Leadership and Change in Residency Training:  
A Call to Action

Le leadership et le changement dans la formation des résidents : un appel à l’action
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2017 International Conference on Residency Education / La Conférence internationale sur la formation des résidents 2017

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Integrating the CanMEDS Framework into a clinical ethics fellowship program

G. R. Scofield¹, J. Maniate², M. Szego³, D. Langlois³

¹University of Toronto, Toronto, ON; ²St. Joseph’s Health Centre, Toronto, ON; ³Centre for Clinical Ethics, Toronto, ON

Most hospitals have a clinical ethics consultation service. However, because individuals conducting clinical ethics consultations have a variety of backgrounds, robust clinical ethics training must be developed to ensure consistent, quality service. The Centre for Clinical Ethics offers a one-year experiential fellowship program and provides training in all aspects of healthcare ethics – clinical, research, and organizational ethics – to individuals who have a background in ethics at the Masters or Doctoral level.

In this presentation we will describe how we used the CanMEDS Physician Competency Framework to create a series of 18 modules to train and evaluate clinical ethics fellows. Each module involves didactic and practical components and is administered over a calendar year as fellows rotate through different hospital settings (e.g., acute care, long-term care, and rehabilitation hospitals). The modules were created to ensure our learners develop the competencies identified by both the American Society of Bioethics and the Humanities in its Core Competencies and its Improving Core Competencies in Clinical Ethics Consultation and the Catholic Health Association of the United States of America in its Striving for Excellence in Ethics. Particular attention will be focused on how training in ethics can be related to each of the competencies described in CanMEDS. To our knowledge, this is the first instance of the CanMEDS Framework being used in the domain of clinical ethics.

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Australian orthopaedic surgical education and training: Overall program architecture and journey of transformational change

I. W. Incoll¹, A. R. Cosenza¹, J. R. Frank², J. Atkin¹, A. Keane¹, M. Van Biljon¹

¹Australian Orthopaedic Association, Sydney, Australia; ²Royal College of Physicians and Surgeons of Canada, Ottawa, ON

Introduction

From 2012-2013, the Australian Orthopaedic Association (AOA) undertook a global strategic review of our education and training program in order to ensure that the AOA trains to a modern, best practice educational model. The final phase of the strategic review produced a comprehensive two-stage eight year roadmap of activities to address identified challenges.

Methods

Since the launch of the AOA 21 project in early 2014 a streamlined competency-based curriculum which articulates the key abilities of an orthopaedic surgeon on his or her first day of specialist practice has been prepared and implemented; stages of training clearly defined by assessment requirements for progression developed; unique workplace-based assessment tools designed; a Training App created and implemented which facilitates the documentation of every-day trainee performance in the clinical setting; and an e-Portfolio developed to collate data of multiple feedback, assessment, eLog and review entries.

Conclusion

The move from an apprentice-style training program towards competency-based training has been a stepwise process. Change management has been critical, as has a core project team throughout the development phase. Communicating the revised approach to the wider specialty group has been challenging. Incremental policy change over the last two years has been required to prepare for the implementation of the revised education and training program in 2018.
Introduction
Key challenges facing Australian orthopaedic surgery training highlighted by a strategic education review included the prominent gap between the designed vs. implemented curriculum, the subjective nature of in-training assessment and limited observation and feedback trainees obtain from supervisors.

Method
Four workplace based assessment (WBA) forms have been uniquely designed as one element of a programmatic approach to assessment. They are tightly aligned to the revised curriculum; have a global scale to record an expert judgement of overall performance prior to consideration of individual elements of an encounter; abandon numerical rating scales for individual items to focus on qualitative feedback; and include a plan to action suggestions. A program of WBAs has also been developed toward module entrustment/sign off.

Results
The global scale, which focuses on provision of effective patient care, was perceived to be a good holistic measure of the trainee’s performance. Incorporating mandatory assessment was required to ensure trainee participation and submission. In the last quarter 2016, all registered trainees completed WBAs (n=222). Data demonstrated that assessors are more comfortable with using full range of the global scale on surgical skills assessment, however leniency bias and halo effect is noted for observations outside of theatre and individual items on the forms.

Conclusions
Extensive engagement with all involved in training, including an appreciation of the rationale behind the revised approach to assessment, is required to achieve successful implementation. The concept of providing effective patient care without supervision, and comparison to a consultant level of practice, needs continual reinforcement.

Have you got a minute? Literally.
The Australian Orthopaedic Association (AOA) training app

I. W. Incoll, O. Khorshid, J. Atkin, E. Burrell, M. Van Biljona
Australian Orthopaedic Association, Sydney, Australia

Introduction
Research indicates that clinical supervisors believe they provide enough feedback, however trainees disagree. The AOA Training App was originally developed to bridge this gap and provide a prompt for more frequent feedback conversations. During the development, we added workplace based assessment forms and a surgical logbook to allow convenient submission of feedback entries, assessment and learning in theatre via mobile devices.

Methods
The AOA Training App was designed in 2016 and implemented this year. The App provides the facility for both AOA consultants and trainees to initiate feedback entries – they simply: select the context; identify the CanMEDS role the feedback pertains to; indicate an overall rating; describe what was done well or could be improved; and provide further suggestions for action or advice. In less than a minute.

The AOA Training App links with our ePortfolio, which aggregates the data, providing a summary report of all feedback entries for consideration at review meetings. Additional features include the facility to flag a feedback entry for discussion; to log feedback from a third party; and for trainees to reflect on feedback and document next steps.

Conclusion
The AOA Training App has transformed feedback in the orthopaedic surgery training program. Trainees and clinical supervisors are engaging in more feedback conversations and documenting them. Closing the feedback loop is a priority and following up on action plans is a focus of regular reviews. Next steps include trainees providing feedback on supervisors and their peers.
Using the flipped classroom model to teach a procedural skill: The bone marrow aspiration and trephine biopsy experience at the University of Alberta

K. Wong
University of Alberta, Edmonton, AB

Introduction
Hematology and Pathology residents have variable experience performing bone marrow aspirations and trephine biopsies (BMAT) at the start of training. The traditional “see one, do one, teach one” model is suboptimal for achieving this competency. To address this gap, a novel BMAT teaching session was recently introduced into our 2016 academic half-day program.

Method
12 residents participated in the session. 4 had no prior exposure to BMAT; 8 had prior experience. Prior to the session, all residents reviewed a BMAT video from the New England Journal of Medicine (NEJM). The four inexperienced residents were asked to obtain additional BMAT resources from the literature/Internet for group discussion, while the eight experienced learners were asked to compare the NEJM video to local practice.

During the teaching session, residents used a pelvis model and task trainer to practice proper landmarking and technique. The inexperienced resident group shared the resources they procured for discussion, including a journal article on strategies to minimize patient discomfort and an article on ultrasound-guided BMAT. The experienced resident group provided insightful comparisons between the NEJM video and local BMAT procedure, sparking discussion on potential quality improvement issues. The residents and staff physician also reflected on and shared their own BMAT experiences, trouble-shooting tips and general pearls of wisdom.

Conclusion
We created a novel BMAT teaching session utilizing the flipped classroom, active learning techniques, collaborative discussion, storytelling and peer-to-peer teaching. This strategy for teaching procedural skills may be suitable for and benefit other residency programs.

An introductory bootcamp curriculum for hematology and pathology residents at the University of Alberta

K. Wong
University of Alberta, Edmonton, AB

Introduction
Traditionally, Hematology and Pathology residents at the University of Alberta participate in a Joint Academic Program annually, from September to June. To address the gap in formal learning opportunities during the summer months for new and returning residents, a bootcamp style Introduction to Laboratory Hematology curriculum was established in July 2015 and further revised this past year.

Methods
There were 9 summer sessions in 2015 and 13 sessions in 2016. Evaluations from 2015 showed that the residents wanted more case studies to enhance relevance and applicability to clinical and laboratory hematology practice. Subsequently, all 2016 sessions utilized case-based learning to promote near peer teaching and learning, followed by facilitated discussions with content experts to clarify and consolidate concepts. The curriculum was also integrated onto our university’s Moodle electronic learning management system platform. Residents evaluated the current curricular content and teaching methods using a 5-point Likert questionnaire and free text comments.

16 residents participated across both iterations of the curriculum: 9 in pathology and 7 in hematology. Evaluations from 2016 showed participants found the content useful (4.6), the learning environment active and engaging (4.5), and the sessions relevant and applicable to clinical and laboratory hematology practice (4.3). Narrative feedback indicated uniform appreciation for the flexibility and ease of access to the curriculum on our Moodle site.

Conclusion
A new Introduction to Laboratory Hematology curriculum has been established at the University of Alberta utilizing flipped classroom and case-based learning techniques. Preliminary results indicate that it was very well received.
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**Simulation-based boot camp for internal medicine residents: Is it well received, and does it improve self-confidence?**

**K. D. Mulchey, L. Rourke, A. Amin, A. Sonpar, A. Gupta, V. Daniels, C. Goldstein, D. Rolfson**

University of Alberta, Edmonton, AB

**Introduction**

The impending implementation of Competency By Design in July 2017 has prompted Canadian residency programs to consider different methods of knowledge and skill acquisition. Simulation-based training will play a central role in this shift to a competency-based learning framework, but the ideal format of simulation curriculum delivery is in development. Our study describes a simulation-based boot camp developed by the University of Alberta Internal Medicine residency program, and presents the data evaluating the boot camp. The aim was to determine which aspects were recognized as valuable.

**Method**

The objectives for the boot camp were based on the draft Entrustable Professional Activities for Canadian Internal Medicine residents. All PGY-1 residents (n=32) in the Transition To Discipline stage participated in 6 skills stations utilizing task trainers following the Gagne instructional model, 3 instruction-only skills stations, and 2 theatre-based high fidelity simulation scenarios. Prior to the boot camp we collected data on learners’ experiences with these skills (either simulated or patient-based). Using post-station questionnaires, we assessed the impact of the training on learners’ satisfaction and self-confidence.

**Conclusion**

A strong majority of learners were satisfied with the boot camp. Most learners felt more comfortable with their procedural skills following the hands-on training sessions, but felt the instruction-only stations had little impact. Nearly all learners felt the theatre-based simulation scenarios improved their confidence to face urgent clinical situations while on call. These findings will shape future iterations of boot camp as we continually strive to improve our curriculum.

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**A review of teacher assessments strategies: Innovations and challenges**

**L. Murgaski, J. Puddicombe, J. Montgomery, K. O’Hear, L. Probyn**

University of Toronto, Toronto, ON

**Background**

Assessment of faculty is an important accreditation requirement in residency education. Maintaining resident anonymity while providing teachers with regular feedback can be a delicate balance to manage, especially in small programs.

**Methods**

In this study we reviewed data collected from the internal reviews of 70 residency training programs at the University of Toronto. Documentation reviewed included pre-survey questionnaires, internal review reports and Internal Review Committee recommendation letters. In addition, interviews were held with select program directors based on the information obtained from the document review process. Qualitative methods were used to discover the common strengths, difficulties and approaches implemented across programs to improve teacher assessment and feedback. A search of the literature was also conducted to identify relevant/applicable strategies that have been employed in other health professions’ education programs.

**Results**

Within University of Toronto, common barriers to effective teacher evaluation were identified as: completion of assessments for all teachers on each rotation (n=6), providing feedback on clinical teaching (n=5), lack of Residency Program Committee oversight in the process (n=5) and maintaining resident anonymity (n=3). Five instances were identified in which small programs have been able to provide regular and meaningful feedback to their teaching faculty while maintaining resident anonymity. The principles of these five instances have been analyzed to provide useful strategies that are applicable for other programs.

**Conclusion**

A review of programs’ teacher assessment strategies identified concerns and highlighted innovative systems that can be adapted to improve assessment of and feedback received by faculty.
A novel block ambulatory rotation for third-year residents in internal medicine

L. Melvin1, R. Shah1, D. W. Frost2, R. Cavalcanti1, T. E. MacMillan1
1University of Toronto, Toronto, ON; 2University Health Network, Toronto, ON

Introduction
Ambulatory medicine poses challenges for internal medicine training programs across Canada. Issues include limited exposure to ambulatory medicine, inconsistent resident attendance, and lack of continuity, especially when ambulatory experiences are scheduled concurrently with inpatient rotations. These challenges often lead to inadequate coverage of learning objectives and incomplete achievement of needed competencies.

Method
We designed a block ambulatory experience for third-year residents in internal medicine at Toronto Western Hospital, University of Toronto. Key design elements included: a) 9 half-day clinics per week in 2-week blocks over 2 months with broad exposure to ambulatory internal medicine including rapid referral, post-discharge, and hypertension clinics; b) an Entrustable Professional Activity (EPA) based curriculum derived from broad consultation with experts in education and ambulatory medicine; c) interactive case-based teaching curriculum with ambulatory-specific scenarios; and d) supervision by a single physician to enable cognitive apprenticeship and foster experiential learning. Evaluation was with structured anonymous surveys (SurveyGizmo).

Implications
6 of 6 trainees (100%) who had completed the new ambulatory rotation responded to the survey. All respondents agreed that the rotation facilitated development of a unique skillset in ambulatory internal medicine, fostered a close relationship with the clinic supervisor and that scenario-based teaching reinforced stated EPAs. Respondents’ narrative feedback emphasized the different competencies required for ambulatory care compared to inpatient medicine, and highlighted that this rotation facilitated identification and fulfillment of this gap in training. Residents commented that the block format provided an immersive experience compared to longitudinal clinic, and enhanced continuity and feedback about management decisions.

Teaching trials through art: A novel educational method

A. Lefkowitz
University of Toronto, Toronto, ON

Introduction
Art is increasingly used in medical education to teach non-Medical Expert CanMEDS roles, but its use in teaching Medical Expert competencies is more limited. Art has been noted to act as a memory catalyst. It promotes recall by presenting sensory stimuli, linking to fun experiences, and creating new connections through the impetus for creative thought. Familiarity with the medical literature is crucial to practicing evidence-based medicine, and while art is used to teach anatomy to medical students, it has not hitherto been used to teach medical trials.

Method
A novel teaching series entitled “Trials Through Art” was designed and serially delivered to residents and medical students rotating through the General Internal Medicine service. Participants were split up into groups of 3-4 and given a pivotal trial with a distinctive acronym to read and understand, such as HOPE, TORCH, or RACE. Participants used arts supplies to make a visual mnemonic device depicting their trial. Each group presented their trial and accompanying visual aid to the other participants. One representative example of a visual aid depicted the ALLHAT trial, where antihypertensive medications were illustrated as characters wearing hats of different heights depending on efficacy and favorable outcome. Qualitative and quantitative anonymous feedback was elicited from participants at the end of each session.

Conclusion
Participants rated the sessions very highly, particularly in stimulating enthusiasm for the material. This innovative session may be adaptable across different specialty training programs, and useful as a model for the creation of new arts-based education initiatives.
A case-based approach to hemmodialysis and vascular access improves knowledge retention in nephrology trainees

A. Kaushal1, D. Noone1, J. Schiff2, R. Parekh2, A. Zahirieh1
University of Toronto, Toronto, ON; University Health Network, Toronto, ON

Introduction
Proficiency in hemodialysis (HD) and vascular access are fundamental components of nephrology training. With the shift towards competency by design (CBD), programs must incorporate competency frameworks without compromising efficiency. Our objective was to demonstrate the effectiveness of a case-based Dialysis Workshop (CBDW) in delivering HD content, and explore its effect on future learning.

Methods
Four 45-minute case-based stations on HD and vascular access were developed and delivered as a CBDW early in the academic year, immediately prior to established dialysis lecture series, to adult and paediatric nephrology trainees of Canadian and international background. Pre- and post-tests were administered before and after the workshop. Retention tests were administered eight weeks later, after the lecture series concluded. Tests targeted key concepts for each station using multiple choice items. Data for participants who attended both learning activities and completed all tests were analyzed using ANOVA.

Results
Thirty participants completed pre/post testing, and 16 submitted the retention test. Mean scores for pre-, post-, and retention tests were 58.1% (SD=11.2%), 67.9% (SD=13.2%), and 81.3% (SD=15.2%), respectively. Analysis demonstrated significant effects on performance after the workshop (p<0.0001) and after the lectures (p=0.007). The mean retention test score for 3 students who attended neither event and 2 students who attended lectures only, was 58.2% (SD=16.6%).

Conclusion
A CBDW is an effective instructional strategy, and aligns with the CBD model. The workshop may also prime trainees for future learning activities such as lectures. Further investigation is required to determine the optimal balance between these instructional approaches.
Resident leadership teams: Creating change within a residency program

M. Phung, D. Taylor
Queen's University, Kingston, ON

Introduction
During training, residents assume a variety of roles including learner, clinician, and teacher. Serving at the frontline, they gain a firsthand understanding of what works and what needs improving. Despite this, residents face a number of logistical and administrative barriers in exacting change within their educational institution. Our internal medicine program created Resident Leadership Teams (RLTs) to provide formal opportunities for residents to implement change within their program and to develop personal leadership skills.

Methods
Five distinct RLTs were created to empower residents to lead change initiatives within our program in these key areas: Resident Wellness, Academic Half-Day, Research, Rotation Orientation, and Transition to Discipline. Participation was voluntary to ensure the quality and enthusiasm of engagement; teams recruited representatives from each year of core internal medicine residency. Teams were given independence to conduct a needs assessment, create goals and objectives, and outline an implementation strategy. Faculty advisors for each team provided guidance throughout the development and implementation, and served to assist with administrative responsibilities. Evaluation for implemented programs and changes of each RLT is ongoing.

Conclusions
With introduction of RLTs, our program has been able to provide a formalized medium through which residents can execute improvements to their curriculum, and overall experience. As programs across the country move towards competency-based medical education, residents are in the best position to respond to changes by being directly involved with the evolution of their program and taking on leadership roles during this process.

The CanadiEM Digital Scholars Program: An innovative international digital collaboration curriculum

F. Zaver1, A. Thomas2, S. Syed3, A. Helman4, E. Kwok5, B. Thoma6, T. Chan6
1University of Calgary, Calgary, AB; 2University of British Columbia, Vancouver, BC; 3University of Ottawa, Ottawa, ON; 4Emergency Medicine Cases Podcast, Toronto, ON; 5University of Saskatchewan, Saskatoon, SK; 6McMaster University, Hamilton, ON

Introduction
Digital media are a new frontier in medical education scholarship. Asynchronous education resources facilitate a multi-modal approach to teaching, and allows residents to personalize their learning. The CanadiEM Digital Scholars Program is a nationwide initiative that provides residents with practical experiences in creating educational materials under the supervision of experts in the field. The program allows for collaboration and access to mentorship from top digital educators from across North America.

Methods
Interested residents accepted into the program spent a period of their PGY4 year completing modules developed in the theory and science behind digital education. Four modules, developed in an iterative process, have been built on the topics of podcasting, blogging, digital identity, and patient communication. Each fellow was supervised by members of the CanadiEM team, a faculty member from the resident’s home institution, and digital experts from across North America.

Curriculum
The first fellow completed all aspects of the designed curriculum. Above this, he also engaged in blog content creation, initiated research on digital scholarship, and managed the editorial section of CanadiEM. The second fellow is currently halfway through the scholarship and has already co-authored 30 blog posts and 53 podcasts in 6 months.

Conclusion
The CanadiEM Digital Scholars Program utilizes a novel approach to foster development of digital educators utilizing experts across North America. We have demonstrated the feasibility and sustainability with our initial pilot years. This program is being scaled next year to include two scholars per year, which will facilitate cross-collaboration between the scholars.
Engaging departmental stakeholders in shaping their program of assessment

S. Baxter, L. A. McEwen, N. Dalgarno, M. Reid, H. Braund
Queen's University, Kingston, ON

Introduction/Objective
Canada is adopting a competence-based medical education (CBME) model in residency education. The Royal College of Physicians and Surgeons of Canada has advocated for a programmatic approach to assessment with increased emphasis on direct observation of residents' clinical performance. This change has significant implications for frontline physicians' and residents' workflow. Supporting and incorporating feedback from these stakeholder groups as they pilot test CBME assessment tools is one strategy to actively engage them in shaping their program of assessment. According to the change literature, fostering grassroots involvement can improve stakeholder buy-in. The purpose of this research was to involve stakeholders in the selection and modification of workplace-based assessment (WBA) tools for use in Ophthalmology and potentially enhance subsequent engagement.

Method
A systematic approach to the pilot testing of workplace-based assessment (WBA) tools was adopted. Four WBA tools were introduced in an Ophthalmology emergency eye clinic context over a period of three months. Attending physicians were encouraged to document perceptions of the tools for this particular clinical context and provide recommendations regarding alternative uses directly on the tools. Separate resident and faculty focus groups were conducted to collect data about the usability, feasibility, and value of these WBA tools.

Conclusion
Change can be unsettling. Strategies that actively involve stakeholders in the change process may improve buy-in by fostering feelings of ownership. Such strategies also serve to harness the insights of physicians and residents working across different clinical environments to identify WBA tools that best address the needs throughout diverse contexts.

Operationalizing programmatic assessment: Practice-focused guidelines with descriptions of stakeholder activities

L. McEwen1, S. Chamberlain1, E. Constantin2, D. Dagnone1, V. Dory2, S. Fostaty Young1, C. Gomez-Garibello2, U. Luhanga3, J. V. Rich1
1Queen's University, Kingston, ON; 2McGill University, Montreal, QC; 3Emory University, Atlanta, GA

Introduction
Validated frameworks to inform the development and evaluation of competency-based programmatic assessment (PA) exist, but are of limited utility to assessment systems users. Given the Royal College's push for national adoption of PA, support for users is warranted. Our aim is to construct a practice-focused framework to guide implementation of PA by various stakeholder groups and pilot the framework in multiple programs across two institutions to assess acceptability, utility, and applicability in practice.

Method
Using a four-phase study design, data collection and analyses will be ongoing, emergent results will be used to inform subsequent phases. In Phase 1, a draft PA practice-focused framework was developed based on principles derived from the literature and iteratively refined by a panel of experts including physicians from multiple specialties and PhDs in education. In Phase 2, focus groups were conducted with stakeholders (i.e., residents, faculty, program leaders) to refine descriptions of stakeholder activities to better reflect the operationalization of PA principles in practice. Phase 3 will involve a formal external expert review process using a modified Delphi technique. Phase 4 will use a multiple case-study approach to explore how the framework impacts practice across postgraduate programs and institutions.

Conclusions
Findings from phases 1 & 2 suggest the framework supports knowledge translation (KT) for PA users. Phases 3&4 are ongoing. Our study will provide much needed information on how the framework impacts practice. We envision the framework serving as a KT to support initial implementation of competency-based PA and refinements of PA over time.
From theory to practice: Operationalizing curriculum mapping in CBME

B. Rotenberg, J. Binnendyk
Western University, London, ON

Introduction
Current literature on curriculum mapping provides theoretical underpinnings but little that can pragmatically assist a residency program in the evolution from traditional rotations and objectives to competency-based medical education (CBME). Within this gap there is an opportunity to consider curriculum mapping software as a stand-alone product that allows residency programs to make immediate progress in their move toward CBME.

Method
After researching available options, we began work with Curriculum Trak, a curriculum mapping software company traditionally focused on K-12 education. Choosing this small organization served two primary benefits: software customization and surprising affordability. Using CBME stages of training as the foundation, existing rotations were mapped to corresponding required training experiences (RTEs) within which learners could achieve the determined milestones and associated EPAs. RTEs were also mapped to key and enabling competencies and their corresponding CanMEDS role.

Conclusion
With Curriculum Trak, we can navigate between milestones/EPAs and competencies/CanMEDS roles, creating both global and rotation-specific reports. We can also visualize how RTEs are connected to both frameworks. The software can reveal areas of alignment and possible misalignment between desired and existing educational environments while creating transparency for educational administrators, teachers, accreditors, and most importantly, learners. Close scrutiny of training experiences, milestones, and competencies but also expansive observation of the curriculum as a whole permits appreciation of the overarching frameworks that knit together CBME. Although no single strategy will likely solve all administrative issues related to CBME, taking this novel step has substantially simplified the process.

A system of assessment for diagnostic radiology: Adaptations for Competence by Design

P. JA. Kennedy, C. Fong, H. Kaka, S. Athreya, S. Y. Lee, D. Landry, K. Finlay, S. Monteiro
McMaster University, Hamilton, ON

Introduction
Residency programs are challenged to provide timely feedback and assessment of residents. With Competence by Design (CBD), programs will be further challenged to develop and implement effective assessment tools for determining critical resident skills and behaviours. The purpose of this study is to describe a new system of assessment for radiology resident performance within a CanMEDS framework, contributing to program transition to CBD.

Method
Based on a formal needs assessment performed by a committee of program stakeholders and education experts, four targets for improved assessment were identified: radiology reports, verbal clinical case presentations, procedural and peri-procedural skills, and self-assessment. A Real-time Assessment Tool for Evaluation in Radiology (RATER) was developed for each of these, combined into a multi-method assessment suite. Item generation was based on a literature search and interviews with key informants, with committee consensus obtained using the Delphi technique. Following pilot testing of the Report RATER at one teaching site, improved variation in scores between residents was noted (compared to ITERs) on competencies related to professionalism, collaboration, and communication.

Conclusion/Implications
Results from initial piloting of the RATER suite suggests integration of these tools into program curriculum may lead to the following improvements: identification of both subjective and objective measures of competence, resident assessment by multiple methods and multiple assessors, and incorporation of valid assessment into both program decision-making and resident learning. Additional pilot testing of the RATER suite and dissemination to all teaching sites will allow for ongoing data collection to improve validity and reliability.
Z-scoring to increase fairness in the CaRMS file review process

A. Pardhan, K. Van Diepen
McMaster University, Hamilton, ON

Introduction
Emergency Medicine has become an increasingly popular Residency Training Program. Historically, each CaRMS application file would be reviewed in entirety by both a resident and faculty reviewer and scored using a standard rubric. As the number of applicants increased, this process became impossible to complete with the same number of raters. A new, standardized method of file review was needed.

To that end, the applicant files were broken into three components (Curriculum Vitae, Letters of Reference, Statement of Interest) with each component reviewed by one faculty member and one resident. This led to another foreseeable challenge of standardization. Despite a comprehensive rubric to help people score candidates, there were still significant discrepancies between different reviewers. For example, some reviewers would have an average score of 30/-15 for a section, and another 60/-15 for the same files.

Method
To help standardize scores and to ensure that candidates were not unfairly penalized or advantaged by inter-rater variability, Z-Scores and percentiles were used to determine where each candidate ranked in relation to one another. The weighted percentile averages of the different sections were then used to determine which candidates what candidates should be granted an interviewed based on a cut-off score. This enabled correction for the inter-rater variability, giving a truer relative ranking.

Conclusion
Implementing a multi-reviewer Z-score file ranking system helped to determine an interview rank list.

Developing a clinician educator AFC diploma program: The McMaster experience

K. Finlay, J. Sherbino
McMaster University, Hamilton, ON

Introduction
The need for improved medical education design and delivery is constantly expanding. Clinician Educators are physicians with formal training in medical education who provide consultative advice and guidance for medical training programs. The Clinician Educator (CE) program is an Area of Focused Competency (AFC) Diploma approved by the Royal College. We describe our experience designing and launching the first accredited CE AFC program in Canada.

Methods
McMaster’s program is designed around mandatory units: foundations, curriculum, teaching and learning and assessment. Selectives include: simulation, education scholarship and education leadership. Our local program design includes a model core curriculum, with mapping to available resources and courses at McMaster and beyond. Monthly program “Hot Topic” sessions are framed around small group discussion on key education topics. We have successfully recruited candidates from a variety of medical and surgical specialties at our centre, including 11 faculty and 4 senior residents. The CE program’s competency-based design is suitable for candidate participation concurrent with active medical practice.

Conclusion/Implication
The goal of the CE program is to train a competent and skilled Clinician Educator, capable of enhanced practice in this area of focused competence. Successful program completion includes acquisition of a working knowledge of the discipline, representing a valuable future educational resource for many programs. The CE Diploma offers expanded capacity for education leadership at our university, including junior and senior faculty, and select senior residents. The McMaster experience and program design is a framework example for the development of similar programs at other universities.
Making us strange: Including non-MD members in a clinical competency committee

T. M. Chan, M. Vanstone, A. Pardhan, K. Schiff, T. Vallera, J. Sherbino
McMaster University, Hamilton, ON

Background/Objectives
For effective implementation of competency-based medical education (CBME), clinical competency committees are required to rigorously judge aggregate assessment data of resident performance. The optimal make-up of such committees, however, has yet to be established.

Summary of Innovation
When developing the McMaster University Royal College Emergency Medicine program Clinical Competency Committee (CCC) terms of reference, we sought to include a number of stakeholders including: 1) staff physicians from both major teaching sites, 2) education leaders (Program Director, Assistant Program Director), 3) and elected resident representatives.

Mindful that rigorous group decision-making processes are inspired by qualitative or mixed method analytic traditions, we sought to ensure the robustness of our CCC procedures by finding a way to encourage our committee’s ability to engage in reflexivity about our decision-making processes and outcomes. To contribute to this aim, we invited a non-MD faculty member from the Faculty of Health Sciences at McMaster University to participate in our CCC. Similar to provincial regulatory bodies, who invite members of the lay-public to help monitor self-regulatory processes, we invited a non-MD faculty member to assist in identifying preconceptions and professional cultural biases. The role of this member is also to provide an outsider’s perspective (“make it strange”) via an explicit identification of tacit knowledge, customs, and assumptions that drive the CCC decision-making processes.

Conclusions
The participation of a non-MD faculty member on the CCC encourages clarity and accountability for judgments about resident performance and associated advancement in training, through the provision of an outside perspective.

