about the nature, scope, and extent of a specific public health issue; (3) an overarching goal with progressively more complex and challenging objectives to meet; and (4) a well-designed deliverable to work toward meaningful and relevant solutions. The first IW focuses on gathering, reviewing, and synthesizing evidence, along with communicating it effectively. The second IW focuses on applying knowledge to a policy issue by requiring students to formulate and advocate for a particular policy position. The third IW is intended to be a culminating experience that incorporates learning from across the program and is conducted near the completion of all coursework.

Research ~ Results OR Educational Innovation ~ Observations:
Participation in three IWs per year allows students the opportunity to learn from prior IWs and to hone their skills to apply, synthesize, and create new knowledge while working cooperatively under constraints.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
In IWs, students work toward relevant solutions that are feasible within the context and defensible to experts, faculty, and their peers. Integrated workshops are an effective approach to training the next generation of public health leaders to handle the intricate problems at the heart of public health today.

Three single keywords: integrative workshops, public health curriculum, knowledge synthesis
Title:
How do medical clerks successfully integrate into clinical teaching teams? A scoping review of the literature

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Research ~ Background/Purpose OR
Educational Innovation ~ Context/Setting:
As medical institutions shift towards Competency Based Education, more effort is being directed towards understanding how health teams' function competently. While many have studied the competencies required to be a successful clerk, few have examined this question within the context of team function and integration. Our primary objective is to identify how medical clerks successfully integrate and contribute to clinical teaching teams.

Research ~ Methods OR
Educational Innovation ~ Intervention:
A scoping review of the literature was performed using the Ovid MEDLINE database. Data were extracted and thematically analysed in accordance with Arksey and O'Malley's (2005) approach to descriptive analysis.

Research ~ Results OR
Educational Innovation ~ Observations:
Out of the 1368 papers returned by our search, 34 were included for full text review. Seven main themes were identified by our research: (1) Communication (2) Taking responsibility and appropriate autonomy (3) Humility and knowing when to ask for help (4) Identity as a Team Member (5) Self efficacy (6) Rapport and Relationship building (7) Patient Advocacy

Research ~ Conclusions OR
Educational Innovation ~ Discussion:
Communication through documentation and case presentation are central to a clerk’s performance on the health team. Second, the development of a professional identity in the team is important, and is closely tied with a clerk’s humility, their ability to form relationships with the rest of the team and collaborate with other health professionals. Third, there may be a role for clerks to act as patient advocates, however, the nature of this role within the context of the health team is still poorly understood.

Three single keywords: clerkship, team, behaviours
The Role of Character in Physician Leadership

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Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
Physician leadership is multi-facetted, but leadership training in medicine is not. Leadership training for physicians is rarely grounded in conceptual leadership frameworks and suffer from a primary focus on cognitive leadership domains. Character-based leadership moves beyond cognitive competencies and articulates dimensions of character that promote effective leadership. The purpose of this study was to explore character-based leadership in the medical context.

Research ~ Methods OR Educational Innovation ~ Intervention:
This qualitative descriptive study used semi-structured interviews to explore health care professionals’ perceptions of character in relation to effective leadership in medicine. All interviews were audio-recorded and transcribed. Consistent with descriptive qualitative inquiry, a qualitative latent content analysis was used. A constant comparative approach incorporating character-based leadership as a sensitizing concept was used to code and categorize transcriptions until sufficiency was reached.

Research ~ Results OR Educational Innovation ~ Observations:
Twenty-six health care professionals participated. Character was deemed essential for effective physician leadership. Participants reflected on different dimensions they attributed to an effective physician leader, including collaboration, humility, and humanity. Participants shared examples working in interdisciplinary healthcare teams to illustrate these in practice. Moreover, effective leadership was not dependent on positional leadership roles. Rather members of the interprofessional healthcare team who demonstrate character stand out as leaders regardless of their position or career stage.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
Our findings highlight two conceptual shifts for leadership in medicine. The first is expanding traditional cognitive leadership competencies to include character attributes, and the second is a shift from positional to dispositional leadership. These findings provide important insights into character-based leadership in medicine and help lay the foundation for more robust leadership education and training.

Three single keywords: leadership, character, medicine
Title:
Distinguishing supportive and collaborative interdependence to better understand individuals’ contributions to the healthcare team

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Research ~ Background/Purpose OR
Educational Innovation ~ Context/Setting:
Collaboration is well-recognized as a central feature of effective patient care, but assessments focus on either the group or the individual, which fails to capture the interdependence between the two.¹ This work aims to provide a robust conceptualization of interdependence to support assessment and feedback for trainees in clinical environments.