The NOSM pediatric amazing race: An innovative vehicle for delivering the ‘social pediatric’ curriculum

T. Baron1, B. Linda1, C. Clayton1, C. Corbeil1, J. DellaVedova2, H. Writer3, B. Vanessa2, S. Bryab2, V. Dickinson1, H. Garland1, G. Michaud1, M. Speckert2
1Northern Ontario School of Medicine, Sudbury, ON; 2McMaster University, Hamilton, ON; 3University of Ottawa, Ottawa, ON

Introduction
The NOSM pediatric residency program created a ‘social pediatric curriculum’ to provide residents with knowledge and practical experience in health advocacy. The goal is to create pediatricians who not only understand but actively seek to change the inequalities that impact child health. This curriculum includes the NOSM ‘Pediatric Amazing Race’, a one day academic event designed to expose residents to the various social service agencies in Northern Ontario.

Method
All 12 residents travelled by public transportation carrying a simulated baby in a car seat to four social service agencies in a Northern Ontario community. The objectives were to describe the challenges associated with living with resource limitations in Northern Ontario and to explain the role of the various agencies. Residents visited the food bank, Sudbury housing, Ontario Works and a First Nations hub (provides activities and education for families). They completed a task designed to better understand each agency’s function. The residents navigated the bus schedule and were given a ‘road block’ which included questions related to the social services and a ‘detour’ in which they had to buy groceries to feed a family of four with $20 for two days.

Conclusion
Residents who completed the evaluation (73%) either agreed or strongly agreed that the experience was valuable and will impact their future practice. They identified a better understanding of the agencies available in northern Ontario and endorsed continuing this initiative. This innovation teaches the Health Advocate role and will develop pediatricians who effectively advocate for their patients.

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Off-loading the assessment burden: Are peers reliable assessors?
N. Wagner, M. Chan, N. Amin, R. Sonnadara
McMaster University, Hamilton, ON

Introduction
As training programs implement Competence by Design, there is concern that the assessment burden being asked of faculty will become unmanageable. The purpose of this study was to investigate whether some of this burden could be distributed to senior trainees. We examined the reliability of senior evaluations by comparing them with staff ratings of incoming trainee performance on select technical skills.

Methods
Thirty-two incoming first year residents, four senior residents, and five staff instructors from McMaster University participated in this study during our Surgical Foundations boot camp. During the boot camp’s technical skills sessions, both senior residents and staff completed formative assessments of trainee performance. While the primary purpose of the assessments was to provide incoming trainees with timely feedback, all scores were compared through an independent samples t-test.

Results
The results suggest there were no significant differences in the scores given by senior residents (mean = 78.52, SD = 8.84) and staff (mean = 74.0, SD = 13.84); T(60) =1.309 (p = 0.127).

Conclusion
Our data suggests that senior assessments give comparable results to faculty assessments on select technical skills. Therefore, we suggest faculty may be able to use more senior residents to help with assessment of junior trainees. As further work needs to be done to see whether these results vary by skill, and whether some skills are more suitable than others to be assessed by senior residents, a follow up study will be conducted in July 2017. Results from both studies will be presented.

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The need for change: A multidisciplinary programme to embed quality improvement in a hospital group
V. Collins¹, A. Seaton¹, K. Benstead²
¹Gloucestershire Safety and Quality Improvement Academy, Cheltenham, England; ²Gloucestershire National Health Service Foundation Trust, Cheltenham, England

Introduction
The CANMEDS leadership role requires residents to “apply the science of quality improvement to contribute to improving the systems of patient care.” A Safety and Quality Improvement Academy was established in June 2015 to develop and deliver courses for multiprofessional groups.

Methods
We developed a Quality Improvement Professional Development Pathway staged in 4 levels, from a Bronze Introductory to a Platinum Award for achievement. Each level from Bronze to Gold builds additional skills and knowledge. The bronze level course introduces our participants, who come from a wide range of professions, to quality improvement tools and methodologies. The silver level course begins with two days of training and workshop activities with the aim of developing teams and the initial stages of their improvement initiatives. Participants attend monthly sessions for support and to build on their QI knowledge. The 7 month course culminates in the participants presenting the results of their improvement work and qualifying as an Improvement Practitioner. 597 students have completed bronze level training this includes 156 doctors in training and 48 consultant doctors. 27 students have completed silver level training. They have undertaken 18 quality improvement project and these teams have included 15 doctors in training and 2 consultant doctors.

Conclusion
The Academy has increased the knowledge but has also provided students with the skills, the opportunity and the support to contribute to patient safety and to make practical improvements in the way we provide care in our hospitals.
GridlockED: A board-game based teaching tool for emergency medicine residents

D. Tsoy, J. Rempel, P. Sneath, M. Mercuri, A. Pardhan, T. M. Chan
McMaster University, Hamilton, ON

Introduction
The management of patient flow through the emergency department (ED) is crucial for the practice of emergency medicine (EM), but is difficult to teach during residency training. Simulation and serious games might provide opportunity for residents to learn this aspect of practice. Thus, we developed GridlockED: a serious board game that requires players to work cooperatively to manage a simulated ED to ‘win’ the game, developing their intrinsic CanMEDS skills (e.g. as Leaders, Collaborators, Communicators), as well as high level management skills.

Methods
Six months of iterative gameplay and review was used to develop GridlockED. Input from attending emergency physicians (for content validity), residents (fidelity), and medical students was integrated into the game through a Plan-Do-Study-Act (PDSA) model.

We created a strategy game that allows learners to engage in high level decision-making about ED flow processes. The goal of the game is to work cooperatively with teammates to complete patient tasks and move patients through the ED to an ultimate disposition (e.g. admission, discharge).

The final version of GridlockED includes all of the components necessary for gameplay, including a fully developed game board, game characters representing ED staff, patient cards, and win/loss conditions which have been finely tuned to allow for a challenge while maintaining engagement.

Conclusion
We developed a serious game through PDSA cycles that shows promise as a teaching tool. We plan to begin further research trials on GridlockED as a teaching tool.

Collaboration citoyenne : ce que les citoyens ont à en dire

J. Poitras, M. Bérubé
Université Laval, Québec, QC

Introduction
Pour actualiser leur devoir de responsabilité sociale, soit l’obligation de répondre aux besoins des communautés qu’elles servent, les facultés de médecine doivent connaître les besoins de santé de leur population.

Méthode
La Faculté a ouvert un dialogue avec les populations qu’elle sert en vue de déterminer les moyens les plus appropriés pour favoriser la collaboration citoyenne aux activités de la Faculté, et éclairer jusqu’à son fonctionnement.

Résultats
En 2016, la Faculté de médecine de l’Université Laval a organisé 9 forums citoyens dans 8 villes de son territoire avec l’Institut du nouveau monde, un organisme à but non lucratif visant à accroître la participation citoyenne à la vie sociale/politique. La très grande majorité des citoyens consultés a approuvé l’idée que la participation aux activités de la Faculté était pertinente, autant pour la formation que pour la recherche. Le rapport de cette consultation exprime les préférences des citoyens eut égard à un éventuel processus de collaboration citoyenne pérenne à la Faculté de médecine de l’Université Laval.

Discussion
Des forums de participation citoyenne sur le territoire d’une faculté peuvent permettre de recueillir auprès des populations servies leur intérêt à prendre part aux activités de leur faculté, de même qu’à contribuer à déterminer les meilleurs moyens pour le faire.

Conclusion
Dans un contexte sociopolitique marqué par la réduction des espaces de participation citoyenne, l’intérêt suscité rappelle que l’Université, en tant qu’institution de savoir, de débat et de liberté de pensée, pourrait jouer un rôle accru à cet égard.

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Citizen participation: What citizens have to say about it

J. Poitras, M. Bérubé
Université Laval, Québec, QC

Introduction
In order to keep abreast of changes in society affecting their duty of social responsibility, i.e. the obligation to meet the needs of the communities that they serve, faculties of medicine must know the health needs of their population.

Method
The Université Laval Faculty of Medicine has initiated a dialogue with the populations that it serves in order to determine the most appropriate ways and means of encouraging citizen participation in Faculty activities.

Results
In 2016, the Université Laval Faculty of Medicine, in conjunction with the Institut du nouveau monde, a not-for-profit organization that aims to increase citizen participation in social/political life, organized nine citizen forums in eight cities within the area served by the Faculty. The vast majority of those consulted agreed that participation in Faculty activities was relevant, for both training and research. The report on these consultations outlines the preferences expressed by members of the public concerning how such an ongoing citizen participation process at the Université Laval Faculty of Medicine should work.

Discussion
Citizen participation forums in the area served by a faculty can provide an opportunity to ascertain the level of interest among the population served in taking part in the activities of their faculty, as well as in contributing to determining the best ways of accomplishing this.

Conclusion
In a sociopolitical context marked by a reduction in opportunities for citizen participation, the interest generated by this initiative is a reminder that the university, as an institution of knowledge, debate and freedom of thought, could play a greater role in this regard.

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Développer le sens de la responsabilité sociale chez nos résidents, en contribuant à réduire la mortalité maternelle et infantile au Burkina Faso, à travers un carrefour innovant de formation commune en santé mondiale pour plusieurs programmes de spécialité.

J. Girard, Y. Bonnier Viger, C. Josette, J. Giard, J. Poitras
Université Laval, Québec, QC

Introduction
La Faculté de médecine de l’Université Laval (UL) a inscrit dans ses orientations stratégiques la responsabilité sociale, pour influencer la formation des futurs médecins face à leurs pratiques professionnelles, dans un environnement où les inégalités sociales de santé sont en nette progression au Canada. La santé mondiale représente l’un des leviers privilégiés articulant cette vision à travers un continuum de formation qui se développe maintenant jusqu’à la résidence en spécialité.

Méthode et description de l’innovation

Conclusion/Répercussions
Cette approche innovatrice est l’amorce d’une formation en santé mondiale avec l’acquisition de compétences ciblées essentielles à toute pratique médicale.

English on next page
Instilling a sense of social responsibility in our residents while helping to reduce maternal and infant mortality in Burkina Faso through an innovative joint training project in world health for several specialty programs

J. Girard, Y. Bonnier Viger, C. Josette, J. Giard, J. Poitras
Université Laval, Québec, QC

Introduction
The Université Laval Faculty of Medicine has made social responsibility one of its strategic goals in order to ensure that the training of future physicians addresses the issue of professional practices, in an environment where social inequalities in health are clearly on the rise in Canada. World health is one of the levers identified to articulate this vision through a training continuum that is being developed and extends up to residency in a specialty.

Method and description of the innovation
Four residency programs have joined forces to support the acquisition of crosscutting competencies in world health, which will contribute to enhancing the CanMEDS roles of our future practitioners. The residents will be involved through a development project in maternal, newborn and child health in Burkina Faso called PASME 2. Université Laval is a partner in this project, which is funded by Global Affairs Canada. The aim of the project is to provide better access to maternal, newborn and child health services, while enhancing the quality of these services, according to a continuum of care approach. The capacity building of health care personnel, community stakeholders and populations will support the learning model of residents in family medicine, in obstetrics and gynecology, in pediatrics as well as in public health and preventive medicine, thereby significantly contributing to the development of their expected professional roles. Our residents will be paired with residents in the host country, which will influence best practices, based on scientific and scholarly evidence.

Conclusion/Impacts
This innovative approach will provide an introduction to training in world health while fostering the acquisition of targeted competencies essential to any medical practice.

Un vice-décanat à la responsabilité sociale pour une faculté socialement responsable

J. Poitras, M. Bérubé
Université Laval, Québec, QC

Introduction
En 2015 le Conseil de la Faculté de médecine de l’Université Laval entérinait son plan stratégique. La responsabilité sociale y est identifiée comme une des quatre valeurs facultaires.

Méthode
Du même souffle naît un Vice-décanat à la responsabilité sociale, regroupant la Direction de la sécurité des patients et du professionnalisme, la Direction en santé mondiale, la Direction de l’enseignement en région, la Direction des affaires étudiantes, le Bureau de l’assistance aux professeurs et les enjeux de collaboration citoyenne et de santé/développement durable.

Résultats
La trame de fond de ces directions étant la responsabilité sociale, ce regroupement a permis de mettre en commun les objets de responsabilité sociale transversaux et pertinents à l’ensemble des vice-décanats et départements, ainsi que dynamiser leur développement par le partage des ressources et la mise en commun des projets, conformément aux orientations proposées par l’Avenir de l’éducation médicale.

Discussion
Une faculté socialement responsable produit des médecins socialement responsables, ie professionnels, ayant les compétences requises afin d’aborder les inéquités sociales notamment des populations vulnérables. La responsabilité sociale est au cœur des activités et préoccupations du Vice-décanat, rassemblant les forces vives animées par ce principe, encourageant les collaborations et réflexions communes, facilitant la reconnaissance de cet enjeu et livrant un message fort au réseau de formation et aux partenaires quant à l’importance que revêt celle-ci.

Conclusion
La création de ce Vice-décanat a permis de structurer autant l’organisation facultaire que la pensée des membres de la Faculté au regard de la responsabilité sociale.
Introduction
In 2015, the Université Laval Faculty of Medicine Council approved its strategic plan, in which social responsibility was identified as one of the four faculty values.

Method
At the same time, an Office of the Associate Dean for Social Responsibility was established, consolidating the Office of Patient Safety and Professionalism, the Office of World Health, the Office of Regional/Rural Education, the Office of Student Affairs, the Faculty Assistance Office and the issues of citizen participation and health/sustainable development.

Results
Since the common theme of these offices is social responsibility, this consolidation has made it possible to combine the cross-cutting social responsibility objectives relevant to all the associate dean offices and departments, and thus promote their development through the sharing of resources and joint projects, in accordance with the strategic goals proposed by the Future of Medical Education initiative.

Discussion
A socially responsible faculty produces socially responsible physicians, i.e. professionals who have the requisite competencies to address social inequalities, especially of vulnerable populations. Social responsibility is the key focus of the activities and concerns of the Office of the Associate Dean for Social Responsibility, which brings together stakeholders committed to this principle, while encouraging collaboration and discussion, facilitating recognition of this issue and delivering a strong message to the training network and partners concerning the importance of social responsibility.

Conclusion
The establishment of the Office of the Associate Dean for Social Responsibility has served to focus both the faculty organization and the thinking of the members of the Faculty on the theme of social responsibility.
Collège des médecins du Québec guide on the role and responsibilities of the learner and the supervisor in a clinical training site

L. Samson¹, Y. Gervais¹, J. Dubois¹, È. Gagné¹, K. Doyle², S. Bélanger¹, F. Caron¹, S. Keverian¹, J. Lalancette¹, M. Deschênes¹, A. MacLellan¹
¹Collège des médecins du Québec, Montréal, QC; ²McGill University Health Centre, Montréal, QC

Introduction
Medical education in Quebec is of very high quality and numerous reference documents which provide a framework for this training play a fundamental role. However, there are still some ambiguities in the perceptions of learners and supervisors concerning their respective roles and responsibilities. The purpose of this guide is to standardize the messages concerning the roles and responsibilities of learners and supervisors. Ensuring safety in patient care is the main concern. The objectives of this poster session are to familiarize participants with certain statements in the guide and help them think about how these statements can be applied in daily practice.

Method
The guide is based on the five main interactions of learners or supervisors with their environment, namely the patient, the training sites, the health care teams, the CMQ as well as the profession and discipline, and finally, themselves. For this poster session, certain statements were selected from among the 100 statements in the guide in order to familiarize participants with certain statements in the guide and help them think about how these statements can be applied in daily practice.

Conclusion
This guide is intended to be a succinct, easy-to-consult document that clearly defines the role and responsibilities of the learner and the supervisor. The statements in the guide reflect the main objective, which is to ensure compliance with the CMQ's mission, namely protection of the public through the provision of quality medical care.

Personal practice audit for faculty development in quality improvement

J. St. Onge, S. Keen, D. Cowan
McMaster University, Hamilton, ON

Introduction
Competing academic responsibilities often limit the time that faculty teachers can devote to quality improvement (QI) work. Insufficient faculty experience in QI methods hinders teaching of these competencies in residency programs. We explored the feasibility of personal practice audit as a tool to apply QI principles. Our goal was to find an authentic QI activity that would be relevant, accessible and acceptable to a diverse group of teaching faculty.

Method
We asked faculty geriatricians at McMaster University to review charts for 10 of their outpatients, record data on 8 specific measures, and anonymously enter results into a Google form. Measures were carefully selected to cover several dimensions of health care quality, align with faculty suggestions, and be within control of the geriatrician to change. Summarized results were distributed, allowing comparison of personal practice to peers. Of the 10 geriatricians approached, 9 completed the audit and provided feedback about the process via anonymous survey.

Conclusion
Personal practice audit was feasible and highly acceptable to the faculty group. Few participants (22%) felt that it was more time-consuming than anticipated. All participants found it useful to compare results to peers, all intend to make a change to their practice based on the results, and all wish to repeat the exercise. This simple activity has potential to support faculty development in QI, and offers valuable hands-on experience that can complement didactic courses. We plan to facilitate rapid cycle improvement as a next step to the audit, and assess generalizability to other clinical settings.
Change in attitudes towards teaching through a residents as teachers initiative

E. Amari, S. Frankenberger, K. Wisener, N. Nathoo, H. Broekhuysen, R. Wong, R. Sidhu, K. Veerapen, S. Jarvis-Selinger
University of British Columbia, Vancouver, BC

Introduction
Attitudes toward teaching and learner-teacher relationships are important components of the medical education teaching culture. Residents as Teachers (RaT), a program at the University of British Columbia, was implemented to train residents to teach effectively. We seek to demonstrate the impact of RaT on attitudes towards teaching.

Methods
RaT comprises a 6-topic curriculum (e.g., direct observation and feedback) that has been implemented in a flexible format for various residency programs since 2015. Post-RaT session evaluations with residents (2016-2017) and a focus group with recent graduates of RaT were analyzed for readiness to change, changes in attitude towards teaching, and student-teacher relationships. Additional data is being collected using an adapted Attitudinal Change Learning Survey (Watson, Kim & Watson, 2016) to compare differences in residents’ and faculty’s attitudes towards mistreatment at different stages of RaT implementation.

Results
From the 426 residents who have participated in RaT, 84% (N= 158) of the 188 completed evaluations indicated that residents were ready to apply what they learned to their teaching. Preliminary analysis of a focus group reports that residents who completed RaT value teaching and emphasize a caring attitude towards learners.

Conclusion
Originally designed to improve teaching skills, preliminary data indicates an added value fostering a culture in which residents are ready to teach effectively and engage in improved learner-student relationships. The anticipated benefit is a potential larger-scale culture change as these residents become medical educators. Further analysis of the focus group will be done to look for attitudes toward student mistreatment.

Resident assessments of faculty: Utility of assessment forms

R. Arora, P. Wasi, S. Hamidi
McMaster University, Hamilton, ON

Introduction
Faculty assessment forms are intended to assess trainee’s perceptions of faculty performance, thereby informing promotion and tenure decisions. Little is known about the utility of these forms in assessing behavioural changes of faculty. The resident ITER has been shown to be an effective tool in assessing resident performance and comments correlate strongly with numerical scores. It is important to elucidate whether this similarly holds true for faculty assessment forms.

Methods
Faculty assessments for 69 general medicine attendings were collected from 3 time points, 2010-2011, 2012-2013 and 2014-2015. Numerical scores were analyzed using descriptive statistics and the two-way Anova test. Narrative comments were compared with numerical scores.

Results
The mean subscores for each of the 7 CanMEDS domains on each form did not significantly differ from one another. 19 faculty had assessments at all 3 time points, and overall mean scores did not significantly change across these 3 time points. When adjusting for confounders, the two CanMEDS domains displaying significant changes over time were “collaborator” and “professional”, with significant decreases in scores from 2010-2011 to 2012-2013. Narrative comments by residents focused on the professional, scholar and collaborator domains. Numerical scores had supporting comments 45% of the time, contradictory comments 6% of the time, and no related comments 49% of the time.

Conclusions
Overall, the assessment forms show little variance across the CanMEDS domains, consistent with linear marking. Scores on most domains were unchanged across the three time points. Almost half of all numerical scores had no supporting comments.
Family medicine residents’ perceptions of well-being and preparedness for dealing with burnout: Resident-facilitated small group discussions (resident ice cream rounds)

K. Howse, N. Dalgarno, E. Johnston
Queen's University, Kingston, ON

Background/Objective
Physician and resident stressors negatively affect the quality of our health-care system and patient care. Most studies conducted on resident wellness focus on identifying stressors and wellness strategies. There is a dearth of literature guiding effective curricular support for residents. The purpose of this study is to evaluate an innovative voluntary, resident-facilitated, discussion-based curricular learning initiative in one Family Medicine (FM) training program, called Resident Ice Cream Rounds (RICR).

Method
This evaluation utilizes a mixed-method design. Quantitative data was collected from confidential participant exit surveys following 11 RICR which addressed stress level, well-being, influence of RICR on stress, and likelihood to attend RICR again or recommend RICR to a colleague. Data collection will also include a final survey, and semi-structured interviews with five RICR participants, five non-participants and the two resident facilitators by July 2017.

Results
To date, there have been eight RICR totaling 80 completed exit surveys. There were on average 10 residents per session and ranging from 3-22 residents. Preliminary data showed that 77% of residents experienced moderately to extremely stressful days two weeks prior to completing the surveys. The RICR were well received, with 96% of residents reporting that they would likely/very likely attend another session, and 87% reporting that they would likely/very likely recommend RICR to others.

Conclusion
The preliminary results demonstrate that residents attending RICR are experiencing high levels of stress, and these facilitated small group discussions improve their wellbeing. RICR is an effective form of curricular support for resident wellness.

Resident knowledge and attitudes about burnout, resilience and the ability to change culture

P. Lai1, C. Nowik2, J. Yee3, C. Shearer1, P. Chu4, I. Gold3, A. Warren1, K. Williams3
1Dalhousie University, Halifax, NS; 2Queen’s University, Ottawa, ON; 3Resident Doctors of Canada, Ottawa, ON; 4University of Calgary, Calgary, AB

Introduction
Residency training is characterized by high rates of burnout, which negatively impacts resident well-being and carries broader implications for work satisfaction and patient care. Resiliency, or the ability to easily recover from challenges, can protect against burnout. Resident Doctors of Canada (RDc) has developed a training workshop to improve resiliency through evidence-based skills and tools for support. This study examined residents’ health, knowledge and attitudes before they began the workshop.

Methods
Data was collected at 2 Canadian universities where the resiliency program was offered to residents in four disciplines. Surveys addressed mental health difficulties, confidence in individual abilities to identify and address burnout, and attitudes about stigma and disclosure of mental illness.

Results
132 residents (49% female; 93% in PGY1-2) responded to the survey. Nearly a third (27%) reported a previous mental illness diagnosis. On average, residents rated their current mental health positively (M = 7.26 out of 10) and indicated that they “rarely” had mental health difficulties. Residents felt moderately confident that they could identify and manage burnout but had mixed attitudes about stigma and disclosure of mental illness, disagreeing with discriminatory statements about residents with mental illness but neutral in the likelihood that they would disclose their own mental illness to colleagues and supervisors.

Conclusions
Many residents begin training with pre-existing mental illness. While lamenting stigma, residents remain non-committal about disclosure of their own mental illness to colleagues or supervisors, suggesting that the need for resilience training is great, and that the postgraduate educational culture remains unsupportive of such disclosure.
Maximising potential of a successful exam result through engagement with support of PSU, Wales Deanery

L. Walsh, J. Gasson
Wales Deanery, Cardiff University, Cardiff, Wales

All specialty training programmes entail a series of examinations. These usually consist of written/theory and clinical components. Often, progress from one examination to the next depends on passing the current examination. Similarly, passing an examination is essential to progressing to the next stage of training or to training completion.

The Professional Support Unit (PSU) receives approximately 175 trainee/resident referrals per year. The highest proportion (35%) of referrals relates to exam failure/difficulties.

In general, there are several causes for the failure: lack of preparation, personal issues, capability, ‘natural disasters’. Most report never having failed anything before and therefore often cope poorly with the recurrent failure. Reasons for failure may be straightforward for the majority. However, for many, the underlying causes are complex: work-life balance, complicated home-life, loss of confidence, underlying learning disabilities, anxiety and fear. Often, a combination of factors may be present.

The effect of failure can resonate through the entire fabric of the trainee/resident and impact on their family, work and environment.

- To enable progression, PSU address the nontechnical issues prior to effective preparation.
- Address confidence, anxiety and examination stress using self-help tools, coaching or psychological support.
- Explore and minimise distractions, procrastination and learning disabilities.
- Reinforce positive strategies.
- Strengthen work-life balance.
- Realistic plan for preparation allowing for priorities.

In 2015-16 of 47 exam-fail referrals 72% passed, 11% ongoing and only 8 failed having to leave their programme. Our records indicate that PSU support is effective in supporting trainees/residents experiencing exam challenges and enable them to successfully pass.
Simulation in residency education /  
La simulation dans la formation des résidents

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Simulation based evaluation of anaesthesia residents: Gaps in assessment
M. Fleming, M. McMullen, M. Cummings, S. Field, R. Egan
Queen’s University, Kingston, ON

Background
Simulation in Anesthesiology bridges the gap between theory and practice by allowing learners to engage in high-stakes clinical scenarios without jeopardizing patient safety. This paper-presentation argues that simulation based assessment is an important tool for evaluating the performance-competency of medical residents, especially those near the pass/fail threshold.

Method
A mixed method sequential transformative design was used to collect data. Mixed method data was collected from 17 medical residents who performed four simulations. Residents were interviewed before and after simulations were completed. Each simulation was evaluated by two staff anesthesiologists on scales of 0 to 100 and 0/1 generating a total of 272 scores. Residents’ were also rated by the Program Director and asked to self-assess before and after simulations were completed. The data was analyzed using SPSS and Atlas.ti.

Results
There is little statistical difference between residents’ simulation based assessment scores and their Program Director scores, with the exception of two residents’ scores near the pass/fail threshold. Simulation based assessment can also significantly improve residents’ ability to self-assess, which the literature indicates is generally poor. G-analysis and statistical parametric testing, meanwhile, shows that the number of simulations and raters needed to optimize assessment quality can be estimated.

Conclusion
Simulation based assessments are a complementary assessment tool and can improve residents’ ability to self-assess. These findings are likely to be of interest to medical educators and program administrators interested in self-assessment and/or looking to balance competency based assessment with the time and cost of running simulation assessments.

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In search of the optimal bronchoscopy training platform: Evaluating the use of a novel, low cost, virtual tool for pre-training novice learners
B. Mema, V. Chin
The Hospital for Sick Children, Toronto, ON

Introduction
Bronchoscopy training is costly and novice trainees have difficulties manipulating a bronchoscope because: complex motor skills and counterintuitive nature. We developed a low cost, durable, virtual tool for pre-training of novice learners. We evaluated whether the new model improves the performance of a novice learner.

Methods
24 novice learners were randomized to usual instructions versus pre-training with the bronchoscopy tool combining PowerPoint Presentation with instruction on movements, depending where the lumen is on screen while trainee is holding a scope. Both groups were tested in virtual reality for speed (time) and accuracy (collisions, red outs).

Result
Data were analyzed using independent samples t test and Mann Whitney. The pre- training group was faster (106 s vs 127 s) had more effective movement (62.8 % vs 59.5%) and less time in red out (0.06 vs 0.1), however, none of the differences was statistically significant.

Conclusions
Based on motor learning theories of Fits and Posner, Challenge Point Theory and theory of action representations we speculated that novice learners may benefit from additional “pre-training” on simplified models that enable the formation of initial action representations for bronchoscopy tool-handling skills. Skills for complex procedures like bronchoscopy may be achieved by observing and interacting with low-fidelity models, so long as they contain the fundamental constructs of the skills. Some trainees might have no problem dealing or learning through complexity.
Simulation in residency education / La simulation dans la formation des résidents

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**HybridLab: The new blended learning platform for self-directed medical simulation in the effective development of the technical and non-technical competences**

P. Ignatavicius, R. Gudaityte, P. Dobozinskas, D. Vaitkaitis, A. Krikscionaitiene, Z. Dambrasukas
Lithuanian University of Health Sciences, Kaunas

**Background**

HybridLab is a fusion of distance learning and medical simulation that allows residents to train 24/7 at their workplace without presence of the instructor and/or technician.

**Method**

In 2014 original trauma course developed on the new HybridLab learning platform was evaluated. Twenty-seven surgical residents of Lithuanian University of Health Sciences were enrolled. Skills were grouped into 7 categories according to ABCDE principles and were independently evaluated by reviewers. Progress of the student was assessed immediately and 6 months after the course.

**Results**

Analysis of practical skills evaluation showed a 2.5-fold increase in the overall performance score during course (from 35% to 89%). Re-evaluation 6 months after the course showed only slight decrease in the overall performance score (from 89% to 82%). The minimum score before the course was only 15% (maximum score – 64%). After the course the minimum score increased to 72% (maximum score – 98%). Six months after the course the minimum score decreased to 53%, but maximum score remained as high as 92%. During the post-course survey 92% of the participants stated that they found the acquired knowledge and skills clinically relevant and applicable.

**Conclusions**

HybridLab is an effective medical simulation based tool for development of the technical and non-technical competences. In order to achieve better agreement, we must more clearly define the rules of the skills evaluation.

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**Repetitive self-directed training sessions using the HybridLab platform are required to build and maintain basic laparoscopic skills for junior surgical residents**

Lithuanian University of Health Sciences, Kaunas

**Introduction**

HybridLab is a fusion of distance learning and medical simulation that allows residents to train 24/7 without presence of the instructor according to personal needs, and build-up and maintain the basic laparoscopic surgery skills.

**Methods**

In 2015 14 residents completed the basic laparoscopic skills course on HybridLab platform and 9 took the update course after one year. Tasks were performed in the laparoscopic box trainer. Skills were grouped into 2 categories: 4 tasks for basic skills (eye-hand control, two hands coordination, tissue dissection assignments), 2 tasks for advanced basic skills (tying and placement of laparoscopic loop, laparoscopic suturing). Progress during the first course, retention of the skills and the learning curve during the update course were evaluated.

**Results**

During the introductive course residents on average required 16 days (32 hours) to achieve 95% performance score in basic skills (mean time for task – 2.5 min, mean number of mistakes – 1.5) and 82% in advanced basic skills (mean time – 8 min). Reevaluation after 12 months revealed significant deterioration of laparoscopic skills. Residents on average scored 45% (mean time – 3.1 min, mean number of mistakes – 2.4) in basic skills and 25% in advanced basic skills (mean time – 15 min) on retest. However, it took only 1.5 days (6 hours) to achieve 100% performance score in basic skills, and 90% in advanced basic skills during the update course.

**Conclusions**

Effective self-directed learning training programs should include short-term update/recall courses to maintain and improve the acquired essential skills.
Using innovative technologies for medical education /
L’utilisation de technologies innovantes en formation médicale

Development and assessment of a 3D printed neuroanatomy teaching model, Faculty of Medicine, University of Ottawa

S. El Bialy, R. Weng, A. Jalali
University of Ottawa, Ottawa, ON

Background
Teaching Neuroanatomy is challenging in particular when the students have to learn the nervous pathways which are unavailable to be demonstrated on a human cadaver, and 3D printed models hold promise to teach these difficult anatomical structures.

Methods
2D images of the brain, brainstem, cervical, thoracic, and lumbar spinal cord were processed in Adobe Photoshop and each slice was separated to be assembled on Tinker CAD. The 3D printer compatible files were printed out on a MakerBot Replicator 2X printer in the Faculty of Medicine and Health Sciences library and a 3D model of the spinothalamic tract, corticospinal tract, and dorsal column-medial lemniscus pathway was successfully created. Pre-clerkship medical students (n=60) were then surveyed to validate the model. The survey was created on Google Drive forms and consisted of 4 Likert-style questions. The statistics were extracted from Google Drive analytics.

Results
50% of the students participated in the survey, they stated that the 3D model is a more effective way of learning than the classical images (82%), it enhanced their understanding of difficult neuroanatomy concepts (80%), it helped them better locate the tracts (79%) and it facilitated their learning (85%).

Conclusions
The model helped to increase the students’ understanding of difficult neuroanatomy models. It is recommended to continue developing more ways where 3D printing can improve medical education.
### Using reflection to be an effective communicator

**U. Najeeb**, M. Sharma, P. Veinot, A. Kuper  
1University of Toronto, Toronto, ON; 2Maple Leaf Medical Clinic, Toronto, ON; 3Wilson Center, Toronto, ON

**Introduction**  
The CanMEDS Roles have shaped medical education for over a decade, but a need to augment the teaching and assessment of the non-Medical Expert Roles remains. As part of a larger research program addressing the academic content underpinning the non-Medical Expert Roles, we implemented an interactive session for eighteen fourth-year Internal Medicine (IM) residents to teach basic social science knowledge supporting the Communicator Role, specifically communicating across cultural and socio-economic divides. We then explored residents’ perceptions about the Communicator Role in light of this new knowledge.

**Methods**  
Six weeks after the session we asked residents to write an essay about a recent clinical interaction, reflecting on how a non-Medical Expert CanMEDS Role might influence the care of IM patients. These essays were analyzed using qualitative description for their understanding of the Communicator Role.

**Results**  
All residents submitted thoughtful essays on real-life experiences in professional settings. All participants agreed that the main goal of effective communication was to provide compassionate and patient-centred care. Concepts such as culture, humility, respect, social justice and active listening, which had been introduced in the teaching session, were described as essential for effective communication with patients and their families. This was particularly emphasized when communicating with patients from minoritized ethnic and cultural communities. Professionalism and respectfulness were seen as particularly helpful for interprofessional communication.

**Conclusion**  
This curricular and assessment intervention enabled residents to understand and frame complex notions of clinical communication. This approach may serve as a model for other specialties to teach non-Medical Expert Roles effectively.

### How future doctors learn to collaborate: The complexity of health care practice

**T. Klaassen**, L. Fluit, I. Wallenburg  
1Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; 2iBMG Erasmus University, Rotterdam, Netherlands; 3UMCG Postgraduate School of Medicine, Groningen, Netherlands

**Background**  
Good collaboration is stated to enhance patient safety but it is not easy. The problem with collaboration is at least two-folded while medical curricula are mainly teaching medical knowledge and collaboration in practice between professionals should be improved. How to do this strongly depends on what collaboration actually is. It is richer than just a definition so we observed the context in which collaboration takes place more closely. In this study we describe what collaboration in practice means and how we can use practices to better prepare future doctors.

**Methods**  
Rapid ethnographic research was used to perform 22 one-day observations by shadowing future doctors during their daily work followed by recorded in-depth interviews. Three groups (from five departments) were included: undergraduates who started their first clerkship (UY-4), their final senior clerkship (UY-6) and first year residents (PGY-1). Data was transcribed verbatim. Qualitative data was analyzed through template analysis from close reading, followed by descriptive coding and interpretive coding to formulating overarching themes.

**Results**  
Our data showed us the complexity of health care practices when it comes to collaboration; good examples but also several fields of tension and constraints. We identified five important aspects:

- Collaboration as cognitive process;
- Role modeling behavior in collaboration;
- Hierarchy: past, present and future together in one practice;
- Mono-versus interdisciplinary exposure;
- Influence of socio materials.

**Conclusions**  
Results demonstrate that health care practices are not an ideal situation for future doctors to learn collaboration from professionals that work ‘together’. What future doctors (don’t) experience makes it almost impossible to determine what good collaboration is and how to participate. Future doctors must be prepared for an imperfect context by training them how to identify good and bad practices, so they can reflect on and learn from these examples to become good collaborators.
Improving communication in the NICU: Parental perceptions and knowledge about resident physicians

A. Pellerin-Leblanc, M. Derynck, K. Dow
Queen’s University, Kingston, ON

Introduction
Resident physicians play many roles including acting as medical learners and health-care providers. However, review of studies has shown that their varied roles may not always be clear to patients and families. The purpose of this study was to explore parental knowledge of residents, as well as satisfaction with communication between parents and residents in the NICU.

Methods
Using a cross-sectional design, all parents of newborns admitted to the level 3 NICU at Kingston General Hospital for more than 24 hours between January and December 2016 were invited to participate in our study. Our qualitative study aimed to measure parental knowledge, preferences, and perceptions through descriptive statistical analyses.

Results
A total of 73 surveys were collected, for a final response rate of 38%. The majority (i.e., 81% of parents) reported having a resident involved in the care of their child. Significant findings included that level of education was shown to be directly correlated with knowledge of residents (r = 0.336, p = 0.006). Questions on parental knowledge revealed that 21% of respondents were not aware that residents are physicians. Most parents would like members of the medical team to identify their role. While 68.5% of parents reported that residents effectively introduced themselves to them, 29% of desirous parents did not.

Conclusion
Our project highlighted that appropriate introductions of residents were particularly important to parents and that residents should clearly identify their learner roles. Understanding these parental preferences may help residents improve their communication with families in the NICU.
Teaching and learning in residency education /
L’enseignement et l’apprentissage dans la formation des résidents

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Where is it falling apart?:
An assessment and diagnostic tool for identifying and addressing problems in the clinical encounter

D. Martin
University of Toronto, Toronto, ON

Background
Problems with communication in the clinical encounter during postgraduate training are frequently identified. Clarity on the type of problem(s) experienced helps guide the selection of resources, sequence of intervention and the educational strategy used. Unravelling whether it is content (knowledge), process (skills) or a perceptual (attitude) issue can be challenging. Once the problem has been identified knowing how to remediate it can be equally challenging.

Methods
A pilot study was done retrospectively exploring Board of Examiners (BOE) University of Toronto, Office of Postgraduate Medicine cases where residents were identified as needing additional support from a Communication coach. Cases were deconstructed to identify problem type and educational interventions using Martin’s Communication Map (an evidenced based, conceptual map of an organized, patient-centered clinical encounter). The framework was then used to construct an assessment and diagnostic tool to aid both teachers and learners to identify the next steps to remediate problem(s).

Results
Content problems, knowing what to ask, need to be remediated through didactic approaches. Process problems, knowing how to ask are best addressed through experiential skill building. Perceptual problems, what the trainee is thinking and feeling, are best addressed through reflective questions and conversations. Clearly identifying the problem made it possible to sequence the educational intervention and establish effective educational interventions.

Conclusion
Communication problems take many forms. Clearly differentiating and correctly characterizing the problems helps determine the educational interventions, learning sequence and strategies to provide targeted remediation.

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Reframing the Health Advocate Role

K. A. LaDonna, S. Burm, S. Cristancho, C. Watling
Western University, London, ON

Introduction
Developing meaningful learning opportunities and effective assessment strategies for the Health Advocate role remains challenging. To support training, we require a broad community of scholars to clarify expectations for what it means to competently enact this critical aspect of care.

Methods
We used a constructivist grounded theory approach to explore the Health Advocate role; data was collected using photo elicitation. Patients (n=7) with a variety of health conditions, and physicians (n=9) representing 7 specialties took photographs depicting health advocacy; participants’ photographs informed semi-structured interviews. Themes were identified using constant comparative analysis.

Results
Participants articulated that the Health Advocate role requires being able to define what advocacy is, understand its value, and enact it effectively. Being a ‘good advocate’, therefore, relies not only on knowing what advocacy is and how to do it, but also on having sufficient expertise and status to advocate capably. Experience and power may drive competency. In other words, having a conceptual understanding about the Health Advocate role is different than having the ability to effectively engage in advocacy.

Conclusion
CanMEDS specifies that competent advocacy requires action. Learners, however, may not have sufficient clinical experience or status to transform their learning into action. Is it enough for residents to leave training knowing what advocacy is, or should they also be able to effectively enact change? We need to clarify our expectations for what learners can reasonably attain. We propose that the Health Advocate role requires a heuristic similar to the staged competence continuum for medical expertise.
Does diagnostic certainty correlate with mental effort?

S. Blissett1, M. Sibbald2, E. Kok3, J. Van Merrienboer3
1McGill University, Montreal, QC; 2McMaster University, Oakville, ON; 3Maastricht University, Maastricht, Netherlands

Introduction

The mental effort required to make complex decisions involving multiple interacting variables can be overwhelming to learners. Various strategies have been implemented to manage this mental effort, however it is possible that there may be other components that could still be optimized. Trainees frequently report low diagnostic certainty, which could be another potential source of mental effort. The relationship between diagnostic certainty and mental effort has not been explored. The purpose of this study is to explore the correlation between diagnostic certainty and mental effort. Our hypothesis was that an inverse correlation would be observed between diagnostic certainty and mental effort.

Methods

Focused on the task of ECG interpretation, 97 PGY 1-3 Internal Medicine residents at McMaster University were invited to participate. They provided a diagnosis for 10 ECGs, rating their level of certainty (0-100%) and mental effort (Paas scale, 1-9). Spearman’s rho was calculated to determine the correlation between diagnostic certainty and mental effort.

Results

Twenty-two residents (22/97; 23%) completed 220 ECGs. As expected, there was a moderate inverse correlation noted between certainty and mental effort (Spearman’s rs=-.411, p<0.001).

Conclusion

The inverse correlation between diagnostic certainty and mental effort suggests that there is an association between these two variables. Future work could focus on experimental manipulation of certainty to determine if certainty is a source or a bystander of increased mental effort. Should low certainty result in higher mental effort, strategies to manage the effect of low certainty on mental effort could be developed.
Mental health curriculum in Canadian paediatric training programs: Current training and program director perspectives

A. Rodrigues¹, A. Atkinson², D. Korczak²
¹McMaster University, Hamilton, ON; ²The Hospital for Sick Children, Toronto, ON

Introduction
Canadian paediatricians play an important role in managing mental health (MH) problems in children, yet they consistently report feeling inadequately trained in this area. Training programs also struggle to effectively teach the Royal College of Physicians and Surgeons of Canada (RCPSC) Objectives for Training Requirements (OTR) in MH. As an initial step toward improving MH curriculum implementation, an environmental scan was conducted of the current MH educational strategies in paediatric residency programs.

Methods
Paediatric postgraduate program directors (PDs) at 17 Canadian academic centres described the MH curriculum in their training programs using an online survey.

Results
Fifteen of 17 PDs completed the survey. Ten programs (66.7%) reported having an explicit MH curriculum. Thirteen programs (86.7%) had a MH rotation of which 10 (76.9%) were mandatory. Twelve of the 13 rotations were supervised by psychiatrists. Ten PDs (66.7%) reported that their programs covered the MH OTR “well”, with 6 (60%) of those PDs reporting that their graduating trainees felt “somewhat comfortable” managing MH problems.

Conclusions
To our knowledge, this is the first study of the MH curriculum and PD perspectives regarding implementation of the RCPSC MH OTR in Canada. Despite MH curriculums, mandatory rotations and adequately covered MH OTR, most PDs report that their graduating trainees feel only somewhat comfortable with paediatric MH problems. Trainee perceptions and objective indicators of competence are further needed to aid educators in crafting clinical experiences that will meet explicitly defined competencies given the national implementation of Competency Based Medical Education in Canada.

Rethinking the PGY-1 basic clinical year: A national survey of its educational value for diagnostic radiology residents

K. E. Darras¹, A. Arnold¹, C. Mar¹, B. Forster¹, L. Probyn², S. Chang³
¹University of British Columbia, Vancouver, BC; ²University of Toronto, Toronto, ON

Introduction
Although 1993 was the last year of the traditional internship, the structure of the PGY-1 Basic Clinical Year has not substantially changed for radiology trainees and there is no evidence to guide rotation selection. The purpose of this study is to determine which clinical rotations residents and staff radiologists feel provide the most educational value for clinical practice.

Methods
Following institutional ethics approval, an online survey was administered to Canadian radiologists and radiology trainees. The survey collected demographic information, years of practice and scope of practice. Respondents were asked which rotation category was the most useful to their practice as well as to rank the usefulness of individual rotations on a 5-point Likert scale. The Schulze method was used to rank the usefulness of the 31 rotations considered.

Results
Of the 275 respondents, 73.1% were male and 47.3% were trainees. Overall, respondents felt that a basic clinical year was important and favoured general surgery rotations as most relevant to their clinical practice. Interventional radiologists found general surgery and surgical subspecialty to be equally relevant. The rotations deemed to be “essential” were emergency medicine (48.7%) and general surgery (46.6%) and the rotations deemed to be “very useful” were orthopedics (45.8%), trauma (44.4%), neurosurgery (43.3%), neurology (42.2%), and hepatobiliary surgery (38.9%).

Conclusions
The PGY-1 Basic Clinical Year for radiology trainees should be restructured to include more of the rotations that are perceived as valuable to practice, most notably surgery. These results will be valuable for programs transitioning to competency-based training.
A mixed methods evaluation of pediatric trainee preparedness to manage cardiopulmonary arrests

Ó. Walsh¹, S. Lydon², P. O’Connor²
¹The Hospital for Sick Children, Toronto, ON; ²National University of Ireland, Galway, Ireland

Background
Pediatric cardiopulmonary arrest (CPA) survival rates are strongly linked to the training of the doctors responding to the event. This study sought to characterize the level of experience in managing CPAs among pediatric trainees, and to investigate the nontechnical (NTS) required to effectively lead a pediatric CPA team.

Methods
A mixed-methods research design was used. For the quantitative phase, a questionnaire was developed to assess training, confidence, and experiences related to CPA management. For the qualitative phase, trainees participated in a series of critical incident technique (CIT) interviews to explore the NTS used during the management of pediatric CPAs.

Results
A total of 56 of 131 (37.1% response rate) trainees responded to the preparedness questionnaire. A total of 48.2% of respondent expressed low confidence in their skill as a team leader during the management of a CPA.

17 pediatric trainees participated in a series of critical incident technique (CIT) interviews to explore the NTS used during the management of pediatric CPAs. The CIT interviews highlighted deficiencies in specific NTS (identifying options, prioritising, and identifying and utilising resources.

Conclusions
Our results indicate that there is a desire for more training in CPA management among pediatric trainees, in particular as a team leader, which includes a focus on key NTS.
Transition-to-residency courses: Do they make a difference?
C. Shearer, C. Gallivan, A. Smith, S. Field, A. Warren
Dalhousie University, Halifax, NS

Background
Transition-to-residency courses are intended to ease the inherently stressful transition from undergraduate to postgraduate medical training. Past research has supported these courses with evidence of knowledge and confidence gains between pre- and post-course. Yet, little is known about whether these courses are perceived as beneficial by learners once they transition into residency.

Methods
During Spring 2016, learners attended a 5-week multicomponent transitions course. Pre- and post-course surveys were completed at the time of the course and once more in the Fall of 2016, after beginning residency. This follow-up survey asked learners to rate, for the third time, their preparedness to perform Canadian Entrustable Professional Activities (EPAs) for the transition to residency and to provide general feedback on the course.

Results
Only 9 residents responded to all 3 surveys (response rates ranged from 17 to 42%). Although quantitative comparisons were precluded by the low response rate, inspection of means revealed a pattern in which confidence for most EPAs dropped between post-course and follow-up time points, but did not fall below pre-course levels, suggesting that course-related learning may have been carried forward into residency. Confidence for gathering a patient history and conducting patient handover continued to improve over time. Residents highlighted the utility of its simulation components as being especially useful in easing their transition to residency.

Conclusion
This study suggests that transitions courses may be linked with improvements in confidence that are carried into residency and that simulation may be especially important in easing the transition to postgraduate training.
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Are the RATs learning? An evaluation of the residents-as-teachers program at Dalhousie University

**G. Williams**, J. Acuna, C. Shearer, C. LeBlanc

Dalhousie University, Halifax, NS

**Introduction**

Over the past decade a host of Residents as Teachers (RAT) programs have been described in the literature, though no standard best practices exist. Dalhousie University has been running a RAT program since 2012. We performed an outcomes-based evaluation of the program for quality improvement, and to assess impact of the program on residents’ teaching quality.

**Methods**

The evaluation had three components: 1) summary and review of attendee satisfaction surveys 2) analysis of a focused survey of current RAT attendees to address unanswered questions from session evaluation data; and, 3) retrospective analysis student evaluations-of-residents comparing RAT vs non-RAT residents over 1 academic year.

**Results**

The RAT sessions were delivered over 2 days. Session evaluations were positively received, with overall mean (SD) ratings of 4.37 (0.47) for Part 1 (N = 19) and 4.51 (0.29) for Part 2 (N = 16). Written feedback revealed strength in the interactive component of the program. 9 residents completed the focused survey. Group interaction and pair-and-share techniques were highly valued, and most components of the RAT program had a perceived positive impact on teaching ability. Comparison of resident evaluations by 3rd and 4th year medical students (180 non-RAT vs 61 RAT) did not reveal a statistically significant difference.

**Conclusions**

The RAT program at Dalhousie University has been well received, particularly its interactive component. Residents reported that the program improved their teaching skills, though comparison of student evaluation of resident teacher did not reveal statistical difference (RAT vs. Non-Rat).

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What are the factors influencing Canadian-trained residents’ choice of pursuing the sub-specialty of maternal-fetal medicine?

**A. M. Roggensack**¹, E. Oddone-Paolucci¹, P. Veale¹, S. Chandra², J. M. Lockyer¹

¹University of Calgary, Calgary, AB; ²University of Alberta, Edmonton, AB

**Introduction**

As pregnancy care becomes more complex, there is a need for MFM specialists. Little data exists related to factors affecting resident choice of a MFM career, particularly in Canada. Research questions: (1) What are the perceptions of Canadian-trained residents regarding MFM residency / career? (2) What do current trainees see as factors influencing their choice of MFM? (3) What aspects of MFM training and career are perceived as attractive or unattractive?

**Methods**

A qualitative thematic analysis approach explored resident's perceptions. All Canadian O&G residents (PGY-3,4,5) and MFM residents were invited to participate in a semi-structured telephone interview. Interviews were recorded, transcribed, and anonymized. Analysis occurred iteratively, with coding occurring concurrently with interviewing to develop a thematic map.

**Results**

Twenty-one residents were interviewed (16 O&G, 5 MFM). Themes included: 1) Inspired by MFM, 2) O&G residency experiences, 3) Impact of MFM residency program, 4) Variation in MFM practice, 5) Academic career, 6) MFM lifestyle, and 7) Finances. There were factors identified as intrinsic to MFM (ultrasound, patient complexity, high-risk obstetrics), as well as extrinsic to MFM (relating to personal factors (family, finances, geography)) that affected perceptions. Favourability to MFM could be improved through: 1) Mentorship, education, and early ultrasound exposure, 2) Modifications to MFM residency requirements, and 3) Opportunities to continue gynecology practice.

**Conclusions**

Understanding why residents choose MFM is important in ensuring adequate access to MFM clinical care. This study identified factors that affect resident's pursuit of MFM, as well as opportunities for promotion and growth of the sub-specialty.
Teaching and learning in residency education / L’enseignement et l’apprentissage dans la formation des résidents

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Ascertaining top evidence in emergency medicine

S. J. Bazak, Y. Jajarmi, T. M. Chan, J. Sherbino, S. Upadhye
McMaster University, Hamilton, ON

Introduction
The application of evidenced-based practice in emergency medicine (EM) is critical to improve the quality of patient care and ensure proper resource allocation. As EM is a broad specialty it can be daunting for junior residents to know where to begin their acquisition of evidence based knowledge. With the transition to competency-based education, for residents to excel in the CanMEDS role of scholar, they need a starting platform. Our study’s objective was to formulate a list of ‘top papers’ in the field of EM using a delphi approach to reach an expert consensus.

Methods
Participants were recruited from FRCPC EM programs across Canada through a nomination process by program directors. The delphi survey consisted of three study rounds distributed via email. The study tool was piloted first with McMaster FRCPC-EM residents. Round one asked participants to list what they felt were important research papers relevant to the field of EM. With subsequent rounds, participants ranked the papers listed in round one, followed by a chance to adjust their rankings based on fellow participant’s responses.

Results & Conclusions
A total of eight FRCPC-EM programs responded with 30 submissions across the three rounds. In the first round, 119 studies were suggested. By the third round, a consensus of at least 70% agreement was reached to generate the final list of 29 studies.

This list of top studies is the first Canadian list designed by expert consensus. It can be used as a resource for junior residents as they transition into practice.

Admissions: Selecting residents / Les admissions : sélection des résidents

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Punjab residency program in the province of Punjab Pakistan

J. Khan
University of Health Sciences Lahore, Lahore, Pakistan

Introduction
Punjab Residency program is a unique step of Punjab Government having multifold benefits both for medical professionals and stakeholders. The program is designed to help the postgraduate candidates of Residency in various hospitals of Punjab Region especially in the under developed regions to facilitate the patients and train the other paramedical staff. The entire process of candidacy and selection is automatic and transparent.

Methods
The applications were invited through advertisements placed in the Daily Newspapers. The process was held at two levels: Level I, Year 1 followed by 5 Grievance Committee Meetings and Level III, Year 3 followed by three meetings of Grievance Committee were held to address the issues identified during the process.

Results
In Level I, 2184 applications were received from them 1770 were accepted. The rejected applicants applied to redress their issues and as a result 5 Grievance meetings were held in which total 814 applications were presented out of which 680 were accepted and 134 were rejected. In Level III, out of 309 applications, 268 applications were sorted according to their “Current Institution” as “Public Institution” & the completion of their 2 years of “RTMC” and placed these candidates according to their first preference and their “Current Institution”.

Conclusion
In Level 1, allocations were totally on merit based whereas in level III, allocations were made on the basis of preferences and the current hospital of service. Preferences were accommodated where possible. However, where seats were not available, applicants were advised to revise their preferences in some cases.
Assessment: Cutting edge tools and practical techniques /
L’évaluation : outils d’avant-garde et techniques pratiques

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Standard setting practices for exit clinical examinations of the specialist medical colleges of Australia

J. Williams, J. Smith
Bond University, Robina, Australia

Introduction
Standard setting is an essential contributor to the validity of an assessment. At the specialist college exit examination level, the concept of standard setting is a key patient safety issue, since trainees who pass their assessments will be registered as medical specialists, and will practise autonomously. This paper provides a review of the standard setting practices used by the colleges for exit clinical examinations, and recommendations for improvements to current methods based on application of literature from the undergraduate sphere.

Methods
A literature review was undertaken, and college websites were interrogated for information on standard setting practices for exit clinical examinations. A brief questionnaire was circulated to the colleges for further information, and follow-up phone calls conducted for clarification and additional details. Information sought included methods of standard setting utilised, post-hoc adjustments of cut score undertaken, and processes for continuous improvement of standard setting practices.

Results
A variety of standard setting methodologies are used for the exit clinical examinations of the colleges, with a recent trend towards criterion-referenced approaches. The standard setting methodologies of some colleges were unable to be found in the public domain.

Conclusion
Inferences on benefits and disadvantages of the available methods of standard setting must be made from literature on standard setting of undergraduate OSCEs. Criterion-referenced, examinee-centred standard setting methodologies are appropriate. In small cohorts, increased standard error must be accounted for or alternative, test-centred, methods used. Post-hoc analysis of examination reliability and validity should be undertaken. Mixed methods can be used for quality assurance.

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Simulating the surgical decision making process through an objective clinical assessment of practice: A feasibility study

M. Gillis, A. Glennie, G. Richardson, W. Oxner, S. Scott, L. Gauthier, M. Murray, W. Stanish, A. Hayward, D. Alexander
Dalhousie University, Halifax, NS

Introduction
Assessment of surgical competence is a difficult task for surgical training programs. Objective assessment tools are lacking in the current time-based model. Our goal is to evaluate the feasibility of incorporating a surgical Objective Clinical Skills Examination (OSCE) into a global assessment of competence to assess readiness for independent practice.

Methods
A feasibility study was completed with preliminary results from a pilot for a surgical OSCE at a medium-sized orthopedic training program. This full-day examination consists of four scenarios to assess clinical and surgical decision-making and skill. Standardized patients and cadaveric specimens were used for simulation. Evaluations were developed to assess clinical/surgical competencies, incorporating the CanMEDS framework, producing an “OSCE-score”. The previously validated O-SCORE tool (University of Ottawa) was applied and Orthopedic In Training Examination (OITE) scores collected.

Results
Residents and orthopedic surgeons found the patient encounters and surgical simulations to closely resemble actual clinical scenarios. Three of the four scenarios demonstrated a strong positive correlation between OSCE-score and O-SCORE: R 0.79, 0.78, 0.71 (p<0.05). Overall OSCE scores showed strong positive correlation with OITE scores, R-value of 0.840 (p < 0.05). Measurable expenses totaled less than $1000 per resident: skills center access, standardized patients and cadaveric specimens (not accounting for time investment by faculty).

Conclusions
Administering a surgical OSCE to evaluate critical surgical competencies, to compliment other forms of assessment is practical. Initial assessment suggests this tool will achieve validity. Financial impact is modest in comparison to the insight gained by both residents and faculty.
Development and validation of a simulator-based tool to assess resident competency in pediatric airway management

R. Wing, J. Baird, S. Duffy, L. L. Brown, F. Overly, M. Nocera, C. Merritt
Alpert Medical School of Brown University, Providence, RI

Background

The Accreditation Council for Graduate Medical Education has mandated the assessment of pediatric and emergency medicine residents’ specific core competencies, including procedures such as pediatric airway management. Although there are standard courses for pediatric airway management, there is no validated assessment tool for basic and advanced pediatric airway management competency. We developed a simulation-based tool for assessment of residents’ pediatric airway management competency and evaluated arguments supporting the tool’s validity and reliability.

Methods

An expert panel developed a pediatric airway competency assessment tool (PACAT) to assess knowledge and skills in 6 major domains of pediatric airway management. PACAT – assessing basic airway maneuvers, airway adjuncts, bag-valve mask ventilation, advanced airway equipment preparation, direct laryngoscopy and video laryngoscopy – was reviewed for content by a second group of subject matter experts. The final tool consists of a 10-question written exam and a 72-item Pediatric Airway Skills Competency Assessment Checklist. We enrolled 12 subjects at 4 different training levels to participate in the simulation-based assessment. Competency assessment scores were rated by 2 independent expert raters. Statistical analyses performed included the Kruskal-Wallis, Jonckheere-Terpstra and Cohen’s Kappa tests.

Results

For the pooled rater data, ED was very strongly correlated with both the DC (rho=0.90, p<0.001) and the GRS (rho=0.94, p<0.001). ANOVA demonstrated significant differences between YIT and GRS (p<0.03) and ED (p<0.04). Post-hoc testing demonstrated significant differences between the most junior and most senior residents. Rating patterns were similar between rater groups, but internal raters gave higher scores across all metrics.

Conclusion

Validity evidence collected from multi-rater video assessment supports the use of an entrustment scale for the assessment of technical skill, while also highlighting the opportunity to employ multi-rater data for benchmarking and faculty development.
Real-time patient satisfaction application for the collection of patient satisfaction data: Case study at University Health Network Joint Department of Medical Imaging

M. Da Rosa¹, M. Tang², R. Mohan²
¹University of Toronto, Toronto, ON; ²University Health Network, Toronto, ON

Introduction
Patient satisfaction surveys are used to evaluate quality of care and may in the future be integrated into trainee evaluations. Volunteers are a valuable partner in patient satisfaction. The purpose of the study was to create a model for obtaining high quality real-time patient satisfaction feedback utilizing volunteer services and a tablet-based electronic survey.