Research ~ Methods OR
Educational Innovation ~ Intervention:
Using constructivist grounded theory, we interviewed 49 participants from Emergency Medicine and Pediatrics in Canada and the US, purposively sampling interprofessional healthcare team members (i.e., faculty, residents, allied health professionals, and patients/parents). Iterative data collection and analysis supported theoretical sampling.

Research ~ Results OR
Educational Innovation ~ Observations:
Results suggested two types of interdependence: supportive and collaborative. Supportive interdependence was triggered by a lack of expertise and often described in relation to trainee encounters. Supportive interdependence was not unique to trainees; expert team members also encountered new knowledge or tasks that required supportive interdependence. Collaborative interdependence was triggered by recognition that patient care entails resources outside a single individual’s scope of practice. Participants could distinguish between these types of interdependence, although faculty reflected that it can be difficult to discern when trainee performances are independent or interdependent.

Research ~ Conclusions OR
Educational Innovation ~ Discussion:
Trainees do not necessarily graduate from interdependence to independence as they gain expertise. Instead, trainees and other team members cycle in and out of interdependence, depending on the needs of the situation. This refined conceptualization has implications for measurement, particularly the need for multidimensional approaches to capture the situational complexity of interdependent performances, characterize the nonlinear relationship between independent and interdependence, and identify whether interdependence is supportive or collaborative.

Three single keywords: teamwork, assessment, collaboration
Title: ‘For the most part it works’: Exploring how authors navigate peer review feedback

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Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
Peer review aims to provide meaningful feedback to research authors so they may improve their work, yet it constitutes a particularly challenging context for the exchange of feedback. We explore how research authors navigate the process of interpreting and responding to peer review feedback, in order to elaborate how feedback functions when some of the conditions thought to be necessary for it to be effective are not met.

Research ~ Methods OR Educational Innovation ~ Intervention:
Using constructivist grounded theory methodology, we interviewed 17 recently-published health professions education researchers about their experiences with the peer review process. Data collection and analysis were concurrent and iterative. We used constant comparison to identify themes and to develop a conceptual model of how feedback functions in this setting.

Research ~ Results OR Educational Innovation ~ Observations:
While participants expressed faith in peer review, they acknowledged that the process was emotionally trying, and raised concerns about its consistency and credibility. These potential threats were mitigated by factors including time, team support, experience, and the exercise of autonomy. Additionally, the perceived engagement of reviewers and the cultural norms and expectations surrounding the process strengthened authors' willingness and capacity to respond productively.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
Feedback is a balancing act. Although threats to the productive uptake of peer review feedback abound, these threats may be neutralized by a range of countermeasures. Among these, opportunities for autonomy and cultural normalization of both the professional responsibility to engage with feedback and the challenge of doing so may be especially influential and may have implications beyond the peer review setting.

Three single keywords: feedback, peer, review
Title:
Artificial intelligence as a teammate: A critical interpretive synthesis of artificial intelligence-human teamwork literature

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Research ~ Background/Purpose OR Educational Innovation ~ Context/Setting:
There is growing interest in integrating artificial intelligence (AI) into healthcare to improve patient outcomes, enhance diagnostic accuracy and reduce healthcare costs. As AI begins to work with healthcare practitioners in a team, it is important to more clearly understand the features that will influence human-AI teamwork.

Research ~ Methods OR Educational Innovation ~ Intervention:
A Critical Interpretive Synthesis review was conducted of the Web of Science and Scopus databases. Articles were included if they explored any aspect of human-AI teamwork, including challenges, benefits and team dynamics.

Research ~ Results OR Educational Innovation ~ Observations:
There was a lack of standardized terminology for AI, with the term taking on a range of meanings and being referenced as “agent” and other terms. Human-AI teamwork was understood in a variety of ways and seemed to exist on a spectrum. Four core themes emerged through the analysis: AI as teammate vs. tool, key teaming components/competencies of human-AI teams, the benefits of human-AI teamwork and challenges associated with human-AI teamwork.

Research ~ Conclusions OR Educational Innovation ~ Discussion:
There is a diverse range of literature on the state of human-AI teamwork and how this type of teamwork may evolve as technologies advance. Some implications of this review for healthcare are the following: teamwork protocols are important to guide the interactions between AI and humans; trust must be appropriately calibrated; and AI design considerations may need to address explainability and autonomy.

Three single keywords: artificial intelligence, teamwork, AI-human teamwork
Thank you for attending your feedback is appreciated.

Participant Survey