Methods
Data was collected on a total of 254 patients from June-August 2016. Surveys consisted of 27 questions assessing four established categories: Consideration; Coordination; Comfort; and Communication on a 5-point Likert scale. Surveys were administered by a single volunteer using an iPad based application over the course of 5 minutes. Aggregate patient satisfaction data was tabulated as a whole and in subgroups by imaging division.

Results
The study population consisted of mostly patients aged 40-79 (73%). Distribution across divisions was: nuclear medicine (24%), radiography (22%), CT (14%), ultrasound (19%), MRI (11%), and interventional radiology (IR-10%). Highest overall patient satisfaction was observed in IR, which also scored highest in Communication and Consideration scores despite low scores in Coordination and Comfort. In general, patients felt the imaging staff were professional and capable but were rushed with little time for questions. Nearly 25% of patients in some divisions experienced pain that was unacceptable to them, far more than expected.

Conclusion
Real time data collection driven by high quality volunteer services is an effective and worthwhile model for collecting actionable data in a busy imaging department. The next steps are to integrate patient satisfaction data into trainee evaluations.
Assessing the efficacy of the first six months of a competency-based anesthesiology residency training program

C. Hudson¹, P. Rao², S. Crooks², V. Naik², E. J. Stodel³
¹University of Ottawa, Ottawa, ON; ²The Ottawa Hospital, Ottawa, ON; ³Learning 4 Excellence, Ottawa, ON

Introduction
Competency-based medical education (CBME) involves identifying abilities required of physicians and then designing curriculum to support the achievement and assessment of these competencies. We compared knowledge and skills of 11 residents 6 months into an anesthesiology CBME program to those of 9 residents 18 months into a non-CBME program to determine whether foundational anesthesia skills can be taught in a condensed timeframe.

Methods
The MCQ-based Anesthesia Knowledge Test (AKT)-1 was administered at the start of training to determine baseline knowledge. At 6 months for CBME and 18 months for non-CBME, residents wrote the AKT-6 and were assessed using an 8 station OSCE using checklists and global rating scales (GRS). Clinical assessment used our Clinical Case Assessment Tool (CCAT).

Results
AKT-1 scores were similar for CBME and non-CBME residents (57 vs. 52%; p=0.0869). Both groups did significantly better on the AKT-6 compared to AKT-1; however, CBME residents’ scores were significantly higher than those of non-CBME residents (73 vs. 61%; p=0.0273). Non-CBME residents were scored higher than CBME residents on the OSCE (GRS scores 4.9 vs. 4.5; p=0.0163 and checklist scores 86.65 vs. 79.0%; p=0.0302) and in all stages clinically (p=0.0001).

Conclusion
CBME residents scored significantly higher on knowledge tests compared to non-CBME residents, while their clinical skills performance was significantly lower.
Research and development of a bone marrow aspirate and biopsy curriculum and assessment tool

C. J. Lui, T. Beesley, R. Egan
Queen’s University, Kingston, ON

Introduction
Bone marrow aspiration and biopsy (BMAB) is a fundamental Hematology entrustable professional activity (EPA). Variability in resident instruction and assessment in BMAB education may result in inconsistent sample quality, delayed diagnosis, and potentially suboptimal patient care. The objective of this study was to develop a BMAB procedural teaching curriculum and competency-based assessment tool.

Methods
Semi-structured interviews (40-60 minutes) were conducted with residents (n=4) and attending staff (n=5) regarding teaching and assessment of BMAB. Interview data on perceived gaps of current BMAB curricula informed development of an improved procedural curriculum and a more accessible, valid, and feasible assessment tool. Five BMAB content experts participated in a small modified Delphi study that reviewed, rated, and refined the developed tool.

Results
The “see one, do one, teach one” method was identified as the primary instructional method for BMAB teaching. Residents expressed that lack of patient variability (i.e. obese, elderly, anxious) and limited opportunities to perform BMAB as limitations of the current BMAB curriculum and decreased self-efficacy for performing BMAB. Residents were not aware of a formal BMAB skills assessment tool. Staff identified: 1) communication with patient, 2) knowledge of procedure, and 3) ability to adjust extraction method as important competencies for inclusion in BMAB assessment.

Conclusion
This study resulted in the development of a revised BMAB curriculum and competency-based assessment tool. Study findings can improve procedural teaching and assessment in one area (BMAB) that may be expanded within hematology (e.g. lumbar puncture with instillation of chemotherapy) or to procedures in other subspecialties.
Engaging residents: Inspiring the next generation of leaders and educators / Mobiliser les résidents : inspirer la prochaine génération de leaders et d’éducateurs

The perceptions of the role models in “the wisdom of medical experts” program

P. Lin, Y. Chen
Far Eastern Memorial Hospital, New Taipei City, Taiwan

Background
Learning from role models through observation and reflection has far-reaching influence. We designed, implemented and evaluated a program to explore the residents’ perceptions and reflections about role modeling.

Summary of work
We designed a program “The Wisdom of Medical Experts” to give the residents a soft way to shape the professionalism through lessons by outstanding physicians from diverse specialties. Each speaker acted as a mentor to share their career preparation, lifestyle, values and professional achievements. Questionnaire with feedbacks were collected.

Summary of results
The importance of the features of the role models was evaluated using a 3-point rating scale. The excellence in teaching skill was rated as a mean 2.57, character 2.5, clinical performance 2.5, and academic ability 1.93. 50% residents expected themselves to be excellent in clinical performances.

Discussion
We provide role models mentoring to facilitate residents’ reflections and assist residents to make the connections between the outstanding physicians’ experiences and the standard learning system. 85.7% residents agreed this program could help them to shape professional identity and commitment, and enhance the values of medical profession.

Conclusion
Our findings reinforce the important function of role models in influencing residents’ motivations and values. We could recruit more role models to strengthen the contents and diversity of this program.

Take-home messages
Outstanding physicians as role models to share their experience in clinical development, values and attitudes of medical profession can not only improve the residents’ learning but also provide them positive thinking of the future professional development.

Mentorship in Canadian emergency medicine residency training programs: A needs assessment

K. Sutherland, C. La Riviere, E. Weldon, C. Pham
University of Manitoba, Winnipeg, MB

Introduction
Research supports mentorship in the development of medical trainees. Mentored residents are nearly twice as likely to describe excellent career preparation and demonstrate objective career success. In prior research, only 65% of training programs in Canada had a mentorship program, and 40% indicated a need for more formal mentorship.

Methods
A needs assessment survey was distributed to RCPSC Emergency Medicine (EM) Program Directors (PDs) across Canada regarding residency mentorship. All EM residents and staff physicians involved in mentorship were secondarily assessed. Both surveys were comprised of binary, open ended, and 5 point likert scale questions. Responses were analyzed using Fisher’s exact test.

Results
Eleven PDs responded. Formal mentorship programs were found in 82% of training centers, 77% instituted within the past 5 years. Half of resident/mentor pairings were based on a combination of identified career goals, personality traits, or resident request. One program required mutual scheduled shifts in addition to meetings.

Fifty six residents and 51 staff physicians responded. Mentorship was significantly associated with benefits to career (p=0.0016) and niche (p= 0.0019) development for residents. Formal mentorship was felt to have a significant association with resident academic development (p= 0.05) and lower rates of burnout (p= 0.0018) by staff. Staff mentors associated mentorship with a personal development benefit (p=0.0355).

Conclusion
The majority of EM programs have adopted formal mentorship programs. For residents and staff, mentorship is associated with improved career, niche development and academic advancement. Future research will include a before and after study of formal mentorship implementation.
Leadership education / Formation en leadership

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Leadership skill development at the postgraduate level

C. Grady, E. Johnston, R. Birtwhistle, K. Schultz
Queen’s University, Kingston, ON

Background
Physicians are called upon to lead health system transformation. However, most have minimal opportunities to learn leadership. In recognition of the change to CanMEDS ‘Manager’ role to ‘Leader’ (2015) this study explored curriculum available at the post-graduate level to develop leadership skills.

Method
A multiple methods design was used. An international literature search pertaining to leadership programs was conducted and educational content assessed for inclusion of leadership competencies embedded within a framework. Interviews were held with Canadian program directors to identify training available to residents, implementation factors and barriers.

Results
Internationally, motivation for implementing leadership programs was identified as satisfying required competencies to guide program development. Structurally, programs varied on how and when they were delivered, program intensity and which leadership competencies were being addressed.

In Canada, post-graduate programs were at various stages of considering and/or implementing leadership skills training for family medicine residents. An exploration into the CanMEDS Leader role (2015) indicated that the skills pertaining to leadership were not easily defined but most programs offered some type of leadership skills training.

Conclusion
Results identified that minimal leadership development programs were available. Most programs described were not relevant to family medicine and in the pilot stage with evaluation at the level of participant satisfaction.

All of the Canadian universities included in this study identified that leadership development for family medicine residents is important however there are several impediments to incorporating into current curriculum. Leadership concepts are considered ill-defined and post-graduate programs have little room to add to curriculum.

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Leadership training in healthcare:
A systematic review

T. Larsen¹, R. Beier-Holgersen²
¹Rudersdal Bigband, Copenhagen, Denmark; ²Hilleroed Hospital, Hilleroed, Denmark

Introduction
Worldwide medical supervisors find it difficult to get students to rise to the occasion as leaders of emergency teams. It is reported that many residents/rescuers feel unprepared to adopt the leadership role in emergencies.

Aim
How literature describes workable and operational training in leadership for the acute medical team-leader and to illuminate the understanding of leadership training in the medical setting.

Background
It is reported that many residents/rescuers feel unprepared to adopt the role as leader in emergencies. In spite of the knowledge acquired through 30 years of research, scientists are still asking for a solution for teaching workable leadership in healthcare. In order to measure and train leadership it must be defined.

Method
A systematic review was conducted in 2016 according to the PRISMA 2009 Checklist.

Findings
In the period 1986-2016 27 interventions studies were found, 25 unique researchers contributed. No targeted leadership training for doctors was found. The majority of the research projects described different types of behavioral markers, taxonomies and checklists.

Conclusions
There was not found any consistent and targeted training in leadership for young doctors. Through many years multiple taxonomies and assessment tools have been developed and failed to catch leadership training. The authors recommend that the training of leadership take another turn including the individual/personal feeling and perception of leadership handling anxiety, confidence, and chaos in an unpredictable and stressful situation.
Leadership training in healthcare: Experience, perceptions & emotions: A systematic review

T. Larsen¹, R. Beier-Holgersen²
¹Rudersdal Bigband, Copenhagen, Denmark; ²Hilleroed Hospital, Hilleroed, Denmark

Introduction
Leadership in emergencies is reported very important for outcome, patient safety and mortality. In a systematic review including both qualitative and quantitative intervention studies focused on training of leadership of junior doctors, was found no targeted training of leadership.

Aim
The objective for this systematic review was to include all studies to explore opinions, attitudes and views to explain why no targeted leadership-training had taken place the last thirty years.

Background
In a search for leadership-training was found taxonomies and measuring tools. The training was focused on training and execution of medical procedures or algorithms. Nevertheless, an explicitly stated and urgent recurring need for targeted leadership training of junior doctors was discovered.

Method
A systematic review was conducted in 2016 according to the PRISMA 2009 Checklist. Reviews and opinions were included.

Findings
27 original intervention studies and 13 reviews and opinions covering 1986-2016 were analyzed. Based on experience and described in the qualitative literature was found that the emergency situation is perceived by hospital staff with very strong emotions (an unpleasant, disturbing, fearful and panicked perception). Opinions described that the situation is complex, stressful, unpredictable, and chaotic caused by a variety of reasons.

Conclusions
Leadership and assuming the leadership is an individual and personal matter and a deliberate choice. The authors recommend that training of leadership shifts focus to include the individual perception of leadership addressing anxiety and confidence in a situation described as unpredictable, chaotic, and stressful.
Design and implementation of an anesthesia-specific OSCE as an assessment tool of a novel CBD foundations curriculum

P. Rao¹, M. Andrews², C. Hudson³, S. Crooks¹
¹The Ottawa Hospital, Ottawa, ON; ²University of Ottawa, Ottawa, ON; ³University of Ottawa Heart Institute, Ottawa, ON

Introduction
OSCEs (observed structured clinical examinations) are established assessment tools in medical education however they are not routinely used by Canadian Anesthesia training programs. There is scant literature evaluating the use of OSCEs in Anesthesia. A novel Competency by Design (CBD) Foundations curriculum was developed at the University of Ottawa. The purpose of this project was to determine if we could design and implement an OSCE for curriculum evaluation and resident assessment.

Methods
Stations were blueprinted to Foundations milestones and CanMEDS roles. Checklists were created based on existing literature and expert opinion, which then underwent a modified Delphi technique. Checklists were used to inform the Global Rating Scale. We trained consultant anesthesiologists as raters. Twenty residents completed the OSCE in 2015, thirteen in 2016.

Results
Gaps in performance were identified in both years. This information was fed back to the residency program and was used to modify the curriculum. Performance in the OSCE was variable due to timing, equipment familiarity, exam-manship, raters, and curriculum deficiencies. Residents felt it fairly represented their clinical responsibilities. Examiners described it as valuable in identifying performance gaps and adjusting their teaching and supervising strategies.

Conclusion
OSCEs are useful for evaluation of a novel CBD curriculum and as an assessment tool in Anesthesia. The primary limitation of this project was that due to small numbers we were unable to conduct statistical analysis to determine cut scores and identify discriminatory items.

From theory to practice: Developing a novel anesthesia non-technical skills assessment curriculum

S. Lee¹, R. Sharma², A. Ghavam-Rassoul²
¹Canadian Medical Protective Association, Ottawa, ON; ²University of Toronto, Toronto, ON

Introduction
The Anesthesia Non-Technical Skills (ANTS) framework assesses situation awareness, decision-making, task management, and team-working skills of anesthesiologists in the simulated environment. Practitioners are variably trained in using the framework, resulting in heterogeneous scoring and limited utility of the tool for teaching, and assessment of these vital skills. Our curriculum teaches anesthesia non-technical skills assessment, improving communication skills among anesthesiologists.

Methods
Kolb’s Experiential Learning Theory is a constructionist approach to learning through experience. Learners cycle through domains of abstract conceptualization, active experimentation, concrete experience, and reflective observation, which transforms learning experiences.

Results
We incorporate components of previously studied anesthesia non-technical skills programs, with Kolb’s Experiential Learning Theory. ‘Abstract conceptualization’ uses logic to manipulate a problem. The curriculum includes an e-module that focuses on abstract conceptualization by introducing learning theory, cognitive psychology and non-technical skills terminology. ‘Reflective observation’ appeals to understanding situations through observation. Learners observe and describe non-technical skills behaviours in video-clips of simulated scenarios delivered within the e-module. ‘Concrete experience’ involves navigating immediate human situations, emphasizing feeling over thinking, and reality over theory generation. ‘Active experimentation’ emphasizes practical action. A high-fidelity simulation experience addresses both of these domains by allowing participants to have concrete experiences assessing their own non-technical skills, and actively experiment scoring their colleagues using the ANTS framework.

Conclusion
Application of Kolb’s Experiential Learning Theory results in a robust curriculum for teaching practitioners to use the ANTS framework, and addresses a gap in non-technical skills education. Next steps involve implementation and dissemination to other postgraduate programs.
**What Works? Innovations in residency teaching and assessment / Pratiques efficaces : des innovations pour la formation et l’évaluation des résidents**

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**The use of write-ups in imparting clinical reasoning to medical students posted to a busy emergency department**

**S. Lee**  
Changi General Hospital, Singapore

**Introduction**

Good Bedside Teaching has always been the strength of this busy Emergency department. However, faculties find it increasingly challenging in teaching clinical reasoning and guiding learning process of medical students given the heavy service needs. We adopted the use of write-ups after every shift to help students crystallize history taking, clinical findings and interpretation as an effort to reinforce application knowledge, as many precious teaching moments become lost in the busy shop floor.

**Method**

After every 8 hour shift, students are to submit a brief write-up of 5-8 of the cases they have contact/clerked in the following format: Focused relevant history/physical findings/investigation/preliminary diagnosis/learning points and management. Each case should not exceed 250 words. The faculty then read through these write-ups, mark out teaching points including relevance of history, presence/absence/clustering of physical signs. Clinical reasoning is taught by posing relevant queries back to the students. Scripts are returned for digestion. A face-to-face discussion follows within next 2 days.

**Conclusion**

Students had favorable feedback for this new incentive. Faculties found that the first 2 write-ups to be unfocused & haphazard. However, when the intent of the exercise was understood, delivery improved. Students were most grateful for the chance to learn clinical reasoning and the ability of the exercise to bring to surface knowledge that they were ignorant of.

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**Using participatory action research to promote resident wellness**

A. Kuper¹, **U. Najeeb¹**, S. Coke¹, L. Devine¹, S. Edwards¹, M. Holmes¹, L. Richardson¹, P. Veinot²

¹University of Toronto, Toronto, ON; ²Wilson Centre, Toronto, ON

**Introduction**

Stress, burnout and depression are common among residents. These have important implications not only for trainees’ academic success and personal well-being but also for their ability to provide high-quality patient care. In recognition of this, there has been increased emphasis on fostering resident wellness in medical education.

**Method**

The goal was to create, implement and evaluate a resident-designed intervention to improve well-being of residents in the Core Internal Medicine (IM) and the PGY4 IM training programs at University of Toronto. Secondary objectives were to: 1) support PGY4 IM residents in conducting research that is meaningful to them; 2) expose PGY4 IM residents to education research. Within a Participatory Action Research framework, Faculty worked with eighteen trainees in PGY4IM program, leveraging their insights and experiences, to create real solutions to a recognized practical problem. One prominent problem identified by the PGY4s was a desire for electronic rotations and time-off scheduling. They believed that addressing this priority area would increase transparency and resident control, thus improving their well-being. Together as change agents, we developed a position statement, interviewed relevant stakeholders, and presented to key individuals and groups with decision-power, resulting in formal agreement by senior leaders in postgraduate medicine to take action to address these concerns.

**Conclusion**

Trainee involvement was crucial for identifying an innovation to improve resident wellness; faculty support for resident ideas through the research process facilitated this goal. While individually focused interventions such as wellness days may be valuable, interventions that address structural factors will likely have broader reach.
Implementation of a resident led ‘transition to discipline’ course for internal medicine

P. R. Laird, S. Koppikar, E. Kraut, N. Moulson, K. Stapleton, R. Veldhoen, D. Taylor
Queen’s University, Kingston, ON

Introduction
Residents arrive from different health care systems and countries. Many programs have prolonged non-clinical periods towards the end of medical school and new residents may go more than 6 months without clinical experience prior to beginning residency. There remains considerable variability in the responsibility given to senior medical students for managing ward issues overnight. This leads to variable skill and comfort level for new residents and a key challenge in the transition phase is ensuring junior residents develop the ability to apply skills and knowledge in their new context while providing care safely.

Methods
We developed a near-peer, resident led, weeklong orientation course for internal medicine residents using a flipped classroom approach with a mixture of simulation, lectures, and small group cases. Pre-course modules covered key clinical topics, maximizing in-house time available to apply the material in the context of our institution. The in-class component focussed on small group cases and simulation sessions, providing junior residents opportunities to practice common ward and ‘on-call’ presentations.

Feedback from residents was collected after each session and at the end of the course. The data will be analyzed using a mixed-methods approach, including content analysis for narrative data and quantitative methods for Likert data.

Conclusion/Implications
Informal feedback has been highly favourable. Our next steps include a capstone simulation session 1-2 blocks after orientation as well as further integration with the academic half-day curriculum to promote skill retention using spaced repetition. This forum also provides an opportunity for assessment of resident teaching competencies.
Choosing a career: A medical student initiative to enhance career planning in collaboration with Doctors Manitoba and undergraduate medical education

T. Khaper1, E. Burnett1, S. Alex1, D. Paradis1, S. D. Hodgson1, A. Abraham2, J. Horton1, M. Delisle1, M. Maruca3, M. Chan1, D. Wirtzfeld1
1University of Manitoba, Winnipeg, MB; 2Industrial Rubber Supply/Transfab Industries, Winnipeg, MB; 3Doctors Manitoba, Winnipeg, MB

Introduction
Medical students often feel unsure of where to look for resources on career choice. Pre-existing University of Manitoba UGME career-planning resources are usually focused on third and fourth year medical students and are under-resourced. As part of a capstone leadership selective, we explore a collaborative approach between UGME, the resident body, and Doctors Manitoba to develop a career-planning curriculum, which would in turn develop a student body with a greater connection to Doctors Manitoba.

Methods
An assessment of pre-existing career planning resources offered to medical students across Canada was conducted. Based on this needs assessment and further consultation, we designed a career planning curriculum for students in the first two years of medical school. The strategy includes: 1) a guidebook of resources that navigate students through career planning, 2) a checklist highlighting career planning objectives to achieve with their pre-existing Doctors Manitoba physician mentor, 3) a series of interactive workshops teaching career planning, and 4) online quizzes on issues faced by Doctors Manitoba to improve awareness of the current work environment. A mixed-method design using attendance at workshops, quantitative and qualitative surveys and engagement with the quizzes was developed to measure improvement.

Conclusion
Initial feedback from UGME, residents and Doctors Manitoba were highly favourable, granting this project the resources to carry it forward. We are interested to see the impact of this initiative on student’s overall sense of preparedness for career choice and the development of a longitudinal relationship between medical students, residents and Doctors Manitoba.

The visual inventory: A mind map of IR’s tools of the trade

F. Toonsi1, W. Kattan2, L. Boucher2
1King Abdulaziz University, Jeddah, QC; 2McGill University, Montreal, QC

Introduction
Interventional radiology (IR) is a procedure-based specialty, with a rich array of available devices and tools. The expert interventionist intuitively knows how to select the tool best suited for a specific purpose, and how to think on his feet, change course, and select another instrument to solve a particular problem.

In contrast, interventional radiology fellows and residents often have difficulty conceptualizing all their options and developing an approach to informed decision-making and reasoning when selecting their tools.

Radiology trainees are often visual learners, and mind maps allow for the display of complex information in a simple accessible way. They can serve both as a self-learning tool, and an aid for teachers seeking to make their expertise explicit.

Methods
A large mind map of available IR devices is created, and displayed in our interventional radiology suites. It displays the broad categories of devices under general headings, enables the comparison of similar tools with subtle differences, and highlights the distinguishing features and most important uses of each device. Teachers and trainees are encouraged to use it and verbal and written feedback about its usefulness and ease of use is sought.

Conclusion/Implication
We believe that our mind map provides a quick yet effective reference for both trainees and teachers that enables the broadening of the IR trainees’ repertoire of “differential tools”, not unlike the medical students’ ever-broadening differential diagnosis. This is an essential step in helping trainees better make informed tool selections and become experts in their fields.
Refining EPAs: Incorporating resident feedback on EPA content into CBME-based curricular reform

M. H. Andrew, M. Hussain, R. Egan, T. Beesley
Queen’s University, Kingston, ON

Introduction
Assessment within competency-based medical education (CBME) demands that residents show entrustable competence across pre-established skills and activities. However, in subspecialties, such as geriatric psychiatry, the number and breadth of possibilities for skills necessary for future practice is greater than a 1-2 year curriculum can encompass. It is a challenge to develop EPAs with assessments specific enough to assess essential training, but broad enough to allow for exploration across areas of interest. Queen’s, as the first University to attempt comprehensive EPA development within geriatric psychiatry, is in a unique position to report on this process.

Methods
Taking a self-study lens, but not utilizing formal methodologies, we have collected anecdotal qualitative feedback from faculty, including program directors and recent graduates, within our subspecialty.

Conclusions / Implications
Our work suggests the need to modify traditional development of EPAs and assessment tools for subspecialties. Residents can generally be entrusted across a wide range of activities from the outset of subspecialty training. Our challenge, therefore, is to mass-customize our CBME implementation and assess refinement. Similar subspecialties should include residents and recent graduates as partners in assessment by:

1. Adopting a quality improvement (QI) approach to iterative improvement of curriculum; dynamically adjusting to demands in the field, and opportunities in training, as identified by recent graduates across an array of practice niches.

2. We envision use of generalized entrustment scales, with requirements for extensive, prompted narrative feedback, allowing for bounded (yet broad) EPA assessment across contexts, and providing quality data to inform Committee-level entrustment decisions.

Rural-stream general surgery residency training incorporated within an urban-based program

K. Fathimani¹, P. Miles², D. E. Schiller¹
¹University of Alberta, Edmonton, AB; ²Queen Elizabeth II Hospital, Grande Prairie, AB

Introduction
There is a shortage of General Surgeons working in Canadian rural centers. The majority of General Surgery residency training occurs in urban-based teaching hospitals. There is variable, sometimes minimal, exposure to rural-based populations, hospitals, and patients. Therefore, residents interested in a career as a rural General Surgeon do not have adequate exposure to this career opportunity.

Methods
A Rural-Stream training pathway has been incorporated into the General Surgery residency program at the University of Alberta. The first 2-years of the residency program are traditional training in Edmonton-based teaching hospitals to learn the foundations of Surgery. Residents interested in an eventual career as a General Surgeon in a rural setting, are selected to continue training in the Rural-Stream General Surgery pathway. These residents are integrated into Grande Prairie, Alberta community to complete their 3rd and majority of 4th years of residency training. Supervision, instruction, assessment, and evaluation are provided by dedicated Grande Prairie General Surgeons familiar with rural practice. Training for endoscopy, ambulatory care clinics, and both elective and emergency surgeries all occurs in Grande Prairie. Rural-Stream residents continue participation in academic half-day sessions by Tele-Health video conference system. They travel to Edmonton twice per academic year for mandatory simulation-based Surgery courses. The Rural-Stream residents rejoin traditional urban-based residents for the ultimate year of General Surgery residency training.

Conclusion
Rural-stream General Surgery training is a novel approach to integrate interested residents in a small community and prepare them for an eventual career as a Rural General Surgeon.
Exploring the lived experience of implementing CBME in emergency medicine: Lessons learned

Queen’s University, Kingston, ON

Introduction
Effective adoption of Competency Based Medical Education (CBME) at the national level depends on systematic efforts to evaluate the strengths and challenges of early implementation efforts. The Emergency Medicine (EM) training program at Queen’s University is implementing CBME on July 1, 2017. This presents an opportunity to learn key lessons about what works – and what doesn’t work – regarding program implementation. A detailed description of program components and local context are needed to compare planned versus enacted implementation and to make decisions about the generalizability of program feedback at both institutional and national levels.

Method
We will use a case-study methodology to explore the lived experience of implementing CBME in EM at Queen’s. We will also use Rapid Cycle Evaluation as an approach to capturing and feeding-back timely evidence of behavioural change. Our proposed timeline for the evaluation is 12 months. Data collection will involve multiple sources and methods, including: field observations, document analysis, and interviews with key stakeholders: residents, faculty, program director, CBME lead, academic advisors, competence committee members, and members of the residency program committee. Qualitative findings will be triangulated with available quantitative electronic assessment data.

Conclusion
Exploring the lived experience of implementing CBME from the perspectives of diverse stakeholders will provide early insight regarding the strengths and challenges of operationalizing CBME on the ground. Our findings will inform local implementation and higher-level national planning by the Canadian EM Specialty Committee and other programs who will be implementing CBME in the near future.
A map of the curriculum in any residency training program can facilitate the alignment between what is taught, how it is taught, and which assessment methods are being used to determine whether a resident is progressing along the competency continuum. Specifically, curriculum mapping as a process can assist with providing a longitudinal examination of residents’ learning experiences and identify whether the curriculum is aligned to meet its intended purpose.

The evidence shows that curriculum mapping can lead to: a roadmap for residents and faculty regarding the CanMEDS competencies and the pathways toward achieving them; establishing important patterns and relationships for the purposes of curriculum management, analysis and reporting; and, the development of individualized learning and remediation plans.

We used a number of approaches to effectively support residency training programs with undertaking the mapping of a competency-based curriculum. For example, a half-day faculty development workshop was conducted with program directors and curriculum leads to discuss and apply mapping strategies. Dedicated faculty resources were mobilized across programs to lead the planning and implementation of CBME such as mapping the curriculum. Medical educators also provided one-on-one consultations with program leads to develop effective mapping strategies and building capacity among faculty and residents.

Curriculum mapping has the potential to facilitate change management in the transition to CBME. Important lessons and strategies can be shared among residency training programs in terms of differences with respect to program size, number of residents and faculty, readiness for CBME implementation, and compliance with accreditation requirements.
Competency-based education /  
L’approche par compétences en formation médicale

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**Counting time or making time count: Evaluation of the quality of workplace-based and summative CBME assessment feedback in general internal medicine**

Queen’s University, Kingston, ON

**Background/Objective**  
Competency-based medical education (CBME) focuses on assessing competence rather than time-based entrustment. In Canada, Queen’s University will be the first to implement CBME in all residency programs, hence, General Internal Medicine (GIM) is transitioning to workplace-based assessments (WBAs). The purpose of this study was to determine if customized WBAs provided data necessary for recommendations for or against resident progression.

**Methods**  
Utilizing a mixed method triangulated design and purposive sampling, qualitative data was collected from four GIM resident interviews, one physician focus group (n=7), and written feedback from 328 assessments. Quantitative data included assessment scores from 18 different assessment tools for seven residents. Thematic analysis, descriptive statistics, and cross-tabulations assisted in data analysis.

**Results**  
GIM assessment tools should emphasis targeted narrative feedback that is actionable and specific; enhance residents and faculties ability to provide quality feedback; provide explicit role identification for initiating and completing assessments; and ensure summative and formative feedback are valued. Quantitative analysis supported qualitative findings. Only 26% of WBAs and end-of-rotation assessments included written feedback. Of these, WBAs provided only 2.5% more actionable feedback than traditional tools. Moreover, there was little difference between WBAs (M=85%, SD=13.12%) and end-of-rotation scores (M=82%, SD=8.01).

**Conclusions**  
This study highlights the gap between the importance of quality narrative feedback and the dearth of this in practice. Our findings suggest a need for faculty development and tool revision to enhance the value of both quantitative and qualitative feedback. Specific suggestions include less extensive assessment items, role clarification, and enhanced faculty development.

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**Faculty perspectives on the transition to competency-based medical education in anesthesia: An application of diffusion of innovations theory**

*C. Shearer*, M. Casey, P. Livingston, A. MacLeod  
Dalhousie University, Halifax, NS

**Background**  
Dalhousie Anesthesia’s new competency-based curriculum presents a unique opportunity to explore faculty experiences in transitioning to CBME. We have begun an ethnographic study to understand the evolving culture of this educational context, using Rogers’ Diffusion of Innovations (DOI) theory as a framework for describing and explaining the process through which CBME is adopted by faculty.

**Method**  
At the onset of CBME implementation, a round of in-depth individual interviews (N = 12) was conducted with faculty members at varying stages of innovation adoption (i.e., innovators/early adopters, early/late majority, and laggards). Interview transcripts were analyzed thematically in relation to factors that, according to DOI, promote innovation diffusion.

**Results**  
Relative advantage featured heavily in all interviews. Early adopters were confident that CBME offers improvement over the existing curriculum, while laggards viewed the transition as “change for the sake of change”. CBME was incompatible with the values of laggards, who did not view educational design as particularly important for resident success. Trialability was reflected in comments regarding the extent of change required by CBME. Early/late majority described more cyclical change, while laggards characterized the shift as a “complete overhaul”. Observable results were a concern for all but innovators and early adopters who expressed confidence that CBME would lead to improved learner experiences. Laggards believed observable results would take many years to emerge if at all.

**Conclusion**  
DOI is a useful framework for examining the transition to CBME. Future directions include subsequent interviews to explore factors that may promote successful faculty adoption of CBME.
Remediation in competency-based medical education: Anticipated policy modifications

M. Bosma, F. A. Bergin, C. Shearer, J. Sargeant, A. Warren
Dalhousie University; Halifax, NS

Background
Policies to guide remediation of postgraduate learner deficiencies may require significant modification to support competency-based medical education (CBME). This study seeks to summarize the opinions of key informants in remediation from across Canada to help identify what those modifications should optimally be.

Methods
We conducted interviews with key informants in remediation from 13 English medical schools, identified by their respective postgraduate deans. Transcripts were analyzed for content related to policy modifications anticipated to be required in light of CBME. Content phrases were then examined and grouped into themes by team consensus.

Results
Nearly all key informants acknowledged that existing remediation policies would require modification, though they varied widely in their preparedness for the transition to CBME, and few had begun the process. Those who had begun envisioning policy changes were remarkably consistent in their discussion of anticipated modifications. These included: changes to accommodate the new language and infrastructure of CBME (e.g., learning experience instead of rotation); changes in remediation triggers (e.g., not failure but a flat learning trajectory); and changes in specific time-related references. On other points, including the setting of maximum numbers of remediations and the decentralization of remediation, there were more differences.

Conclusions
Based on key informants’ opinions, anticipated changes required in remediation policy include: changes to accommodate the language of CBME, changes to remediation triggers, and changes to time specific references. Others include the need for an educational advisory board; a dual policy system; specified coaching; de-centralizing; flexibility; limitations of time; and co-development of assessment policy.

Varying perspectives of CBME implementation and change

L. Flynn, D. Stockley, D. Dagnone, A. Hastings, E. Van Melle
Queen’s University, Kingston, ON

Introduction
Competency Based Medical Education (CBME) represents a paradigm shift from the traditional time and process based resident training. Hall and Hord (2015) describe this shift as encompassing three phases: Adopting, Implementing and Sustaining. Accordingly, the second phase of our program evaluation at Queen’s University is guided by the question “How are our programs implementing CBME?”

Methods
We are guided by the Concerns Based Adoption Model (CBAM). CBAM provides an overall framework and perspective on the process of change. In this second phase of implementation we used the Levels of Use (LoU) Interview protocols. LoU is an interview protocol designed to determine the extent to which staff members are implementing a program and their level of expertise with it. We interviewed 39 individuals in year 1, and revisited them in year 2.

Results
A preliminary analysis of interviews from year one resulted in changes to our implementation plan and the creation of CBME leads who have dedicated time to focus on CBME implementation. Our data suggests that there has been an attitudinal change related to the CBME workshops led by the CBME leadership team as program directors have become more engaged with the change process. Reactions to these workshops also suggest that program directors value the community building that has occurred across programs.

Implications
Our approach to CBME has resulted in the creation of new positions, as well as changes in attitudes and behaviours across programs. Use of the LoU allows us to track these changes across each phase of implementation.
Competency-based education / L’approche par compétences en formation médicale

Bringing order to chaos: The diverse approaches of educational consultants supporting the development and implementation of CBME at Queen’s

M. V. Bouchard, T. Hanmore, E. Pero, C. Rogoza, M. McDonald, L. A. McEwen
Queen’s University, Kingston, ON

Introduction
In July 2017, all residents entering the 29 specialty programs at Queen’s University will be integrated into CBME residency programs. This unique institutional approach is the first of its kind in Canada, and the resources required for a successful transformation of this magnitude are considerable (e.g., curriculum reform, preparation of learners, faculty, and staff, educational technology implementation). Programs recognized the need for additional support to alleviate the added resource burden and ensure continuous program improvement was guided by sound educational methods. In July 2015, the first CBME Educational Consultant (EC) was hired to work with 2 programs. By the spring of 2017, that number had grown to 10 consultants, working with 24 specialties and sub-specialties. This research explores the varying approaches adopted by the five ECs first hired at Queen’s, as they supported the development and implementation of CBME.

Methods
Using a grounded theory approach, a cross-case analysis was conducted to explore the practical processes and successful strategies adopted by a sub-set of 5 ECs working across 13 specialties and sub-specialties programs.

Results
Although the end goals are the same, initial analyses indicate that processes and strategies vary widely among consultants and across programs.

Conclusion
Although Queen’s was unique in its institution-wide accelerated path to CBME, national cohorts are transitioning to the Royal College’s Competency By Design curriculum model over the coming years while simultaneously maintaining program function. In recognizing the need for educationally sound approaches, ECs offer the expertise to support program re-development, implementation, and on-going improvement.
Competency-based education / L’approche par compétences en formation médicale

Competency based learning of pediatric musculoskeletal radiographs in emergency medicine

M. Lee1, M. V. Pusic2, M. Pecaric3, J. Stimec1, B. Carrière4, A. C. Dixon5, K. Boutis1
1The Hospital for Sick Children, Toronto, ON; 2New York University School of Medicine, New York, NY; 3Contrail Consulting, Toronto, ON; 4Université de Montreal, QC; 5University of Alberta, Edmonton, AB

Introduction
As residency programs transition from time-based to performance-based outcomes, studies are required to characterize the learning experience for residents. We implemented an innovative on-line medical image interpretation system with a performance-based competency end-point and examined learning outcomes.

Methods
We selected pediatric musculoskeletal (MSK) radiographs, a knowledge gap for front line physicians. There were seven radiograph modules, each containing 200-400 cases (https://imagesim.com/course-information/demo/). Thirty-five pediatric emergency medicine fellows participated for 12 months in this cross-sectional study. Participants did cases until they reached competency, defined as at least 80% accuracy, sensitivity and specificity. We report the median number of cases to achieve competency, mean time on case, and mean change in accuracy.

Results
Overall, median number of cases to competency was 118 (min 56, max 756); mean time on case was 35.8 (SD 0.45) seconds; mean increase in accuracy was 13% [95% CI 10, 15]).

<table>
<thead>
<tr>
<th>Module</th>
<th>Competency Achieved (% of participating fellows)</th>
<th>Median number of cases to competency (min, max)*</th>
<th>Mean increase in accuracy (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skull</td>
<td>88</td>
<td>67 (56, 129)</td>
<td>13</td>
</tr>
<tr>
<td>Shoulder</td>
<td>100</td>
<td>60 (55, 172)</td>
<td>20</td>
</tr>
<tr>
<td>Elbow</td>
<td>85</td>
<td>66 (55, 214)</td>
<td>10</td>
</tr>
<tr>
<td>Forearm/Hand</td>
<td>85</td>
<td>63 (56, 214)</td>
<td>10</td>
</tr>
<tr>
<td>Pelvis/Femur</td>
<td>100</td>
<td>68 (57, 121)</td>
<td>10</td>
</tr>
<tr>
<td>Knee/Tib-Fib</td>
<td>89</td>
<td>93 (72, 213)</td>
<td>16</td>
</tr>
<tr>
<td>Ankle/Foot</td>
<td>89</td>
<td>410 (128, 756)</td>
<td>15</td>
</tr>
</tbody>
</table>

*p-value<0.001

Conclusions
Competency was achieved on average in about 120 cases or one hour per module, except for the ankle case-set. Accuracy increased to a competency standard for most participants. Future research could explore the effectiveness of this system on patient outcomes.

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Competency-based education / 
L’approche par compétences en formation médicale

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Direct observation on the internal medicine clinical teaching unit: A qualitative study exploring perceptions of trainees and attending physicians

S. Gauthier¹, L. Melvin², M. Mylopoulos², N. Abdullah²
¹Queens University, Kingston, ON; ²University of Toronto, Toronto, ON

Background
Direct observation of trainee performance forms the foundation of assessment and learning in competency based medical education (CBME). Despite its importance, direct observation in residency has been described as inadequate. Internal medicine (IM) clinical teaching units (CTUs) represent unique and important clinical teaching environments that are ripe with opportunity to capitalize on direct observation. In this study we explored the culture and perceptions of direct observation on CTUs to inform the transition to CBME.

Methods
We interviewed internal medicine attendings (n=8) and residents (n=9) at the University of Toronto, purposively sampled for diversity. Using a constructivist grounded theory approach, constant comparative analysis was performed to develop a framework to understand the culture and perceptions of direct observation on the CTU.

Results
Preconceived notions of narrowly defined ‘direct observation’ precluded participants from identifying the significant amount of direct observation already occurring on CTUs. The majority of direct observation is informal and under-recognized by attendings and residents, such as direct observation of clinical reasoning. Participants expressed varying degrees of skepticism towards the value and feasibility of increasing direct observation. Barriers to direct observation identified include time constraints, loss of trainee autonomy, trainee anxiety, and lack of observer credibility.

Conclusions
Our results suggest a reframing of ‘direct observation’ for residents and attendings in non-procedurally based specialties. We identify a number of opportunities and barriers related to direct observation on the CTUs. These findings may help training programs transition to CBME by improving the process of direct observation and enhancing assessment and learning.

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How do clinical teaching teams implement curriculum change: An interview study

L. Bank¹, M. Jippes², S. mi. van Luijk³, C. den Rooijen⁴, A. Scherpbier³, F. Scheele¹
¹OLVG, Amsterdam, Netherlands; ²Erasmus MC, Rotterdam, Netherlands; ³Maastricht University Medical Center, Maastricht, Netherlands; ⁴The Royal Dutch Medical Association (KNMG), Utrecht, Netherlands

Introduction
Previous research has shown that program directors are ‘in the lead’ in regards to the implementation of curriculum changes in PGME. However, in these change processes there is little guidance from an appropriate change model. It is unclear how clinical teaching teams and program directors in particular deal with curriculum changes they are faces with. Given the substantial amount of time, energy and resources invested as well as the need to let the innovation reach its full potential it is crucial to get insight in these processes.

Methods
A semi-structured interview was conducted with 6 clinical teaching team in the Netherlands from November 2016 to April 2017. Of each team the program director, a clinical staff member and a trainee participated. Using grounded theory, interviews were anonymized, transcribed and open coded using MaxQDA. Emerging themes were discussed in the research team.

Preliminary results and conclusion
Results clearly show the program director holds, and gets from the other team members, the responsibility for the success of the curriculum change, however lacks the support from implementation strategies. Furthermore, managing change asks a different set of skills which program directors, as well as the other team members, not necessarily have. This leads to a wide diversity of tactics to implement curriculum change with mixed success. Additionally, it seems that, especially in case of a difficult change process, organizational culture has a negative impact on the receptiveness to change of team members.
Multi-program development of a quality improvement (QI) curriculum for residents and faculty

E. A. Yacyshyn, S. Auvigne, R. Yeung, L. Keenan, K. Aziz
University of Alberta, Edmonton, AB

Introduction
Resident training in Quality Improvement (QI) is required by the Royal College of Physicians and Surgeons of Canada. The EPIQ workshop organizes QI using basic QI principles through constructivist methodologies including simulation-based and collaborative learning steps. Our goal is to integrate the workshop into the first year of postgraduate medical education for trainees and supervisors across all programs at the University of Alberta.

Methods
Over 600 residents and 60 faculty will be trained in the 2017-18 academic year. The simulation-based, collaborative learning curriculum meets 3 objectives:

To improve residents’ knowledge of QI practices via 5 on-line modules and a 4-hour EPIQ workshop using evidence-based tools. We will assess residents’ knowledge through validated knowledge test.

To increase residents’ confidence in developing QI projects within a collaborative team via 3 supervised team meetings to develop aim and change statements and QI plan. A Delphi process will create a confidence questionnaire.

To explore the perceptions of residents and faculty using focus groups before and after training; to ascertain barriers and enablers with respect to QI activities, to enhance future workshop facilitation, coaching, and mentorship.

Results
By the end of the course, participants will have an evidence-based statement of their aim and how it would be executed (plan-do-study-act cycle). This will be presented to their clinical teams for consideration of completing in real-life.

Conclusion
Integrating on-line and team-based QI learning and reflection for residents and faculty, and engaging clinical teams in evaluating the output brings new dimensions to QI training.

Evaluation of reaction and learning in residents taking a simulation-based quality improvement (QI) workshop

University of Alberta, Edmonton, AB

Introduction
To meet the required need of QI training during residency, the PGME faculty at the University of Alberta have developed a curriculum that targets residents and faculty using both on-line and simulation-based, collaborative learning methodologies. Our goal is to (a) assess both reaction and learning in residents and faculty following an Evidence-based Practice for Improving Quality (EPIQ) workshop. Trainees and professionals have 3 workshop objectives: work as a team, use evidence-based QI tools, and outline a QI plan.

Methods
Over 600 residents and 60 faculty from all programs will be approached for consent to participate. We will use a mixed methods pre- and post-intervention observational design. Reaction will be assessed using focus group discussion (FDG) before and after training as well as confidence questionnaires. Question validity will be reinforced by a modified Delphi technique. FDG will be transcribed, coded and sorted thematically. A bank of questions will be administered pre- and post-workshop to assess learning and validated by item analysis.

Results
Qualitative results will be used to identify enablers and barriers to QI activities performed by residents and faculty. Quantitative results will be used to evaluated confidence and learning. All results will be used to validate instruments and improve subsequent iterations of the curriculum to use a QI process on the QI curriculum.

Conclusion
A mixed methods pre- and post-workshop design facilitates tool validation, evaluation of participants, and improvements in curriculum design.
Evaluating Canadian medical students’ interest in and readiness for learning and practicing high-value care: Preparing for change

N. Z. Khamis, A. Sidiqi, M. Maclure, G. K. Blair
University of British Columbia, Vancouver, BC

Introduction
The CanMEDS framework was recently updated to include high-value care and resource stewardship as a core competency. This principle, which encourages appropriate and judicious use of diagnostic and therapeutic actions, promotes patient safety and fosters financial sustainability. Whether current undergraduate and residency training programs effectively educate trainees on high-value care remains unknown. We aim to test: 1) medical students’ current knowledge around resource stewardship; 2) the importance students place on high-value care education; 3) the ideal format to train students on this subject. Results will guide appropriate curriculum adjustments.

Methods
A validated and research ethics-approved 21-item online survey was piloted on 43 medical students and subsequently distributed to all medical students at the University of British Columbia via an electronic mailing list. The survey was voluntary. Student perspectives were analysed using descriptive statistics.

Results
There were 88 survey responses. The majority of students (93%) agreed or strongly agreed on the importance of resource stewardship in clinical decision-making; however, all respondents felt that their training has inadequately prepared them on this topic, and only 28% felt comfortable discussing costs of care and overtreatment with patients. Discussing high-value care with resident and staff supervisors was reported by 86% of clinical clerks to be an effective and preferred teaching strategy.

Conclusion
Participants value resource stewardship education, but lack adequate training on the subject. Voluntary response bias may have confounded these results. Formally training residents in high-value care may enable them to transfer this knowledge to clinical clerks, and requires further investigation.

Continuous quality improvement in medical education

A. Saxena, L. Desanghere
University of Saskatchewan, Saskatoon, SK

Background
Continuous quality improvement (CQI) is being increasingly used in medical education (ME) and is reflected in accreditation processes. Residency programs address deficiencies or sustain improvements through multiple processes, however a comprehensive approach is generally lacking. Perceptions of program directors (PDs) and program administrative assistants (PAAs) on operationalizing quality in ME at the University of Saskatchewan were explored with the intent to inform quality improvement work.

Methods
10 PDs and 20 PAAs completed a survey on structural and functional aspects of CQI programs and their experience with CQI efforts. Descriptive statistics and ANOVAs were used to explore group differences.

Results
60% of PDs (versus 5% of PAAs) had previously taken part in a CQI initiative. Both groups rated structural aspects of CQI as important (p’s<.05), with PAAs placing more importance on CQI involving everyone in the organization, reducing wastage of resources, and sound statistical analysis. Perceptions also differed on the importance of different characteristics contributing to the quality of resident education, again with PAAs rating the importance of several factors as higher than that of PDs (e.g., faculty credentials, curriculum, commitments to research; p’s<.05).

Conclusions
Although many PDs and PAAs are aware of CQI components, most have little or no experience in a systemic approach to CQI in ME. These results were used to highlight awareness of CQI in ME and assess readiness for involvement in CQI initiatives. The findings continue to inform a systemic approach to CQI in residency training programs at the University of Saskatchewan.
Moving forward after cancer: Interspecialty survivorship residency training program

J. J. Sisler¹, E. Ozokwelu², S. Mowat¹, A. Ens¹, G. Kim³, J. Sussman⁴, S. Mukherjee⁴, V. Zwicker³, G. Konrad¹, R. Loewen², J. Gingerich²
¹University of Manitoba, Winnipeg, MB; ²CancerCare Manitoba, Winnipeg, MB; ³Cancer Care Ontario, Toronto, ON; ⁴Juravinski Cancer Centre, Hamilton, ON

Introduction
A major barrier to the successful coordination of care for cancer survivors is the knowledge and communication gap between primary care providers and oncologists. To address this gap, a new educational curriculum was developed to test the implementation of a joint survivorship training program targeting family medicine and oncology residents in Canada.

Methods
A national advisory committee was established to assist in the development of the curriculum program. In accordance with Kern’s Six-Step Approach to Curriculum Design, needs assessment surveys, focus groups, and expert consultations were conducted to inform the learning objectives, content, and format of the curriculum. A blended learning approach was applied to incorporate three distinct components: online modules; an in-person workshop with case-based learning; and an optional clinical learning experience. Post-workshop evaluations were used to collect feedback from trainees on the curriculum.

Results
From 2015-2016, a total of 257 family medicine and oncology residents completed the training across nine sites in Manitoba and Ontario. Based on survey evaluations, 96.4% of participating residents felt that the session met their expectations. On an average rated scale of zero to 2, residents also felt positively about their ability to: refer patients to local resources (1.95), collaborate with colleagues in managing survivors’ medical needs (1.72), understand the difference between primary and specialist care roles (1.73), and describe common concerns of cancer survivors (1.76).

Conclusion
This intervention demonstrates the benefits of interspecialty survivorship education among primary care and oncology trainees. Potential next steps include adaptation and accreditation for practicing physicians.

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The near-peer residency mentorship program: An innovation in collaborative education

A. Lefkowitz, A. Saltman, A. Page, H. McDonald Blumer
University of Toronto, Toronto, ON

Introduction
Many challenges face trainees embarking on an Internal Medicine residency training program, including new roles and responsibilities, decisions that may impact future training and career choices, and often, a new city and work environment. Near-peer mentoring has been shown to provide support and foster collaborative relationships, but has not yet been described amongst Internal Medicine residents. Our program endeavoured to provide near-peer mentors experience in role modeling non-Medical Expert CanMEDS roles, including communicator, collaborator, and professional, to their mentees.

Method
Of 70 eligible residents entering the University of Toronto Internal Medicine residency program, 53 enrolled as mentees. Mentees were matched according to their educational background and planned career path (if known) with near-peer mentors in their second or third year of residency. Each dyad received an introductory email, but thereafter communicated as needed at a frequency of their choosing. Volunteer mentors were offered the opportunity to attend a mentorship orientation session.

Conclusion
Most dyads met several times throughout the year, with many meeting more frequently. Mentees reported receiving advice on rotation selection and finding research supervisors, as well as support related to on-call shifts, new rotations, and team dynamics. Based on participants’ feedback, future iterations will include a “resource toolkit”, events to facilitate in-person meetings between mentor-mentee dyads, and pairing dyads according to base hospital assignment. The Near-Peer Mentorship program is a low-cost initiative that is easily adaptable across specialties and programs.

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Leadership training in healthcare: A course description

T. Larsen¹, R. Beier-Holgersen²
¹Rudersdal Bigband, Copenhagen, Denmark; ²Hilleroed Hospital, Hilleroed, Denmark

Background
The emergency situation is perceived by hospital staff with very strong emotions (an unpleasant, disturbing, fearful and panicked perception). Training leadership has through decades been connected to training of medical procedures and algorithms. A course focusing on leadership-training is presented.

Aim
Presenting a proposal to a workable targeted leadership training for junior doctors.

Method
The individual performance as leader, mainly non-verbal competencies, is focused. The training does not take place in a clinical context but in a musical setting. To demonstrate the similarity between the team-leader and a musical conductor a short introduction to acute clinical situations and a concert is presented. The importance of being able to assume leadership as a doctor is stated. Then a conductor explains how he uses body language and eye-contact to control and lead members in the orchestra. Afterwards two exercises from the musical world trains the students in leadership.

Results
38 medical students or residents and 22 senior nurses participated in the courses. All groups rated the course favorably. Summary of innovation: All participants found that the training was very useful in leading in acute medical situations. Instruction of a conductor using musical exercises was very interesting and gave the participants a perspective to the use of body language and eye contact in a different and individual way. The training resulted in further self-awareness by the participants.

Conclusion
It is possible advantageously to use the principles of conducting an orchestra in training of leadership, cooperation and professional behavior in junior doctors.
Resident confidential: Utilizing peer support discussion groups to build resident resilience and prevent burnout

M. J. Leung
Queen’s University, Kingston, ON

Introduction
Resident physicians are at high risk of developing burnout - a syndrome with three dimensions: emotional exhaustion, depersonalization and reduced personal accomplishment. Burnout affects between 27-78% of medical professionals and results in negative patient outcomes. In response to this, the Royal College CanMEDS framework, and Canadian Medical Association (CMA) have recognised physician wellness as a priority for professional development.

Interventions such as debriefing or facilitated support groups are a source of valued emotional support during residency. In addition, they promote self-awareness and improve professional performance. Queen’s University Internal Medicine introduced “Resident Confidential”: a peer-support program to promote community, combat burnout, and develop resiliency during a stressful residency program.

Methods
Resident Confidential sessions were open to residents of the Queen’s University Core Internal Medicine program (n=67). Seventeen participants attended during the 2016-2017 year. The program was assessed using a composite scale monitoring burnout, perceived stress, and resilience, along with qualitative feedback for program improvement.

Results
Overall, residents appreciated sharing their opinions in a safe, confidential space. Feedback from participants was positive and group discussion helped identify and validate common themes leading to burnout. Quantitative data measuring levels of burnout, perceived stress and resilience for program participants is ongoing.

Conclusion
Resident Confidential is a beneficial initiative for residents within the Queen’s Internal Medicine program. Having protected curricular time for such sessions may increase attendance. Feedback will inform future development. Ultimately, Resident Confidential can be adapted to other training programs locally and nationally.
Creating an educational quality improvement program for radiation oncology residents at McGill University

C. Pembroke, J. Alfieri, A. Biron, T. Hijal, C. Freeman
McGill University, Montreal, QC

Purpose
The Royal College of Physicians and Surgeons of Canada mandated that Quality Improvement (QI) should be taught and the competencies assessed in all post-graduate residency programs. To our knowledge, this is the first attempt to introduce QI professional skills within the field of radiation oncology.

Methods
A QI team consisting of a clinical fellow, 3 staff physicians and an expert in QI methodology was created within the Department of Radiation Oncology. QI teaching takes place in a longitudinal manner with a mandatory curriculum divided into foundation, and intermediate and advanced competencies. Teaching, consisting of didactic lectures, practical workshops and self-directed online modules, is delivered during two academic half days. During the intermediate years (PGY2-4), each resident will become well versed in QI tools and methodology by completing a QI project. At the end of the academic year, a QI expert will be invited to teach at a QI day where each resident will present their project and merit prizes awarded. Formal assessments will consist of a combination of self-assessment, QI knowledge based assessments, and balanced score cards.

Results
The program is being piloted in the academic year 2016/17 and we are currently meeting our pre-defined milestones. The program will be formally evaluated and adapted to ensure sustainability.

Conclusion
The QI skills gained will enable the residents to maintain the highest standards throughout their professional careers. A robust, interactive, sustainable curriculum will ensure that this is delivered effectively within radiation oncology and act as a model for all residency programs.

Competency based remediation and accommodation

S. Glover Takahashi
University of Toronto, Toronto, ON

Background
Managing resident needs incompetency based medical education (CBME) is increasingly complex. Requests for accommodation in CBME are rising, wellness needs are increasingly complicated & defining remediation is more challenging. This retrospective study identifies the ‘real’ problems to manage accommodation, wellness and remediation of residents. This multi-method study looks at almost 100 resident cases for common issues and trends in managing accommodation, wellness and remediation of residents.

Summary Of Results
Identifies the demographics and themes including describing specialty programs, training levels, competency areas of need and outcomes. Some of the residents requiring accommodation or wellness services were the same as those on remediation, but most were also receiving or referred to wellness services. Most residents on remediation had either primary (i.e. pre-existing) or secondary (i.e. stress or anxious due to remediation) wellness problems.

Discussion Of Results
A diverse faculty team needs to y to support resident success. For example, a resident with professionalism issues, such as unexplained absences and not providing care for patients may have a Remediation coach to plan a reflective learning paper and other supports including Resident Wellness staff to identify and support health challenges impacting performance.

Conclusion
Most residents on remediation benefit from wellness supports. Accommodation works best with advance planning and well-developed teams and systems. With a better understanding we can refine our systems as we transition to CBME. Careful attention to wellness is important in CBME and remediation. Monitoring and assessment systems play an important role in resident progress and outcomes.
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**Competency-based Medical Education personalized learning blocks: A resident centred educational activity**

**R. Boscariol, R. Anderson, C. Tremblay, S. Cover**  
Northern Ontario School of Medicine, Sudbury, ON

CBME should enable learners to customize their clinical exposure to allow learners and their “coaches” to optimize their personal learning trajectory. Learning contracts offer the potential to promote deep learning and are especially well suited to practical and collaborative work. Uncertainty around how long residents will take to achieve the required EPAs in the upcoming CBD curriculum requires flexibility in scheduling and resident/coach influence on clinical exposure. The Personalized Learning (PL) Block was created to enable these aspects.

The PL Block was introduced as an opportunity for residents to reflect on their performance, negotiate objectives/competencies in alignment with future expectations, and encourage autonomous, lifelong learning. The experience created on the PL Block is based on the resident’s personal and professional development needs. Support is offered through peers, mentors, coaches and colleagues who help determine curricular, service-related and personal priorities guiding this block.

Currently, each resident has one PL block per year between PGY 2 and 5, scheduled during the second half of their year. Following the PL block, residents are asked to reflect on their experience. Fundamental to achieving success for this block is the resident’s ability to reflect on their practice, identify learning gaps, and create a meaningful learning plan. Residents are encouraged to look beyond concepts of individual patient care or gaining clinical knowledge or skill, to a broader set of needs, which help in managing their professional lives.

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**Turk Talk: Enhancing language skills in learners**

**D. Topps¹, M. Cullen¹, R. H. Ellaway²**  
¹University of Calgary, Calgary, AB; ²Northern Ontario School of Medicine, Sudbury, ON

**Background**

As educators, we must assess the quality of graduates’ communication skills and clinical reasoning in patient care. Although virtual scenarios are powerful educational tools for assessing clinical decision-making, they are limited in their ability to interpret free text or spoken input, and in their ability to emulate flexible yet challenging clinical encounters.

**Summary of innovation**

Turk Talk blends these partly automated online activities with key case sections intermediated by an online human facilitator. This allows for a much richer and nuanced learner experience while supporting multiple concurrent users in a distributed, networked environment. Turk Talk also accelerates case creation and the educational effectiveness of the cases. Turk Talk is a scalable, free, and open-source extension to the OpenLabyrinth virtual scenario platform. It has been used in Canada and Ireland, in a number of programs with various levels of participant expertise. Facilitators and learners have enthusiastically engaged with this novel approach. Detailed participant metrics and recording of all interactions have afforded rich quantitative and qualitative research, within a secure environment.

**Conclusion**

Turk Talk is a simple, low cost, scalable solution to assessing and improving the quality of patient interactions, that is easily implemented in a distributed education environment.
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**Improving senior resident education and orientation on the medical teaching unit**

**A. J. Caddell, I. Epstein**
Dalhousie University, Halifax, NS

**Introduction**
The Medical Teaching Unit (MTU) provides tertiary care to co-morbid, acutely ill medical patients. A separate consultative service (MTU-ED) provides emergency department coverage. During a 2015 review, several areas of improvement were identified, including standardization of teaching and orientation. In addition, it was suggested that senior residents would benefit from formal training on patient triage during emergency room consultation.

**Methods**
An MTU-ED orientation was developed with evidence-based approaches to triaging and consultation. This was supplemented by local data regarding ED consults. The MTU ward orientation was updated to highlight ward and discharge relevant services. These orientations were provided each new block, in addition to the annual, revised transition to senior medicine academic half day.

A series of core medicine topics was developed and mapped to undergraduate and Royal College objectives. These topics became the basis for daily formal and informal teaching, ensuring a consistent and less teacher-dependent experience. Associated landmark papers and clinical practice guidelines were collated to complement these topics.

A cloud storage system was developed and shared with the resident group to disseminate the orientation and education documents. This has grown to include other administrative information.

**Conclusion**
Formal evaluation is pending, but will include a satisfaction questionnaire. It is expected that the storage system evolves with ongoing resident participation and remains an important resource for teaching on the general medicine service, in addition to other medicine subspecialties.

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**An ambulatory selective with a focus on medical education**

**R. Shah, R. Cavalcanti**
University of Toronto, Toronto, ON

**Introduction**
Ambulatory education is an unmet need for students transitioning to residency in internal medicine. Among the challenges are: successful integration of students into fast-paced ambulatory practice, and balancing need for longitudinal relationships with supervisors with adequate exposure to clinical material. Knowledge of medical education issues specific to ambulatory education is also an area in need of attention.

**Method**
A dedicated selective block was created for the University of Toronto 4th year clerkship dedicated to transition to residency. Its goal is to foster clinical knowledge of ambulatory internal medicine and interest in scholarship in medical education, with a focus on case-based and bedside teaching. Learning objectives included: a) gain knowledge of ambulatory internal medicine patient presentations, b) articulate a question in medical education relevant to ambulatory medicine or bedside teaching, c) explore key literature in medical education, and d) generate one teaching exercise to be piloted among other students. Multimodal assessment included: clinical skills assessment by tutors, a blog promoting reflection on clinical experiences or readings, and assessment of the teaching exercise. Electronic course evaluations were complemented by an anonymous survey.

**Implications**
A dedicated selective aimed at increasing knowledge of ambulatory internal medicine, teaching, and medical education was valued by trainees. Evaluations highlighted the importance of dedicated time for reading and reflection on ambulatory experiences and the useful timing in the second half of the last year, which facilitated transition to postgraduate ambulatory experiences, and awareness of medical education as a career focus.
Using pan-Canadian input to develop a competency–based subspecialty rotation-specific evaluation framework for obstetrics & gynaecology (ObGyn)

N. Caccia1, E. Tannenbaum1, S. Dore2, M. Sagle3, N. Kent4
1University of Toronto, Toronto, ON; 2McMaster University, Hamilton, ON; 3University of Alberta, Edmonton, AB; 4University of British Columbia, Vancouver, BC

Introduction
Academic Professionals in Obstetrics & Gynaecology (APOG) is committed to supporting Competency-By-Design (CBD) design and implementation. Queens University is launching CBD in July 2017 with a curriculum framework for the core competencies. To build on this initiative, there is a need for a flexible, yet robust, evaluation sub-specialty evaluation framework adaptable to different rotations.

Method
Such a framework must ensure consistent competency in the domains which are required of a practicing Canadian generalist in the specific subspecialty, and be flexible enough to meet the needs of different Canadian programs. This requires a collaborative development team including residents, generalists and subspecialists from across Canada.

The proposed framework requires development of sub-specialty-specific curriculum, assessment and competency maps, and a variety of tools including rotation-specific, task-specific and generic CanMEDS-based assessment tools, assessing Intrinsic CanMEDS Roles, as well as that of Medical Expert.

We piloted the framework by developing a full panel of Ultrasound rotation-specific tools at the University of Toronto. We then expanded stakeholder input to other universities to begin framework development for Gynaecologic Oncology, developing task and rotation specific rubrics. We recruited participants at the APOG AGM in December 2016 and are currently building development teams for Maternal Fetal Medicine, Urogynaecology, Minimally Invasive Surgery, and Chief Resident rotations.

Conclusion
Development of a robust competency-based ObGyn subspecialty assessment framework for programs across Canada requires supervision and guidance of collaborative development with input from a broad range of stakeholders.

Curriculum development: Promoting general internal medicine resident involvement in quality improvement initiatives

P. Munene, S. Halman, D. Hasimja, K. Wooller
University of Ottawa, Ottawa, ON

Background
The 2015 CanMEDS Framework requires trainees to demonstrate competency in Patient Safety and Quality Improvement (QI). The literature on QI curriculum for general internal medicine (GIM) residents is limited and there is no single, established curriculum to teach QI. We sought to develop a curriculum that would enable GIM trainees develop and implement a QI project during their training.

Method
Overall a total of 10 trainees (PGY 4 and 5) in GIM participated in this pilot. A needs assessment of background knowledge and experience in QI was performed. A competency based curriculum was developed with two didactic, interactive educational sessions. The first session, adapted from work of the Institute for Healthcare Improvement, introduced trainees to key concepts in patient safety and QI. In the second session trainees presented a proposed QI project outline to peers and faculty with expertise in Medical Education and QI. Trainees received structured feedback.

Results
Self-reported knowledge improved after the sessions. All residents presented a QI project plan. Prior to the introduction of our curriculum, only 1 out of 10 (10%) trainees was already involved in a QI project. Although not mandatory, an additional 3 out of 10 trainees (30%) pursued a QI project following the completion of the educational intervention.

Conclusion
This competency based curriculum was successful in providing GIM trainees with the background knowledge to enable them to pursue a project in QI. Further work will involve broadening the curriculum to core internal medicine training.
AOA bone camp: Starting from within...A focus on Intrinsic Roles
Australian Orthopaedic Association, Sydney, NSW

Introduction
Research suggests that 'boot camps' boost the competence and confidence of trainees as they enter specialty training. In February 2017, a mandatory 2.5-day camp was implemented for incoming Australian orthopaedic surgery trainees at the commencement of their training. The aims were to: orient the trainees and set expectations; develop comradeship within their cohort; upskill trainees in targeted history taking and physical examination; and teach Foundation Competencies (intrinsic roles).

Method
The boot camp was attended by 47 first year trainees, representing the seven regions from across Australia. Audience polling, small group activities and role plays were used to explore communication skills, professionalism and ethical decision making. Session content was mapped to the Australia Orthopaedic Association curriculum and orthopaedic scenarios were selected to elicit discussion on topics not explicitly taught in the program’s ‘Bone School’. A ‘train the learner’ session focused on empowering trainees to initiate feedback, reflect on experience and action change to improve.

All trainees completed an evaluation immediately after the camp. Over 80% of trainees agreed the sessions were relevant to their needs. Individual sessions were further rated on appropriateness of duration, relevance of session content, engagement and if the session should be included in subsequent bone camps.

Conclusion
Participant responses on the evaluation were positive. Qualitative feedback was quite varied, reflecting the different postgraduate experience of trainees. Surprisingly, trainees requested some more didactic teaching. Not surprisingly, trainees would have preferred more ‘clinical’ content. Do these first year trainees really believe they have mastered the Foundation Competencies/intrinsic roles already?

EPA-based simulation modules with near peer assessment: The miniCRASH experience for surgical foundations transition to discipline
G. K. Yang¹, S. Butterworth²
¹Vancouver General Hospital, Vancouver, BC; ²University of British Columbia, Vancouver, BC

Introduction
Transitioning into surgical residency is daunting, often performing tasks independently or managing in crisis situations. Our Surgical Foundations (SF) program has a 4 week Competencies in Resuscitation and Stabilization of Hospitalized Patients (CRASH) course during fall for PGY-1’s. Though the course provides opportunities for gaining knowledge and procedural competency, there is clearly a need to have focused training at entry to residency. We sought to deliver a curriculum based on the most immediate needs of surgical residents while linking to Transition to Discipline (TTD) EPAs for SF.

Methods
PGY-1 SF residents in the last 6 months of the year participated in focus groups, key knowledge and procedural skills identified. Twenty-four modules created and mapped to TTD EPA’s. Memory aids provided before and during the scenarios. Over 3 half days, 15 minute simulations with 10 minute debriefs were run. Facilitators had debriefing teaching and aids. Learners were evaluated on a three-level Likert scale. Facilitators were assessed.

Results
Thirty-two PGY1s participated as learners and 25 met or exceeded the expectations in the 24 stations. Learners approaching expectations were provided additional resources. Evaluations for facilitators were positive with an overall rating of 98%. A six-month post-course meeting was held, PGY-1’s and PGY-2’s felt miniCRASH better prepared them for residency and re-enforced key competencies respectively.

Conclusion
In our experience, simulation-based modules were valuable in transitioning into a junior resident role. Assessment allowed early identification and support of learner deficiencies. Engaging PGY-2’s as facilitators provided a near-peer teaching relationship that was mutually beneficial.
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Professionalism and wellness program: Pioneering a new paradigm in Mexico

M. Cordero Diaz, D. Guerra, C. Félix Arce, D. José
Instituto Tecnologico y de Estudios Superiores de Monterrey, Monterrey, Nuevo León

Background
To advance the learning environment academic health centers should design quality initiatives to improve the wellness of residents and increase their commitment, educating them on exhaustion, burnout and its relationship with professionalism.

Introduction
Three initiatives were developed for the Medical Residency Programs at the Tecnológico de Monterrey School of Medicine: Strategy for an Optimal Clinical Learning Environment, Promoting Professionalism through Remediation, and the Professionalism and Wellness Program.

Objective
The purpose of this article is to describe the design and pilot of the first Professionalism and Wellness Program for Medical Residents in Mexico. The objectives of the program are (a) to identify and address suboptimal aspects of the learning environment, and (b) to teach resilience skills to the residents to overcome stress at work.

Methods
During 2016, the Professionalism and Wellness Program was designed and implemented in a pilot that consisted of a 10-session workshop with the 1st year surgery residents.

Results
During the semester, September 2016 – February 2017, all the 1st year surgery residents participated in a 2-hour biweekly session, facilitated by the School’s Psychologist. The themes reviewed and activities held during the 10 sessions were related to: personal history, professional interests, self-awareness, environment exploration, communication skills and team work, medical ethics, medical resident-patient relationship, resident expectations and experiences, wellness and self-care.

Conclusion
The relevance for resident wellness of personal and professional identity, team work, workload, and community were underscored by the participants. Further analysis and feedback are required to determine next steps.

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Experience with national accreditation in residency education: Mexico

D. José, C. Félix Arce, M. Jimenez, M. Cordero Diaz
Instituto Tecnologico y de Estudios Superiores de Monterrey, Monterrey, Nuevo León

Background
In Mexico, the National Council for Science and Technology (CONACYT) runs the National Program of Postgraduate Quality (PNPC). This national accreditation program, as a government policy to enhance quality in postgraduate programs, comprises also the medical residencies.

Introduction
The Tecnologico de Monterrey School of Medicine begun in 2012 the accreditation process with the CONACYT through the PNPC for its 16 medical residency programs, as a continuum process to improve quality. The PNPC accreditation levels are: 1) New development, 2) On development, 3) Consolidated, 4) International competency.

Methods
Initial steps for the accreditation lead to an organized 5-step process for our 16 residency programs: 1) medical residency program initial diagnosis, 2) data gathering, 3) peer review, 4) data and results analysis, and 5) innovation and quality improvement. We submitted all the information required to CONACYT, followed by a rigorous evaluation and a presentation to a peer-committee as part of the process of the PNPC accreditation.

Results
After the complete evaluation, we received the PNPC accreditation by the CONACYT. To date, 16 of the 16 medical residency programs have been accredited in the following levels: 1 program as new development, 13 on development, and 2 consolidated. During 2017, the reaccreditation process will begin aiming to move 2 or 3 programs to the international competency level.

Conclusion
Accreditation is a valued process, it requires to be visualized in a broader sense as a model of incremented quality that enforces constant improvement and innovation, leading to high quality programs and academic health centers.
Digital natives: Teaching and learning professionalism to residents

M. Cordero Diaz, S. Arreguin, A. Navarrete
Instituto Tecnológico y de Estudios Superiores de Monterrey, Monterrey

Background
Teaching professionalism faces a challenge in this era of residents as “digital natives”.

Introduction
Nowadays, there are not established methods to teach and learn professionalism in the digital age.

Objective
The purpose of this article is to describe the experience using interactive online teaching methods in our Clinical Ethics course for medical residents.

Methods
The Tecnologico de Monterrey School of Medicine curriculum and Professionalism Program comprehend 1 “Clinical Ethics” course mandatory for all 1st year residents. Content is oriented to promote reflection and self-awareness as an axis in the process of ethical decision-making through the assimilation of basic knowledge of moral philosophy, professionalism and medical ethics. The course is taught in a semester, weekly in a 1-hour session.

Results
To reach our digital natives residents different interactive and online education platforms were included: interactive online education platforms (Socrative, Nearpod, TEDEd Lessons & Blackboard), online resources from medical associations (AAMC, AMEE, ACOG, Royal College Bioethics Site, Jefferson Medical College Professionalism in Medicine), and other online and multimedia resources (SurveyMonkey, YouTube, Netflix). This approach has been effective not only to review the contents of each session, but also to promote teaching medical professionalism through problem based learning, medical humanities, narrative writing, and case based discussion.

Conclusion
Integrating innovative interactive teaching tools may promote a greater interest for digital natives in the courses related to professionalism. It requires a cultural change in teaching environments to design, implement and assess its impact, and faculty development to promote its use.

Enhancing leadership development in general surgery residents at the University of Manitoba

M. Delisle, C. Leung, M. Ward, M. Chan, C. French, D. Wirtzfeld
University of Manitoba, Winnipeg, MB

Introduction
Leadership development has become increasingly important since the transition from Manager to Leader in CanMEDS 2015. Sanokondu, an international network fostering healthcare leadership development, created a website containing nine resident competency-based leadership modules influenced by LEADS. These modules were intended for local adaptation and served as a springboard to develop a curriculum for General Surgery (GS) residents at the University of Manitoba.

Method
The GS academic curriculum at the University of Manitoba was reviewed to determine how leadership was taught and assessed. Three GS residents reviewed the Sanokondu modules to determine appropriate content for implementation given curricular gaps. Two faculty members with expertise in leadership development and one in simulation reviewed the curriculum and it was approved for future implementation.

The Sanokondu modules were adapted to include a five-part curriculum, each focusing on a leadership competency. The first and second sessions will occur in PGY-1 and utilize self-reflection and journaling to teach how to lead self and engage others. The third session in PGY-2 uses case-based discussions to teach accountability. The fourth and fifth sessions in PGY-3 utilize simulation and a group capstone project to consolidate developing coalitions and transforming systems. Evaluation methods will include 360-degree multisource feedback, self-evaluation and portfolios.

Conclusion/Implications
Curriculum review and use of existing resources helped to develop a local discipline-specific leadership curriculum. Longitudinal, competency-based curricula that incorporate established leadership frameworks, such as LEADS, are one strategy to ensure leadership is being taught and assessed.
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**Gaps in diabetic ketoacidosis management at a tertiary hospital: Need for quality improvement**

A. Assal, C. Ibrahim, B. Sidhu, C. Ke, J. Wang, G. Mukerji
University of Toronto, Toronto, ON

**Introduction**
Diabetic ketoacidosis (DKA) has a reported mortality of 4-10%. Standardized insulin infusion protocols have been associated with improved care, reduced length of stay and adverse events. Sunnybrook Health Sciences Centre (SHSC) is a tertiary care hospital in Toronto, Ontario with no protocol for DKA management. Our aim is to 1) assess care delivery patterns of DKA management to determine quality gaps, and 2) use the Model for Improvement framework to implement change ideas and improve care.

**Methods**
A retrospective chart review from April 1, 2015 to March 31, 2016, was undertaken based on admission or discharge diagnoses of DKA, T1DM and IV insulin usage. DKA was pre-defined as a glucose ≥14 mmol/L, an anion gap (AG) ≥14 mmol/L and positive serum or urine ketones. Measures assessed include rate of AG reopening, length of stay, insulin, potassium and fluid management. Balancing measures included rate of hypoglycemia and hypokalemia.

**Results**
There were 49 cases of DKA in 33 patients. IV insulin was used in 42 (86%) and continued until AG closure in 35 (71%). AG reopened in 7 (14%). Patients were appropriately transitioned to long acting insulin in 25 cases (51%). Adverse events included hypoglycemia (n=17, 35%), insulin initiation while hypokalemic (n=3, 6%), and hypokalemia after infusion initiation (n=29, 59%).

**Conclusions**
DKA management at SHSC demonstrates variable care delivery with clear quality gaps. To optimize care, a standardized DKA management protocol targeting avoidance of hypoglycemia and hypokalemia was developed, using iterative Plan-Do-Study-Act cycles. Outcomes will be evaluated post-protocol implementation.

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**Useless tests: What can I do as a resident?**

L. Pitre, M. Denis-LeBlanc
Hôpital Montfort, Ottawa, ON

Physicians are encouraged to make good use of public finances by choosing wisely the investigations necessary to a diagnosis. So far, no formal training had been offered to residents on this matter. However, in most academic centers, residents are responsible for a majority of test ordering and therefore their institution’s spending.

At our center, an academic community hospital, we have created a one-hour workshop on the concept of choosing wisely. The goal was to raise awareness of our first year residents on the following topic: “Are all tests available necessary or valuable?”. With many examples, we encouraged residents to recognize the futility of certain investigations and promoted clinical/ethical reasoning when ordering tests. The costs of specific tests and medications were exposed and finally, residents were encouraged to take an active role on expenses related to health care. This workshop targeted several of the CanMEDs roles and promoted use of guidelines in specific chronic diseases.

Based on results of evaluations, training was very well received by the residents. A marked decrease in the number of simple tests and blood work was observed in the months following the session. The workshop will be offered as a self-learning module in the near future.

Residents are at the front-line of care in our academic centers. We need to train them with the awareness of the impact of their actions on the financial picture of our health care. There is no better time than the beginning of residency training to start this process.
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How residents can choose more wisely

**J. Hall**, **R. Mirza**, **J. Quinlan**, **E. Chong**
1 University of Toronto, Toronto, ON; 2 McMaster University, Hamilton, ON; 3 Memorial University of Newfoundland, St. John's, NL

**Introduction**

The 2015 CanMEDS Framework identifies Leadership as one of seven physician competencies, with the expectation of stewardship of health care resources. Resource stewardship is an approach to choosing treatments and interventions that incorporates the consideration of the benefits, harms, and overall costs. To date, no resident-specific resource stewardship guideline has been identified. In Canada, there is a concerning lack of resource stewardship education in residency training programs. Resident Doctors of Canada (RDoC) in collaboration with Choosing Wisely Canada (CWC) sought to develop an evidence- and consensus-based list of five recommendations to promote resource stewardship.

**Methods**

RDoC, in collaboration with CWC, convened a taskforce with diverse geographic and specialty representation, to develop evidence-based recommendations targeting resident behaviour related to resource stewardship practices. Six guiding principles were used to evaluate candidate recommendations. Each recommendation arose frequently in residency training; had relevance to residents; played a role in shaping future behaviours; could be addressed during residency training; focused on residents’ use of tests, treatments, or procedures; and contributed to building a more economically sustainable, cost-conscious healthcare system. Residents across the country were consulted via an online questionnaire to solicit feedback on 12 candidate recommendations. The taskforce used this resident feedback to finalize the list.

**Results**

Five evidence-based, resident-supported recommendations that highlight the unique role of resident physicians as health care providers, trainees, and teachers were identified.

**Conclusions**

This list represents an innovative framework to engage residents in resource stewardship education. In partnership with CWC, the final list will be disseminated broadly.

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Standardizing patient-centered advance care planning in a multidisciplinary chronic kidney disease clinic

1 University of Toronto, Toronto, ON; 2 Stanford University, Palo Alto, CA; 3 University Health Network, Toronto, ON; 4 Humber River Hospital, Toronto, ON; 5 Trillium Health Partners, Toronto, ON

**Background**

Despite greater cognitive impairment, and comparable prognoses and symptom burdens to cancer patients, individuals with end-stage renal disease are more likely to undergo invasive procedures in the ICU in their final month of life. To ensure concordance with patients’ wishes, the Canadian Choosing Wisely guidelines encourage advance care planning (ACP) of end-of-life care for all chronic kidney disease (CKD) patients. Thus, we aimed to discuss ACP with 50% of patients with CKD stage 4 or greater at the TGH CKD clinic by May 2014.

**Methods**

The Model for Improvement’s recursive Plan-Do-Study-Act (PDSA) cycles were applied to standardize ACP for advanced CKD patients. PDSA 1: a blank ACP form served as a reminder at the front of patient charts. PDSA 2: the Canadian Hospice Palliative Care Association’s ACP framework was applied to all discussions. PDSA 3: the social worker was tasked with ACP. We compared the rates of ACP before and after the implementation of the standardized protocol, balanced by the rates of discussions surpassing 15 minutes, and by patient resistance to ACP.

**Results**

After three months of intervention, ACP discussions rose from 0% to 34% (15/44). 11/15 patients reacted positively and 4/15 neutrally. Poor knowledge of ACP, language barriers, and religious or cultural attitudes did not lengthen discussions significantly.

**Conclusion**

Integrating a standardized shared-decision making approach to ACP in a multidisciplinary CKD clinic is important and feasible. Next, we will adapt ACP to dialysis-specific issues, prioritize urgent-start dialysis patients, and track concordance of ACP with actual care received.
A comprehensive quality improvement initiative to prevent falls in the emergency department

S. Mehta¹, P. Samuel², J. Park², F. Muckle², J. Lexchin², B. McGovern³, L. Chartier¹
¹University of Toronto, Toronto, ON; ²University Health Network, Toronto, ON; ³Ryerson University, Toronto, ON

Introduction
There is an increasing number of visits by elderly patients in our academic emergency department (ED), with falls being a significant safety concern for them. Validated falls prevention screening tools developed for inpatient populations unfortunately do not translate well to ED patients. The aim of our Quality Improvement (QI) team was to develop a standardized approach to improve the identification, assessment and management of patients at risk for falls within the ED.

Methods
A literature review of existing tools was completed to develop our own reliable ED falls risk screening tool. Staff surveys and stakeholder engagement were used to devise a comprehensive strategy starting with detection at triage and implementation of action-driven steps at the bedside. PDSA cycles were used to iteratively improve our method and its utilization rate, and randomized audits were done to monitor uptake.

Results
A five-fold increase (from 10 to 50%) in the completion rate of our novel tool was seen by the end of the QI initiative. The monthly number of recorded falls dropped throughout the project (reaching 1 fall on the last measured month), and a falls prevention bundle was created to improve elder safety. Staff engagement remained high throughout the project.

Conclusion
We developed a novel ED-specific falls risk screening tool for the identification, prevention and management of ED patients at risk for falls in order to enhance patient safety. We employed it within the environment of a busy teaching hospital, and we have started to disseminate our approach to other EDs.
Development and implementation of a computerized alert for identification of acute kidney injury

A. Kitchlu
University of Toronto, Toronto, ON

Introduction
Acute kidney injury (AKI) is often unrecognized and contributes to poor outcomes. Observational data suggest that nephrologist follow-up improves all-cause mortality. Electronic alerts aid clinicians in recognizing AKI. We sought to develop an algorithm to detect AKI based on the Acute Kidney Injury Network (AKIN) criteria and integrate this into the Electronic Patient Record (EPR) at Toronto General Hospital.

Methods
We developed a computerized algorithm to estimate an AKIN stage from creatinine measurements for inpatients. The AKI cases identified were compared to referrals to the AKI clinic (October 2014 – January 2015). The number of cases identified by the algorithm were compared to nephrologist consults using chart review. We then examined specificity for AKI over a two-week period.

Results
Of 169 cases referred to the AKI clinic, 161 were identified by the algorithm. In 62% the algorithm identified AKI at least 1 day before referral. By chart review, the algorithm detected 271 potential consults versus 174 actual consults performed (64%). The algorithm specifically detected 6/19 cases of AKI with the remainder identifying chronic kidney disease (CKD). The same AKIN stage was assigned in 60% of cases, while the algorithm stage was higher, lower, or unassigned in 28%, 7% or 5%, respectively. As of March 2016 the e-alert is active in EPR.

Conclusions
AKI may be overlooked in complex, hospitalized patients. The implementation of an automated alert may improve timely referral and follow-up. Optimization of the algorithm to exclude CKD and methods to address additional gaps in follow-up are required.

Dedicated rheumatology joint injection clinic to improve exposure and training for residents

N. K. Gakhal, C. Farrer, E. Grigoriadis, J. Hochman
Women’s College Hospital, Toronto, ON

Introduction
Post-graduate medical trainee exposure to joint injection and aspiration is inconsistent in number and frequency. Thus, it is a challenge for trainees to develop competency in this important skill. To obtain a reliable estimate of skill, at least 4-6 different evaluations are required. By instituting a teaching joint injection clinic, this quality improvement project aimed to increase the number of joint injections/aspirations performed by participating trainees while on their rheumatology rotation to at least 6.

Methods
A half-day rheumatology joint injection clinic was developed. The primary outcome measure was the percentage of trainees who completed at least 6 injections/aspirations by the end of their rotation. The process measures were: total number of patients assessed in clinic, injections/aspirations performed (by staff or trainee), and injections/aspirations performed by trainees. The balancing measure was the number of patients seen in clinic who did not require injection/aspiration. Iterative plan-do-study-act (PDSA) cycles were undertook. PDSA #1 was to triage and direct appropriate referrals to the joint injection clinic. PDSA #2 was to increase booking of follow-up patients likely to proceed with injection/aspiration. PDSA #3 was to prioritize booking of patients specifically for knee and shoulder injections to enhance trainee learning.

Results
105 patients were seen in the clinic over a 9 month period. Of the total 95 injections/aspirations completed, 39 (41.1%) were performed by trainees which included 16 (41%) knees and 12 (31%) shoulders.

Conclusions
The development of a dedicated rheumatology joint injection clinic increased the number of injections performed by trainees.
The development of a patient-based feedback tool to assess the CanMEDS-FM Communicator Role

A. Singwi1, I. Waters2, D. Toubassi1
1University of Toronto, Toronto, ON; 2Toronto Western Family Health Team, Toronto, ON

Introduction
It has proven challenging for some Family Medicine programs to provide meaningful feedback relevant to the CanMEDS Communicator Role, and feedback about residents’ Communicator competencies has often neglected to include patients’ perspectives. This 5-year study sought to develop a patient-based tool to provide residents with immediate feedback centred on their Communicator Role competencies.

Method
The patient-centred survey was based on a tool jointly developed by the College of Family Physicians of Canada, Royal College and the Medical Council of Canada. A Continuous Quality Improvement (“Plan, Do, Study, Act”) model was utilized each year to modify the process and tool based on consultation with faculty physicians and residents. In its first iteration, 10 PGY-1s distributed the survey to their patients. Each resident concurrently completed their own survey reflecting on the same encounter. At the end of each clinic, the residents reviewed both the patient and resident surveys with their preceptors. In subsequent years, the resident survey component was omitted. In addition, the survey was revised from a summative to a formative evaluation format. In the first and fourth years of the study, patients identified themselves on the survey; in the remaining years, patient feedback remained anonymous.

Conclusion
As part of our assessment of Communicator Role competencies, a patient-based feedback tool was developed, refined and successfully integrated into the Family Medicine residency program at our site. Feedback has been positive. Future plans to include email distribution of patient surveys will increase numbers and average the returned data over more prolonged periods.
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Facilitating transfer from peritoneal dialysis to home hemodialysis through implementation of a novel referral form

A. Wong1, G. Masschelein1, M. VanTil1, B. Virine1, S. Huang2, A. Jain2, L. Bathini1, J. Hemmett2
1Western University, London, ON; 2London Health Sciences Centre, London, ON

Introduction
Currently there is no system in place to facilitate assessment and referral of patients failing peritoneal dialysis (PD) to home hemodialysis (HHD). Patients failing PD are usually sent to in-centre hemodialysis by default despite HHD generally offering more benefits to both the patient and the healthcare system. This QI project will aim to assess 50% of incident PD patients on high dose PD prescription at a dialysis unit in London, Ontario for the possibility of transitioning to HHD by implementing a “PD to HHD” referral form. The goal is to increase the number of PD patients choosing to transition to HHD instead of in-center hemodialysis.

Methods
We are implementing a referral form in attempts to establish a formal system for screening failing PD patients so that good candidates for HHD may be further assessed in the HHD unit. This intervention will be evaluated by comparing the number of patients on PD with whom HHD is discussed before and after the intervention. Data analysis will include assessment of the number of potential HHD candidates identified and referral forms assessed, as well as the impact on PD appointment times, HHD training wait times, and nurse/nephrologist workload. PDSA cycles will begin with implementation of the form by 1 nurse to a limited number of patients, with expansion to all nurses/patients, integration into the electronic system, and implementation of multidisciplinary team meetings depending on the success of the intervention.

Results and Conclusion
Pending the completion of PDSA cycles which are currently in progress.

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Improving the efficiency of handover in pediatrics: A resident-led quality improvement project

Z. Bhaloo, J. Walton, T. Kherani
University of Alberta, Edmonton, AB

Introduction
Handover is a major preventable cause of patient harm. Residents are responsible for handover throughout their training and handover is a new key CanMEDS competency. In our institution, despite initiating the I-PASS curriculum for pediatric resident handover, residents still feel that handover is inadequate. This resident-led quality improvement (QI) project aims to improve the efficiency of resident handover by identifying challenges and employing QI methodologies for improvement.

Methods
A qualitative thematic process based on resident perceived challenges was conducted. Resident handover was observed. Resident focus groups reflecting on the thematic process while engaging residents in the Model of Improvement will be conducted. QI tools including root cause analysis (eg Ishikawa diagram) and process mapping will be employed to develop an aim statement, outcome measures and change ideas. This will inform plan-do-study-act (PDSA) cycles. Interventions will be evaluated with observed handover using a controlled before and after study design.

Results
The qualitative thematic process identified content (73%), structure (55%), interruptions (36%) and late starts (36%) as major challenge themes. Resident handover was observed for each weekday. Late starts, duration, interruptions, number of patients, team members present and handover content including contingency plans, clarifications sought, and unrelated content were recorded.

Conclusion
This QI project engages residents in QI methodology to improve handover, a daily component of patient care. Handover, QI and patient safety are reflected in the CanMEDS competencies and framework as residency goals. Improved handover efficiency can lead to improved patient safety and quality of care.
The hazards of convenience: The role of electronic order sets in unnecessary blood testing

I. G. Brown, C. Soong
University of Toronto, Toronto, ON

Introduction
Reducing unnecessary blood tests (complete blood count, electrolytes, and creatinine) has been highlighted by the Choosing Wisely campaign as a key area of focus in hospital medicine. Several studies have identified computer physician order entry (CPOE) as one of the modifiable problem areas. We aim to eliminate the option of ordering “daily for three days” blood work on admission and see if that results in a change in unnecessary or total blood tests per patient day in hospital.

Methods
We reviewed general internal medicine (GIM) inpatients discharged between February and December 2016 (intervention took place in July 2016). The intervention involved removing the option of ordering daily for three days blood work (CBC, electrolytes, creatinine) from the CPOE admission orders. We then calculated the number of blood tests conducted per patient day in hospital, and what proportion of those tests had appropriate and inappropriate indications.

Results
Five hundred charts were reviewed. When the pre-intervention data was compared to the post-intervention data, preliminary data showed that there was a reduction in total number of routine blood tests (2.59 tests per patient day in hospital compared to 2.33 in the post-intervention period). There also appears to be a slight reduction in the number of inappropriate orders for electrolytes and creatinine.

Conclusion
Eliminating daily blood work order options can potentially reduce the total amount of blood tests. This relatively simple intervention could reduce cost and patient morbidity significantly. We are currently collaborating with another large institution to pool data and compare outcomes.
Teaching and learning in residency education / L’enseignement et l’apprentissage dans la formation des résidents

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This abstract has been withdrawn / Ce résumé a été retiré

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Key drivers of satisfaction with residency experience by gender and parental status
N. Shaikhislamova
University of Toronto, Toronto, ON

Introduction
Over recent decades the proportion of female residents has steadily increased in Canada. In this new context, we examined whether the factors contributing to a positive or negative residency experience are the same for male and female residents.

Method
In May 2016, the University of Toronto conducted an online survey of residents (n=1808) and received a 54% response rate. Respondents rated their overall residency experience along with specific elements of their residency training. Regression analysis was employed to identify key drivers of satisfaction.

Results
Overall, female and male residents have similar levels of satisfaction with their residency experience (71% vs 69%). The key drivers of satisfaction for both female and male residents are work environment and educational experience, although work environment is more important to females, and educational experience is more important to males.

Substantial differences appear when we look at parental status. For residents who are mothers, work environment has a much stronger influence on their residency experience than for fathers. For residents who are fathers, fair and equitable access to opportunities is by far the most important factor in their overall satisfaction with their residency experience. For both female and male parents, exclusion from informal networks also emerges as a significant driver of satisfaction.

Conclusion
Females and males do not experience residency the same ways. Specifically, mothers and fathers may need different types of targeted supports to improve their respective residency experiences.

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Unintended consequences of connectivity
J. Binnendyk, C. Watling
Western University, London, ON

Introduction
The implementation of video-conferencing has become a critical tool in teaching and learning, particularly in a distributed-education model. Although this technology provides access to education and experience without time or distance limitations, increased remote attendance results in fewer learners physically attending class. We investigated the results of an annual educational program to explore the consequences of providing connectivity options to medical residents.

Method
Since 2014, most first-year residents have participated in a Transition to Residency (T2R) program, which consists of 8 consecutive half-day workshops. We analyzed attendance data from the last three iterations of T2R to compare fluctuations between in-class and video-conferenced attendance. A post-program survey asked attendees to explain reasons underlying choices to attend remotely or in-person. Faculty interviews explored attitudes toward teaching to a sparse audience.

Results
Over 3 years, we found an increasing number of residents choosing webcast over live attendance. Video-conferenced attendance increased from 21.86% in 2014 to 43.23% in 2016, despite consistent geographical distribution of learners. Residents cited explanations including parking and gas expenses, travel time, and a desire to multi-task to explain remote attendance. Faculty expressed frustration at declining attendance indicating full participation as a necessity for engaging and interactive educational sessions.

Conclusion
Although video-conferencing was initially offered to benefit residents practicing at distributed sites, its increasing use by residents training at the home site calls into question the value of continuing to offer such costly technology. Additionally, over-reliance on remote viewing may be diminishing the quality of education faculty can provide.
A scoping review of the literature on point-of-care ultrasound (PoCUS) education

A. Moses¹, R. Cavalcanti²
¹University of British Columbia, Vancouver, BC; ²University of Toronto, Toronto, ON

Introduction
Point-of-care ultrasound (PoCUS) is an important tool for the diagnosis and management of patients across many medical specialties. However, current knowledge surrounding key themes, structural frameworks, and methods of PoCUS education is lacking. This scoping review consolidates literature on PoCUS education and highlights key considerations for curriculum designers.

Methods
We searched the MEDLINE, EMBASE, and ERIC databases for combinations of key words relevant to our search topic. Articles that focused on PoCUS training in undergraduate and graduate medical education were selected for analysis.

Results
Of 1351 articles identified, 201 were analyzed in depth. Five major themes emerged: curricular content, teaching modalities, learner assessment, program evaluation, and barriers to implementation. Curricular content involved a range of imaging targets for diagnostics and therapeutics, and varied significantly by specialty. Teaching modalities included lectures (79%), live models (68%), web-based learning (29%), and simulation (25%). Several studies showed better outcomes for hands-on teaching vs. didactic lectures, and longitudinal curricula vs. short-term curricula. Learner assessments included knowledge acquisition (86%), image acquisition (74%), and image interpretation (61%). Few studies assessed knowledge retention (14%), or clinical outcomes (8%). Barriers to curriculum implementation included learner and instructor time commitments, and solutions included peer mentoring and web-based approaches.

Conclusion
Scholarly literature on PoCUS education is expanding to match its widespread clinical use. Our review identified key themes and considerations in PoCUS education. Longitudinal, spaced curricula, with an emphasis on hands-on learning, appear to enhance educational outcomes. Further research is needed to evaluate knowledge retention and clinical impact.
Teaching and learning in residency education / L’enseignement et l’apprentissage dans la formation des résidents
Residents as teachers: The creation of a novel clinical shadowing experience for pre-clerkship medical students

F. Kamar, N. Sharfuddin, N. Sharma, A. Bharwani, M. Mintz
University of Calgary, Calgary, AB

Introduction
Resident physicians serve an important role as teachers for medical students. Residents offer clerkship students clinical training and mentorship. However, an opportunity that allows pre-clerkship students to engage with residents is lacking. We sought to create and evaluate a shadowing program that enables pre-clerkship students to follow residents during their clinical duties.

Methods
We conducted a prospective cohort study over three months involving 47 pre-clerkship medical students and 28 internal medicine residents at a Canadian medical school. Students were paired with residents, one-on-one, for one or more two-hour shadowing sessions while the resident was conducting in-patient duties. Participants were asked to fill out online surveys afterwards. Five residents and five students were invited for focus interviews.

Results
The average number of sessions per student and resident was 1.4 and 2.4, respectively. The survey response rate for students and residents was 80% and 60%, respectively. This shadowing opportunity generally met the objectives of the participants. The students appreciated direct insight into residency, and most of them were equally or more satisfied in shadowing a resident compared to an attending physician. Many residents expressed, however, difficulty in balancing time between the duties to their patients and teaching their student.

Conclusion
Offering shadowing experiences for students with residents is feasible and desirable among students. However, careful planning of the timing of the sessions is needed to ensure that residents do not feel overwhelmed by their clinical duties. This program could be trialed in the future at other centers and in other disciplines.

Clinical learning environments for graduate medical education: A realist synthesis

A. Wiese⁴, C. Kilty¹, B. Maher¹, S. O’Flynn¹, C. Bergin², M. Horgan¹, D. Bennett¹
¹University College Cork, Cork, Ireland; ²Trinity College Dublin, Dublin, Ireland

Introduction
Optimising clinical learning environments (CLEs) is essential because they impact on the competence and development of residents. Evidence-based design of CLEs is challenging because of the complexity both of workplace learning as an intervention and the settings in which it happens. What ‘works’ in one context may not be effective in another. The aim of this study was to synthesise the evidence relating to workplace learning in graduate medical education (GME) to address the question ‘What works, under what circumstances and for whom?’

Methods
A realist synthesis of the literature was conducted in line with the Rameses guidelines. Realist review is an interpretive, theory-driven, narrative summary of the literature and aims to develop a theoretical framework describing Context-Mechanism-Outcome configurations of how, why and when GME is effective.

Results
Findings relate to mechanisms that generate learning within the resident-supervisor relationship. Supervised participation, observation, and dialogue in practice were three macro-mechanisms abstracted from the data. These mechanisms include entrustment, support-seeking, modelling, monitoring, and dialogue. Constraints in the clinical setting modify the extent to which these mechanisms generate learning outcomes, such as organisational culture, resident-, supervisor- and patient-related factors, duty-hour regulation, the structure of training programs, etc.

Conclusion
Findings provide important information for stakeholders responsible for training residents, to improve and optimise their learning environment. Policy-makers and practitioners in GME will be able to apply our findings within their own contexts. High quality CLEs can improve the performance, humanism and wellbeing of residents and improve the quality and safety of patient care.
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Designing a bedside teaching curriculum workshop

J. Acuna, G. Williams, C. Shearer
Dalhousie University, Halifax, NS

Introduction
It is recognized that the amount of bedside teaching is in decline. In order to mitigate this decline, design interventions to improve bedside teaching, are necessary to understand how residents and program directors perceive bedside teaching experiences.

Methods
In order to inform the development of an educational workshop on the subject, we surveyed residents and program directors about their experiences with bedside teaching. The survey included questions to gauge the extent of their knowledge, skills and attitudes towards bedside teaching as well as the degree to which bedside teaching was occurring in their residency program. Qualitative feedback from the Residents as Teachers program was also reviewed in order to contextualize bedside teaching within the broader scope of residents’ teaching responsibilities.

Results
The results of the survey showed discrepancies in knowledge, skills and attitudes towards bedside teaching between program directors and residents. Residents felt that they received less time, feedback and training around teaching at the bedside. This was also cited it in the qualitative feedback from Residents as Teachers program. Program Directors felt they provided enough feedback, time, and skills training at the bedside for residents. The in-congruence between residents’ and program directors’ perceptions of bedside teaching experiences may be due to lack of orientation and feedback in the learning environment.

Conclusions
Educational interventions must include orienting and feedback as an objective. This finding was incorporated into the design of a bedside teaching workshop that was well received and associated with knowledge gains in bedside teaching.

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We care, we care! Our failures in teaching communication skills at the GME level

R. Lewin
University of California, Los Angeles, Los Angeles, CA

Background
Medicine recognizes the need for trainees with high-quality communication skills, but has not succeeded at cultivating these skills in the GME environment. Challenges include the hierarchical environment, need for reciprocal communication, and lack of cues identifying the learning frame and encouraging participation. This project used in depth observations and interviews to understand how resident and attending physicians developed and taught communication skills, as well as the importance they perceived these skills to have.

Methods
Observations of 15 instances of Internal Medicine rounds at a large urban hospital were conducted focusing on development of residents’ communication skills, particularly instances of teaching, modeling behaviors, and feedback. Additionally, interviews were conducted with these teams (25 physicians) focusing on the development, teaching, and perceived importance of communication skills.

Results
Residents identified communication skills as critical, but felt their skills were innate, not acquired in medical school or residency. Residents failed to identify when modeling was used for teaching. Residents stated they would not contact their superiors for assistance with communication, identifying their co-residents as their only resource.

Discussion
These results suggest that current communication training is not impactful, but that residents are aware of the importance of these skills. Residents are infrequently cued into the learning frame, leaving them unaware of teaching or modeling. The hierarchical structure of rounds has few opportunities for reciprocal communication unless specifically encouraged. Residents must be cued to the educational moment. Developing channels to mitigate resident hesitancy asking for help would improve resident communication skills and patient care.
Evaluating the efficacy of teaching empathy skills to internal residents in Iran University of Medical Sciences

H. Baradaran, K. Soltani-Arabshahi, H. Bahador, A. Asadi
Iran University of Medical Sciences, Tehran

Background/Objective
Physician empathy is an essential element of the patient–physician relationship and is related with better outcomes, greater patient safety and satisfaction.

Method
We enrolled fifty internal medicine residents from one of the Teaching hospitals affiliated to Iran University of Medical Sciences. Residents were eligible if they (1) were currently in training, (2) were available to attend a two-day training workshop and (3) had clinical interactions with adult inpatients able to complete requested rating scale questionnaire. The efficacy of the workshop was assessed by the Jefferson Scale of Physician Empathy (JSPE) in before and one week after workshop. In addition fifty hospitalized patients in each resident’s service evaluated physicians’ empathy skills by completing a satisfaction questionnaire before and after workshop.

Results
The empathy training workshop showed a great improvement in internal medicine residents (mean score changed from 77.6 to 96.8) and also positive changes in patients satisfaction scores (from 68.3 to 84.8).

Conclusion
To our best knowledge this is the first study in Iran demonstrating that a brief training intervention can increase physician awareness of their patients’ and their own emotional states and provided behavioral tools to convey empathic understanding and concern. A brief intervention grounded in the psychobiology of empathy significantly improved internal medicine residents empathy as rated by patients’ satisfaction suggesting that the quality of care in medicine could be improved by integrating the teaching of empathy into medical education.
Teaching and learning in residency education / L'enseignement et l'apprentissage dans la formation des résidents

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**Responding to a call to action: Resources for learners to support digital health leadership**

A. Fazzalari¹, R. Bhyat¹, C. Gibson²
¹Canada Health Infoway, Toronto, ON; ²Western University, London, ON

**Introduction**
Physicians are learning & practicing in the shifting sands of technology. AFMC & Canada Health Infoway are spearheading a national initiative to provide resources to respond to the evolving technological landscape in medicine. Working collaboratively with medical educators, faculty, residents & students, tools are being developed to support the inclusion of digital health in medical education content, and to advocate for integration of eHealth competencies into medical curricula.

**Methods**
An enhanced eHealth Resource Toolkit has been developed with widespread engagement to collect current best practices from across medical schools in Canada. Case studies bridging classroom & clinical settings, as well as a blueprint for integration into teaching have been incorporated into the Toolkit. Continued engagement of Medical Faculty Peer Leaders in advocacy efforts to promote curriculum enhancement is ongoing. Members of this eHealth group have been instrumental in providing input into the enhanced toolkit as well as promoting eHealth & expanding the network of digital health leaders in Medicine.

**Results**
Emerging evaluation results will be shared on the toolkit’s impact on users’ knowledge, likelihood to incorporate eHealth concepts into their teaching, and metrics to measure the effectiveness of advocacy work in changing medical education.

**Conclusion**
The ”Accelerating eHealth Integration into Medical Education” national initiative supports residents in their digital health teaching & learning needs. Updated ehealth, bilingual resources for medical educators & residents contribute to facilitating curriculum change as well as teaching, learning and assessment of eHealth concepts in the undergraduate and postgraduate medical education programs across Canada.

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**Residency experience: What’s social class got to do with it?**

M. Ruetalo, G. A. Babcock, C. S. Abrahams, N. Shaikhislamova, G. Bandiera
University of Toronto, Toronto, ON

**Introduction**
Residency programs have a responsibility to admit a diverse population of trainees, but they are also responsible for ensuring that all trainees feel included and have equal opportunities for advancement. Some studies have looked at the experiences of students from lower SES backgrounds, an under-represented group, in undergraduate medical education but little is known about the postgraduate level. The purpose of this study was to examine how childhood SES impacts the residency experience.

**Methods**
In 2016, we conducted an online survey of all residents at the University of Toronto (U of T) (n=1808) and received a 54% response rate. As a measure of childhood SES, non-exiting residents were asked: “Until age 16, which of the following best describes your family’s socio-economic status in the country you lived? Lower, Lower-middle, Middle, Upper-middle, Upper.” This study includes only respondents born in Canada (n=408).

**Results**
Six in 10 Canadian-born U of T residents say they come from an upper (10%) or upper-middle (47%) SES background, while 1 in 10 come from lower (2%) or lower-middle (10%) SES background. Residents from a lower/lower-middle SES background are less likely than those from an upper/upper-middle SES background to rate their educational experience as ‘excellent’ or ‘very good’ (51% vs. 66%). They are also less likely to rate their feeling of belonging (55% vs. 67%) and their fair and equitable access to opportunities (51% vs. 67%) as ‘excellent or very good’.

**Conclusion**
More research is needed to understand the reasons behind this disparity in residency experience.
Surgical education e-collaborative: Launching a new resident-driven global surgery collaborative

M. Stein¹, C. Seabrook², L. Bernard¹, A. Adamchyk¹, P. Sravanam³, V. Trivedi¹, S. Fabiano⁴, Y. Ying¹

¹University of Ottawa, Ottawa, ON; ²The Ottawa Hospital, Ottawa, ON; ³Catholic University of Health and Allied Sciences, Mwanza, Tanzania; ⁴Pan African Academy of Christian Surgeons (PAACS), Africa

Background

There is increasing concern that surgical training has become dependent on tertiary hospitals, with decreasing emphasis on developing surgical skills in low-resource settings. Global surgery addresses this topic, but is under-represented in the curricula. There is a growing need to provide surgical trainees with educational initiatives to facilitate their engagement in global health in a way that is meaningful and sustainable.

Methods

A resident-driven global health collaborative network was established. Using a low cost online platform, case-based discussions were facilitated between surgical residents in both developed and developing institutions. Meetings included 3 surgical residents from Ottawa, 3 surgical residents from a distributed university in Tanzania and Gabon, and 1 staff surgeon moderator from either institution. Each presented case was written by a resident and approved by a staff. A survey was distributed to participants.

Results

Overwhelming interest to participate in simple and longitudinal global health projects was a common theme identified. The interface allowed for cultivating of relationships between surgical residents in diverse medical settings. Feedback from both developed and developing institutions was positive. Knowledge acquired from participating included increased awareness of diagnostic tools, surgical procedures, social barriers to surgical care, and resource allocation and management.

Conclusion

An online collaborative learning space is an excellent avenue to educate residents on global surgery. The discussions educate and promote reflection on approaches to surgical problems with varying resources, and increased awareness for the social and institutional barriers for delivering surgical care. The platform assists in meeting several intrinsic CanMEDs objectives.
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2017 International Conference on Residency Education / La Conférence internationale sur la formation des résidents 2017

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Conference Abstracts / Résumés de la conférence (page 1)
ACE-01

Workplace-based Assessment in Competency-based Medical Education: Matching Tools to Purpose

C. Touchie¹, S. Ross²
¹Medical Council of Canada, Ottawa, ON; ²University of Alberta, Edmonton, AB

Competency-based medical education (CBME) has become the expected approach to health professions education and assessment in postgraduate training across all specialties in Canada and beyond. As residency programs strive to meet expectations of Competence By Design (RCPSC) and the Triple C Curriculum (CFPC), some common challenges have been identified. One of these challenges is how to effectively carry out workplace-based assessment. Uncertainty about which tools to use is further complicated by challenges at the system level, in faculty development, and even in the engrained thinking of preceptors. More complexity is added by trends, where a tool gains favour and is seen as the only solution to all CBME assessment challenges (until something else usurps it). Finally, program directors and preceptors are unsure as to whether their program’s existing tools are acceptable in the new world of CBME assessment.

ACE-02

The oral case presentation in trainee assessment and feedback: Unpacking a key workplace-based assessment activity

L. Melvin, J. C. Rassos, K. Kulasegaram, A. Kuper, D. M. Panisko
University of Toronto, Toronto, ON

The Oral Case Presentation (OCP) is a fundamental activity in daily clinical practice where a medical trainee presents a new patient case to a clinical supervisor. Beyond utility in patient care, OCPs play a key role in trainee education as an opportunity for directed feedback and assessment. The OCP has been formally recognized as a skill developed through progressive education, as it appears in OCP-specific milestones in the Royal College of Physicians and Surgeons of Canada CanMEDS 2015 framework. Currently, there is paucity of guidance for senior residents and clinical supervisors to use the OCP in assessment.
Optimizing coaching and feedback: Using the R2C2 (Relationship, Reaction, Content, Coaching) Model and learning change plan to facilitate performance improvement

J. Lockyer¹, A. Warren², E. Holmboe³, M. Zetkulic⁴
¹University of Calgary, Calgary, AB; ²Dalhousie University, Halifax, NS; ³Accreditation Council for Graduate Medical Education, Chicago, IL; ⁴Seton Hall University, Hackensack, NJ

The R2C2 model is a 4-phase iterative approach to delivering feedback and coaching that draws on existing collated performance data (e.g., daily feedback sheets, ITERs, OSCEs, observations) to provide an effective feedback session at 4-6 month intervals. The 4 phases include building a relationship, exploring reactions to the data, focusing on the content of the data, and coaching the trainee for change using a learning change/action plan. In this model, the preceptor/coach is the mechanism that drives and energizes the learner through studying and understanding their performance data and engaging the learner in co-developing a plan for change while recognizing the contextual and organizational factors that will facilitate or hinder the necessary changes.

The model is based on research and theory related to self-assessment, person-centred approaches to engagement, cognition and commitment to change. The model has been tested with residents across 5 different residency programs in Canada, US, and Netherlands and found to be feasible, adaptable, and useful in engaging learners in change and in monitoring progress on milestones and EPAs. It has also been used successfully with practicing physicians and is being assessed for use with physician clinic groups.

Can we build validity arguments for entrustment in milestone assessment?: Kane is able

B. Kinnear, M. Kelleher, E. Warm
University of Cincinnati Academic Health Center, Cincinnati, OH

You have assessed learners using ACGME milestones. How do you know this is valid? Workplace-based assessment of trainees is complex, and has relied on a number of recently developed methods, including entrustment of ACGME milestones. Trainee assessment relies on multiple inferences, leaps of faith, and judgments that must ultimately arrive at defensible decisions about learners, that can then be used for formative and/ or summative purposes. We will review the literature on use of entrustment in trainee assessment, and place this work within the context of Kane’s framework for validity arguments. Kane identifies four inferences in a validity argument: scoring, generalization, extrapolation, and implications. Developers and users of programs of assessment need to identify and examine these inferences to identify pitfalls in their own assessment systems and make improvements. We have developed a program of assessment based on entrustment of Observable Practice Activities mapped to ACGME milestones that has accrued nearly 500,000 data points to date. We will share these results, and ask participants to analyze strengths and weaknesses of our program’s validity argument through the lens of Kane’s framework. Participants can use these techniques to analyze their home assessment programs, and develop a research agenda going forward.
The role of Objective Structured Clinical Examinations as part of a program of assessment in Competency-based Medical Education

V. Daniels¹, D. Pugh²
¹University of Alberta, Edmonton, AB; ²University of Ottawa, Ottawa, ON

Residency Training in many jurisdictions will transition to Competency-Based Medical Education (CBME), an approach with greater focus on workplace-based performance outcomes called Entrustable Professional Activities (EPAs) such as “Diagnosing and Managing patients presenting to the emergency department”. Objective Structured Clinical Examinations (OSCEs) are an examination format involving multiple stations used globally for performance assessment in a standardized environment. Although an OSCE can be used to assess clinical performance across CanMEDS roles, with the transition to CBME many program leaders may wonder if the OSCE still has a role given the increased focus on workplace-based assessment. The overarching purpose of this workshop is to demonstrate how an OSCE can be an important part of a competency-based assessment framework.

Although having some knowledge of principles of validity, OSCEs, Entrustable Professional Activities (EPAs) and competency committees will be helpful, the presenters will cover these to ensure the session is accessible to a wide range of participants.

Assessing development of reflective practitioners

P. Harris
University of New South Wales, Sydney, Australia

This session will explore the concepts of reflection as applied to preclinical and clinical learning in medicine. Approaches to reflection in learning will be discussed. The workshop will formulate observable activities that indicate reflective practice. The session will explore assessment options for reflective practice, illustrated with examples from current use. Learning tasks associated with students and residents reporting reflective practice will be explored. Participants will be invited to identify or create assessment activities relevant to their context, and explore standards.
Using cognitive models to develop multiple-choice questions

D. Pugh¹, T. Rivard², I. Desjardins¹
¹University of Ottawa, Ottawa, ON; ²Medical Council of Canada, Ottawa, ON

As more and more programs begin the process of transitioning to a competency-based model of education (CBME), educators are being challenged to develop more assessment opportunities.¹ This has highlighted the need to increase exam content development in order to be able to meet the assessment needs of CBME. However, content development can be a very resource-intensive endeavor.

One innovative solution to this challenge has been the use of cognitive models (i.e., representations of the knowledge and skills that are required to solve a problem) to improve the efficiency of multiple-choice question (MCQ) development.² This approach was inspired by research related to the use of automatic item generation (AIG).³ In AIG, content experts develop a cognitive model which is then entered into a computer program that uses algorithms to generate items. Hundreds or thousands of MCQs can be generated from a single cognitive model. Importantly, the items developed using AIG have been shown to have similar psychometric properties to traditionally-developed items.⁴ In addition, AIG has been shown to offer a useful framework for the development of plausible distractors.⁵

The disadvantage of AIG is that it relies on the use of technology and algorithms that are not readily available to most item writers. However, many of its principles can be applied when developing MCQs using the cognitive model approach. Using this approach, item writers are asked to deconstruct their reasoning process to develop a cognitive model which, in turn, is used to create multiple MCQs without having to rely on technology. This approach is appealing because it is efficient, and can potentially lead to high-quality items by ensuring that MCQs assess application of knowledge rather than factual recall.

The goal of this workshop is to provide a novel framework for the development of high-quality MCQs using cognitive models.
Assessment: Cutting edge tools and practical techniques / L’évaluation : outils d’avant-garde et techniques pratiques

ACE-09

KeyLIME: Best assessment literature

**E. Holmboe¹, J. Sherbino²**

¹Accreditation Council for Graduate Medical Education, Chicago, IL; ²McMaster University, Hamilton, ON

Effective and valid assessment is an essential component of competency-based medical education (CBME). As CBME continues to influence health professions education, the field of assessment continues to evolve. During this interactive discussion, key papers on assessment from the past year will be highlighted. The important findings and their implications for front line educators will be discussed in an open forum.

ACE-10

The preceptor as the assessment tool: Evidence and exploration

**T. A. van der Goes¹, C. H. Bethune², T. Laughlin¹, T. Crichton³, K. Lawrence⁴, K. Schultz⁵, C. Brailovsky¹, M. Donoff¹, S. Hawrylyshyn¹**

¹College of Family Physicians of Canada, Mississauga, ON; ²Memorial University of Newfoundland, St. John’s, NL; ³Northern Ontario School of Medicine, Sudbury, ON; ⁴University of Saskatchewan, Regina, SK; ⁵Queen’s University, Kingston, ON

As post-graduate medical education moves increasingly towards competency based training and work-place based assessment, programs seek tools and skills that will ensure the valid and robust assessment of learner competence. While assessment of resident competence in various CanMEDS roles has the authenticity of being done in the work-place using direct observation, the work-place is opportunistic “non-standardized” and a rich source of assessment potential. Many programs are using nimble “assessment tools” such as Encounter Cards / Field Notes to gather assessment data. The working group on the certification process of the College of Family Physicians of Canada echoes Schuwirth and others that in work-place based assessment, the key is the user of the tool, rather than the tool itself. In clinical medicine this means the expert clinical preceptor.

ACE-11

Leveraging faculty committees to improve the assessment of competence and promotional decisions of residents

**K. M. Andolsek¹, J. Padmore²**

¹Duke University School of Medicine, Durham, NC; ²Georgetown University School of Medicine and MedStar Health, Washington, DC

In 2011, The Royal College of Physicians and Surgeons of Canada, the College of Family Physicians of Canada, and the Collège des médecins du Québec created national standards for evaluation and accreditation of residency programs. They include B 1.3.4 “The residency program committee or a subcommittee thereof must be responsible for the assessment of residents and… for promotion…,” and B 6.5: “the program must provide… document for each resident who has successfully completed the residency…(representing)… the views of faculty members directly involved in the residents’ education and not be the opinion of a single evaluator. It must reflect the final status of the resident and not be an average of the entire residency.” In the same year, as part of the “next accreditation system” the Accreditation Council for Graduate Medical Education required the over 9000 US programs, and its accredited international programs to have clinical competency committees. High functioning CCCs require intentional faculty development of team members. A “shared mental model” of resident performance must be identified and transparent to learners. The entire program benefits from clearly understanding how competency domains are taught and assessed. CCCs inform decisions regarding individual resident performance, but can are powerful tools in improving teaching, assessment, and the program’s core curriculum. Ideally resident progress on their milestones, informs the program’s own process of continuous quality educational improvement.
Accreditation in residency education / Agrément en formation des résidents

ARE-01

Is your Residency Program Committee working for your program

L. Murgaski, L. Probyn, K. O’Hearn, C. Puri
University of Toronto, Toronto, ON

The Residency Program Committee (RPC) is the core of an effective residency training program. Programs are complex systems, with many interacting components, which benefit from the input and viewpoints of the various members on the committee. Active participation of committee members through subcommittees and division of responsibilities is essential to fulfill the roles of the RPC, monitor the various aspects of the program and support the Program Director. In reviewing the internal reviews of 70 training programs at the University of Toronto we have identified some common areas that RPCs may be struggling with related to the B1-B6 standards of accreditation.

ARE-02

Residency accreditation reform town hall: New directions for the 21st century

R. Almond, I. Tardif, S. Taber, T. Phillips, D. Laliberté, A. Warren

1College of Family Physicians of Canada, Mississauga, ON;
2Collège des médecins du Québec, Mont-Royal, QC;
3Royal College of Physicians and Surgeons of Canada, Ottawa, ON; 4Dalhousie University, Halifax, NS

The Royal College, the College of Family Physicians of Canada and the Collège des médecins du Québec have been working together as the Canadian Residency Accreditation Consortium (CanRAC) for several years to evaluate, review and update the Canadian residency accreditation system for the 21st century. Working closely with institution and program level stakeholders, the three college partnership has developed a new conjoint accreditation system, known as CanERA (Canadian Excellence in Residency Accreditation). Included in this Town Hall session will be a discussion of the key components of CanERA and how the new system is designed to preserve the strengths of the current system, such as national standards, onsite evaluation of programs, and peer review, while also addressing specific areas identified as needing major transformation.

In particular, the new general standards, which provide greater clarity for programs and surveyors, will be distributed. Presenters and an expert panel will discuss how the new standards reflect the new content of the CanMEDS/CanMEDS-FM Framework and support the transition to competency-based medical education, while continuing to support programs that have not yet transitioned upon implementation of the new standards.
Accreditation in residency education / Agrément en formation des résidents

ARE-03

A different perspective on accreditation

N. Akdemir¹, B. Schreuder², T. R. Walters³, F. Scheele¹, S. Taber⁴

¹OLVG Teaching Hospital, Amsterdam, Netherlands; ²The Royal Dutch Medical Association (KNMG/RGS), Utrecht, Netherlands; ³Australian Medical Council Limited, Canberra, Australia; ⁴Royal College of Physicians and Surgeons of Canada, Ottawa, ON

There is a global struggle to assure and improve the quality of residency training. Many accreditation systems around the world are aiming for high quality residency training. Although the goals are more or less the same, the means for achieving these goals are different. These differences can be described in models and in these models the role of the actors are different. The actors are regulators, specialist colleges or societies, teaching hospital boards, directors of training sites, supervisors and trainees. Their responsibility for the quality of residency training vary across the globe as well as who has the power to influence the accreditation process.

Admissions: Selecting residents / Les admissions : selection des residents

ASR-01

This abstract has been withdrawn / Ce résumé a été retiré
## CB-01

**“In the meantime…” Getting ready for a transition to a Competency-based Residency Training Program**

**J. Sherbino¹, S. M. McIsaac², R. Anderson³**  
¹McMaster University, Hamilton, ON; ²University of Ottawa, Ottawa, ON; ³Northern Ontario School of Medicine, Sudbury, ON

The world is changing, particularly in medical education. The transition to competency-based medical education (CBME) requires an investment in educational resources, including protected time for educators, simulation and digital assessment platforms. The magnitude of change challenges invested educators with competing priorities and extensive opportunities for innovation.

This session will unpack the key enablers to integrate the functional elements of CBME into a residency training program. The ultimate goal is to answer the question… “What can I do now, to make this easier later?” Leveraging the successes and challenges of early Canadian CBME adopters, participants will identify strategies to integrate authentic work place assessments, aggregate and synthesize assessment data and engage clinical teachers in faculty development.

Change is hard. Using the themes described above, this workshop will also explicitly describe change management strategies with practical applications to CBME curricula. At the end of this session the participant will have identified one new thing they can implement at their center, a strategy to be successful in that change, and a follow up plan.

## CB-02

**Supporting Performance Improvement in CBME: Remediation, Excellence, and Everything in Between**

**A. Warren, L. Hazelton, M. Bosma**  
Dalhousie University, Halifax, NS

While the shift from time-based to competency-based medical education (CBME) will place new demands on those responsible for remedial training, another specific criticism of CBME has been its inability to foster “excellence” in those capable of achieving it. This workshop will explore the complexity of providing individualized learning plans to support specific learner needs in a CBME-era.

Drawing on work by faculty at Dalhousie University, a review of current practice and policies to support individualized learning will be presented. Facilitated discussion will follow. Participants will view two video cases of residents requiring an enhanced or enriched learning plan. One case will demonstrate a resident who has achieved competency and requires program enhancement in order to reach excellence, and the other, a resident who requires program enrichment to achieve competency. Working in small groups, participants will develop a customized approach to each case, followed by a large group discussion where participants share their insights and ideas.

Focusing on literature-informed best practice, a model approach to individualized program development will be described. The small groups will then re-visit the initial task, to determine whether changes need to be made in approach or content. Finally, participants will view a video in which a faculty member working with one of the residents from the earlier cases expresses challenges in developing and implementing an individualized learning plan. Participants will be asked to identify the supervisor’s needs, and share strategies to support and educate faculty.

A summary of learning will be provided at the end of the session. Participants will be encouraged to fill out a self-addressed card committing to an innovation or improvement related to remediation they plan to make at their site. Cards will be collected by the facilitators and sent out to participants three months after the workshop.
CB-03

Absolutely innovative: Programs that have radically redesigned training

M. Nousiainen¹, R. Anderson², S. A. Schipper³, E. Warm⁴, F. Scheele⁵
¹University of Toronto, Toronto, ON; ²Northern Ontario School of Medicine, Sudbury, ON; ³University of Alberta, Edmonton, AB; ⁴University of Cincinnati Academic Health Center, Cincinnati, OH; ⁵OLVG Teaching Hospital, Amsterdam, Netherlands

This symposium presents the experience of 5 different residency training programs from Europe and North America that have implemented the principles of competency-based medical education. It will provide insights on the challenges faced and the solutions provided during the implementation and maintenance of the implementation process. Particular discussion will focus on issues related to faculty, resident, and curriculum development, financial and structural support, and the important role assessment data has on trainee, faculty, and curriculum development.

CB-04

The value of milestones for learning, assessment and feedback

E. Holmboe, S. J. Hamstra
Accreditation Council for Graduate Medical Education, Chicago, IL

Residency and fellowship programs in Singapore, the Middle East and the United States are now engaged in using Milestones for curricular change and assessment. Milestones were created to provide a useful narrative, developmental framework, or rubric, to assist graduate medical education programs translate and implement the ACGME/ABMS six general competencies. As with most major educational changes, implementation can be a challenging and messy process. This session will explore early lessons learned from quantitative and qualitative research conducted in the early years of Milestones implementation across the globe. Lessons from implementation science will be shared and explored through small group breakout sessions. The session will include feedback from programs as part of the ACGME staff “listening tour” that is being used to improve the Milestones language and frameworks. Finally, key lessons on clinical competency committee processes will also be shared and discussed, including recent research on notable practices for group assessment processes.

CB-05

Competency-based Medical Education: Making it work for you

J. Chisholm, R. Doucet, C. Lushman
Dalhousie University, Halifax, NS

In 2012 the Future of Medical Education in Canada Postgraduate Project (FMEC-PG) recommended the introduction of competency based curricula into postgraduate programs. The Royal College of Physicians and Surgeons of Canada (RCPSC) responded by officially announcing their version of competency-based medical education, branded as Competence by Design (CBD). With CBD, the focus is on achieving pre-specified outcomes, known as Entrustable Professional Activities (EPAs) at various stages of training National specialty committees along with program directors, clinician educators and other experts are developing EPAs and associated milestones along with assessment strategies that are implemented across all universities in Canada. Each program in Canada will be tasked with translating the RCPSC’s plans into something functional at the local level.

Dalhousie University's Anesthesia Residency Program began competency-based medical education in July 2016 as part of a Fundamentals in Residency Education (FIRE) project. This workshop is designed to share the program’s experiences in the design and implementation process.
Competency-based education /
L’approche par compétences en formation médicale

**CB-06**

**Competence By Design: Lessons on implementing in your program**

J. R. Frank¹, A. Atkinson², A. Boucher³,
R. St. Croix¹,
¹Royal College of Physicians and Surgeons of Canada, Ottawa, ON; ²The Hospital for Sick Children, Toronto, ON; ³Université de Montréal, Montréal, QC

Competence By Design (CBD) is the Royal College’s flagship specialty CBME program. This session will review lessons learned from CBD implementation to date. Upon completion of this session, participants will be able to describe unique features of the CBD model for residency education; describe early lessons learned from the transformation of Canadian specialties and their implementation.

**CB-07**

**How do we measure trust?: Entrustment decision-making in postgraduate medical education**

M. Gomes¹, S. Johnston², M. Elios³, A. Al-ansari⁴
¹University of Ottawa, Ottawa, ON; ²University of Manitoba, Winnipeg, MB; ³University of Chicago, Chicago, IL; ⁴Hamad Medical Corporation (HMC), Doha, Qatar

Medical education is undergoing a paradigm shift. In the 1900s, the Flexner report created a precedent for education which focused on cognitive achievements and dedicated time. The expectations of society have evolved since Flexner, prompting a new approach: competency-based medical education (CBME). CBME focuses on the achievement of learning outcomes within multiple abstract competency frameworks. More recently, the concept of Entrustable Professional Activities (EPAs) has emerged as a suitable organizing element of CBME programs. EPAs outline the essential activities which define the core of a profession and assist in organizing abstract competencies into tangible, practical outcomes which can be the focus of instruction and assessment within CBME.

In this workshop, we explore the essential concept behind the idea of EPAs which is the process of entrustment. We start by reviewing the process of entrustment as the basis of the social contract between society and the medical profession. Concepts of trust in several domains are analyzed and we dive into one of the conceptual frameworks in order to better understand the complex and dynamic elements involved in the progressive entrustment of trainees. The interplay between instruction, assessment and entrustment within CBME is discussed and correlated with the situated and experiential learning theories. We show some of the current initiatives in the field and critique one of the few instructional and assessment tools that have been specifically designed around the concept of entrustment as the ultimate learning outcome in professional training. Finally, a practical approach to make justified entrustment decisions in PGME is proposed.
The competence continuum: using Entrustable Professional Activities (EPAs) to ensure a smooth transition from medical school to residency

A. Boucher¹, C. Touchie², L. Ste-Marie¹, F. Bhanji³
¹Université de Montréal, Montréal, QC; ²Medical Council of Canada, Ottawa, ON; ³Royal College of Physicians and Surgeons of Canada, Ottawa, ON

Entrustable Professional Activities (EPAs) are tasks that are part of the responsibilities specific to a medical specialty. In order to determine if the resident is competent to perform these tasks from the start of his/her training program and particularly during call, the resident must have been observed while performing them and have demonstrated his/her competency (ten Cate, 2005; 2013).

In order to better prepare undergraduate medical students for the crucial transition period of entry into residency, a pan-Canadian working group issued recommendations based on a list of 12 activities that residents should be capable of performing under indirect supervision on day one of residency (AFMC, 2016). This list was approved in principle by the deans of the 17 Canadian faculties of medicine, and the UGME Office teams are gradually implementing them.

Some of the 12 EPAs are more complex and involve several CanMEDS roles. Although milestones have been developed which outline certain expectations, these EPAs seem less easy to assess owing to the lack of evidence validating the process. In particular, the development of criteria for deciding whether the task can be entrusted to the resident (initially under indirect supervision) still requires reflection and discussion.
Competency-based education /
L’approche par compétences en formation médicale

**CB-09**

**Preparing for CBD in the meantime: An action oriented approach to ease the transition**

**A. Oswald¹, C. Abbott²**
¹University of Alberta, Edmonton, AB; ²Royal College of Physicians and Surgeons of Canada, Ottawa, ON

The Competence by Design (CBD) initiative is gaining momentum in Canada. Some disciplines are already actively engaged in CBD, and many other disciplines are scheduled to make the change in the next few years. People in these “later cohorts” tell us they are keen to get involved in CBD to ease their transition. If you are part of a discipline that has not yet started the Royal College CBD workshops there are many meaningful opportunities to prepare yourself, your faculty and your program in the meantime.

**CB-10**

**Guide pratique de la participation citoyenne comme outil de responsabilité sociale**

**J. Poitras, M. Bérubé**
Université Laval, Québec, QC

Cadre théorique: L’Organisation mondiale de la santé définit la responsabilité sociale comme l’obligation des facultés de médecine à répondre aux besoins de santé prioritaires des communautés qu’elles servent. Les facultés doivent adapter leurs curricula, stratégies pédagogiques et priorités de recherche afin d’être pleinement responsables socialement au regard de ces besoins de santé. Ceci pose la question d’un dialogue continu entre les facultés de médecine et les populations servies, soit la participation citoyenne aux activités d’une faculté, afin de moduler finement nos actions de responsabilité sociale et d’éclairer les changements apportés à nos programmes. Une telle participation citoyenne ne peut cependant être décrétée unilatéralement par les facultés, ce qui rendrait alors caduque cette volonté participative.

**Practical guide to citizen participation as a social responsibility tool**

**J. Poitras, M. Bérubé**
Université Laval, Québec, QC

The World Health Organization defines social responsibility as the obligation of faculties of medicine to meet the priority health needs of the communities that they serve. The faculties must adapt their curricula, educational strategies and research priorities in order to be fully socially responsible in relation to those health needs. This poses the question of ongoing dialogue between the faculties of medicine and the populations served, i.e. citizen participation in the activities of a faculty, in order to “fine tune” our social responsibility actions and provide guidance in making changes to our programs. However, the faculties cannot unilaterally decree the citizen participation process, since this would be incompatible with the very principle of voluntary participation.
Unpacking the “how” of implementing competency-based assessment

S. Ross, M. Chiodo, S. Schipper, M. Donoff, P. Humphries
University of Alberta, Edmonton, AB

As Competence By Design approaches ever closer, program directors and planners are grappling (to greater and lesser degrees of success) with how to implement competency-based education and assessment. The supports from the Royal College of Physicians and Surgeons of Canada (RCPSC) and the College of Family Physicians of Canada (CFPC) have assuaged some concerns about what competencies need to be addressed and assessed, but the biggest challenge continues to be the “how” of competency-based education and assessment. “How” is not a singular issue: in addition to determining how best to assess competencies (tools and processes), programs must also decide how to inform residents and preceptors about new systems and procedures, how to administer new systems and processes, and how to evaluate and validate the data needed for arriving at decisions about competence. In essence, there is more to the shift to competency-based education than just deciding on competencies and selecting tools; change management must also be navigated successfully.

This session will address the “how” of competency-based education and assessment from the perspective of a residency program that has been fully competency-based for seven years. While there will be a brief overview of how competencies are assessed in this program, the majority of the workshop will address the change management issues associated with moving from a traditional residency program to a competency-based approach. Issues such as implications for program policies, resources (human and monetary), and faculty development will be discussed through a lens of lessons learned. Large and small group discussions will address the various aspects of how, some prompted by case examples, some by participants’ own experiences. Input and sharing of experiences from all participants is strongly encouraged.
CB-13

Mind makeover: Cultivating a growth mindset in trainees to enhance competency based outcomes

T. Turner¹, M. Carbajal²
¹Texas Children’s Hospital, Houston, TX; ²Baylor College of Medicine, Houston, TX

Helping learners become reflective, competent physicians is an enormous and daunting task. As learners progress across the medical education continuum, they should increasingly become more responsible for their own growth as professionals. However viewing one’s abilities as “fixed” or “innate” limits this potential for growth. The performance target for these trainees is perfection and doing those tasks they already do well. The goal of this session, is to help program directors and other faculty identify and use techniques which can help facilitate a shift from a fixed to a growth mindset within the context of competency based outcomes (CBO). In essence, creating a mind makeover to enable continuous professional development and success in our trainees. This session will use the principles outlined in “Mindset: The New Psychology of Success” by Carol Dweck, PhD. Attendees will self-reflect on their own personal mindset to set the stage for the workshop and will participate in a variety of interactive tasks focused on building a growth mindset. Working in small groups, participants will identify behavioral characteristics of the mindset continuum and develop questions for trainee reflection. Next, attendees will edit summative feedback statements to move away from praise towards growth. After a large group debrief, attendees will practice coaching techniques using the four-stage R2C2 evidence and theory based facilitated reflective performance feedback model (building relationships, exploring reactions, exploring content, and coaching for change). At the conclusion of the session, participants will discuss other instructional methods/tools to stimulate the growth mindset and enhance CBO.
EQ-01

A continuous quality improvement framework that anyone and everyone can use

S. Dubrovsky, N. Korah, S. Zavalkoff
Montreal Children’s Hospital, Montreal, QC

To transform our improvement culture at the Montreal Children’s Hospital - McGill University Health Center, an interprofessional team instituted an approach to quality improvement based on Lean/Six Sigma principles. This team created a curriculum to provide a framework and tools to professionals across all levels, disciplines, and professions of our organization that is based in Lean/Six Sigma, experiential learning, and ongoing coaching. With the addition of Patient Safety as a competency in resident training, both residency teaching and faculty development in Quality Improvement efforts for Patient Safety are essential. This workshop, through the sharing of case studies, teaching key quality improvement tools and simulation-based exercises, will teach the basic philosophy and concepts of Lean/Six Sigma and continuous quality improvement that can be used to launch an improvement project in one’s own healthcare setting (or supervise a resident doing one).

EQ-02

Applying high-value health care in postgraduate education: A Canadian and Dutch perspective:

L. Stassen1, C. den Rooijen2, F. Smeenk3, C. M. Hillis4
1Maastricht University Medical Center, Maastricht, Netherlands; 2The Royal Dutch Medical Association (KNMG), Utrecht, Netherlands; 3Catharinaziekenhuis, Eindhoven, Netherlands; 4McMaster University, Hamilton, ON

This workshop aims to promote a critical practice-driven approach to high-value healthcare. Physicians learn that clinical decisions should be evidence-based. However, there is substantial variation in healthcare resource utilization that cannot be explained by variation in patient characteristics or preferences. Inappropriate application of healthcare resource generates waste, which is anything that does not add value to the health of a patient. Moreover, patients are harmed by over-diagnosis and overtreatment. At the same time, physicians need to address the new challenges of increasing patient needs and demands, which outgrow the available resources. A practice-driven approach could be the answer to these challenges. In this approach, processes and waste in healthcare are critically assessed from a residents’ perspective to achieve high-value care. In this workshop we will present examples and projects in residency training from Canada and the Netherlands. During the workshop participants will collaborate to synthesize, translate, and present a practice-informed strategy to reduce waste and increase value of healthcare to achieve high-value care.
EQ-03

Moving towards socially accountable residency programs: A thorn in the flesh from accreditation

A. Boucher¹, J. Poitras², J. Rourke³, P. Grand’Maison⁴, S. Razack⁵, C. Boelen⁶

¹University of Montréal, Montréal, QC; ²Université Laval, Québec, QC; ³Memorial University of Newfoundland, St. John’s, NL; ⁴Université de Sherbrooke, Sherbrooke, QC; ⁵McGill University, Montréal, QC; ⁶International Consultant in Health Systems and Personelle, Sciez-sur-Lémon, France

Four international experts in social accountability will discuss social accountability of residency programs, starting from general énoncés gathered from a workshop on the subject matter in Niagara Falls in 2016.

A socially accountable residency program:

- Has defined the population it serves;
- Has good knowledge of the needs of its population;
- Is aiming admission criteria at addressing the needs of its population;
- Is exposing its residents to diversity in collaborative approaches;
- Is conscious of its teacher’s diversity and promotes it;
- Is gearing curriculum towards the needs of its population;
- Is offering a diversity of practice settings and care models;
- Is offering as safe learning environment for patients, learners and teachers;
- Is nurturing equity and cultural safety;
- Has an evaluation model that includes milestones in social accountability;
- Is conscious of sustainable development issues and takes steps to assure minimal environmental impact of its activities;
- Is favouring social accountability clinical research/quality improvement projects from its residents, based on the needs of its population;
- Is evaluating the adequacy of the competencies attained by its residents with the needs of its population;
- Is measuring its own impact as a program on population health.

The experts will debate in both official languages of Canada (simultaneous translation will be available) and will focus on practical ways for a residency programs to be socially accountable.

French on next page
EQ-04

Handing over the Handover Toolkit: A comprehensive resource for teaching and assessing handover skills

Z. Bismilla1, J. Gleicher2, K. Huth3, T. McLaughlin2, D. Richardson2, H. Ward4, B. M. Wong5, J. Nuth6

1Hospital for Sick Children, Toronto, ON; 2University of Toronto, Toronto, ON; 3University of Ottawa, Ottawa, ON; 4University of Saskatchewan, Saskatoon, SK; 5Sunnybrook Health Sciences Centre, Toronto, ON; 6Canadian Medical Protective Association, Ottawa, ON

Improving handover has become a priority in efforts to improve patient safety. The Royal College of Physicians and Surgeons has incorporated handover within the Collaborator Role of the new competency-based CanMeds 2015 framework and as such programs will be required to develop handover skills in their trainees. Despite the growing need to teach and assess handover skill however, many educator lack expertise in this area having never learned or mastered the skill themselves. Handover resources for educators attempting to teach and assess the skill are lacking.

EQ-03

La migration vers des programmes de résidence socialement responsables, une épine dans le pied qui nous vient des organismes d’agrément : Un symposium bilingue

A. Boucher1, J. Poitras2, J. Rourke3, P. Grand’Maison4, S. Razack5, C. Boelen6

1University of Montréal, Montréal, QC; 2Université Laval, Québec, QC; 3Memorial University of Newfoundland, St. John’s, NL; 4Université de Sherbrooke, Sherbrooke, QC; 5McGill University, Montréal, QC; 6International Consultant in Health Systems and Personelle. Sciez-sur-Lémon, France

Quatre experts internationaux en responsabilité sociale discutèrent de la responsabilité sociale des programmes de résidence à partir d’énoncés émis suite à un atelier tenu sur le sujet à Niagara falls en 2016.

Un programme de résidence socialement responsable :

- A défini la population qu’il dessert (sa population de référence) ;
- Connaît bien les besoins de sa population de référence ;
- Module ses critères d’admission en fonction des besoins de sa population de référence ;
- Expose ses résidents à la diversité dans le cadre d’approches collaboratives ;
- Est conscient de la diversité de ses enseignants et la promeut ;
- Oriente le curriculum vers les besoins de sa population de référence ;
- Offre une diversité de milieux de pratique et de modèles de soins ;
- Offre un environnement d’apprentissage sécuritaire pour les patients, les apprenants et les enseignants ;
- Fait la promotion de l’équité et de la sécurité culturelle ;
- Dispose d’un système d’évaluation qui intègre des jalons en responsabilité sociale ;
- Est conscient des enjeux de développement durable et prend des mesures pour atténuer l’impact environnemental de ses activités ;
- Encourage les résidents à s’investir dans des projets de recherche clinique et d’amélioration de la qualité socialement responsables, à partir des besoins de sa population de référence ;
- Évalue la conformité des compétences acquises par ses résidents au regard des besoins de sa population de référence ;
- Mesure son propre impact comme programme sur la santé de la population.

Les experts vont débattre dans les deux langues officielles du Canada (une traduction simultanée sera offerte) et l’attention sera portée sur des approches pratiques pour les programme de résidence d’être socialement responsables.

EQ-04

Handing over the Handover Toolkit: A comprehensive resource for teaching and assessing handover skills

Z. Bismilla1, J. Gleicher2, K. Huth3, T. McLaughlin2, D. Richardson2, H. Ward4, B. M. Wong5, J. Nuth6

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Faculty development /
Le perfectionnement des corps professoraux

FD-01

**Bootcamp for Program Directors**

**F. Ankel¹, A. Atkinson², S. Gauthier³**

¹HealthPartners Institute, Bloomington, MN; ²The Hospital for Sick Children, Toronto, ON; ³Queens University, Kingston, ON

Upon completion of this session, participants will be able to list roles and responsibilities of a Program Director—what they should be doing, and what they should not; discuss common challenges faced by PDs and propose ways of addressing them; describe tips and tricks for leading and managing a residency program; describe an approach to dealing with the learner in difficulty; outline models for mentoring and practice mentoring skills; discuss resilience in the role as well as thinking about future visioning and transitions; Learn the Top 10 tips for Program Directors!

FD-02

**Words Are Powerful, Use Them Wisely: Coaching and Clinical Teaching**

**D. Richardson¹, N. Dudek², J. Karpinski³**

¹University of Toronto, Toronto, ON; ²University of Ottawa, Ottawa, ON; ³Royal College of Physicians and Surgeons of Canada, Ottawa, ON

Useful, timely information on performance (feedback) promotes learning and changes in behavior. Providing this feedback has been a challenge for postgraduate medical education. Residents say they want more but sometimes there are concerns noted with how they receive it. Clinicians identify numerous barriers to providing useful feedback in the busy clinical environments in which they work. Training programs need documentation of performance so that they can guide ongoing improvement strategies for their residents but also for decisions about progress and achievement. Recent literature has promoted the value of written narrative feedback and assessment both with respect to the acquisition of competencies but also with regards to identifying trainees in difficulty. Traditionally, training programs have struggled to provide quality documentation of resident performance. CBME and its focus on achievement makes this even more relevant.

The coaching model is promoted as part of progressive improvement throughout physician lifespan. Coaching models of teaching are gaining traction in medical education, in part because of their potential to remedy these deficits outlined above and to stimulate learners' growth and progress. The concept of coaching familiar to physicians from their experiences in other contexts but what does it mean in medical education? The coaching model is an approach that has potential to make teaching more meaningful for individual residents.
FD-03

How to best teach leadership?
A scholarly conversation on curricula

R. Cavalcanti¹, K. Caverzagie²,
T. Turner³, J. Nordquist⁴, S. Gauthier⁵
¹University of Toronto, Toronto, ON; ²University of Nebraska Medical Center, Omaha, NE; ³Texas Children’s Hospital, Houston, TX; ⁴Karolinska Institutet, Stockholm, Sweden; ⁵Queens University, Kingston, ON

Clinician Educators responsible for curriculum design in postgraduate medical training often grapple with how best to teach leadership. Many leadership behaviours can readily be identified and often manifest during residency. However, the question of how to foster the development of leadership skills remains a thorny one. This derives partly from varying definitions of “leadership” and partly from the variable opportunities to exercise leadership during residency training. ICRE 2017 in Quebec City, QC will provide a forum for exploring “Leadership and Change in Residency Training”. Building on this theme the Clinician Educator Program will allow participants to engage in scholarly discussion over dinner, led by a panel of international leaders in Medical Education. In a highly interactive format, participants will explore together how to develop leadership curricula that are practical and feasible.

FD-04

Leading from the bottom up: Effecting change for struggling programs

R. Husa, A. Aalamian, L. Snell
McGill University, Montréal, QC

If education has transformative power, then why do some educational milieus appear “resistant” to change? In particular, Programs already in difficulty are the ones in whom effecting change sometimes becomes most difficult. Often, lack of awareness and engagement on part of both educational leaders as well as struggling Programs are detrimental to a residency Program’s well-being.

We propose that a structured, consistent, gradual, and considered approach is required in order to foster meaningful and lasting modifications.
Faculty development /
Le perfectionnement des corps professoraux

FD-05

Playing improvisational jazz: A critical capability for educational leaders

M. C. Wilson
University of Iowa, Iowa City, IA

Clinical educators frequently improvise in our work caring for patients and supervising clinical learners. A curious observation is that at times these same talented clinician educators may improvise less often when they are serving as educational leaders. Under-expressed improvisation can manifest as difficulties maneuvering through challenging predicaments they encounter.

Commonly encountered and charged predicaments can run the gamut from launching new initiatives to dealing with conflict or a struggling learner. A Program Director's ability to maneuver through these challenges can either enhance or degrade the educational tone and morale of a department's learning environment. Typically situational awareness, nuanced communication skills, and a willingness to improvise based on emerging vibes are required to hurdle these predicaments successfully.

FD-06

Everything I ever needed to know about being a program director I learned at ICRE#3: Effective mediation

H. Writer¹, A. Atkinson², T. Baron³, M. Ladhani⁴, S. Manos⁵

¹University of Ottawa, Ottawa, ON; ²The Hospital for Sick Children, Toronto, ON; ³Northern Ontario School of Medicine, Sudbury, ON; ⁴McMaster University, Hamilton, ON; ⁵IWK Health Centre, Halifax, NS

In order to provide residents with an optimal training experience, program directors must effectively perform duties across a wide spectrum of domains including administration, curriculum development and delivery, assessment and evaluation, resource allocation and accreditation. Regular review and revision are also required in response to changes in medical education theory and practice. Despite possessing enthusiasm and drive, many program directors find themselves neither trained nor prepared for successful execution of these tasks. This workshop is the third in a proposed series of five developed in response to feedback and demand from program directors who attended the ICRE 2014 Workshop “Program Director Confessions”. The series is designed to provide continuing, context-specific faculty development on an annual basis for program directors of all experiences and program sizes, while also providing opportunities for networking and collaboration.

Program Directors take on a leadership role that often finds them navigating challenging situations/relationships such as managing service to education expectations and conflicting opinions on aspects of the resident training curriculum. These negotiations often involve personnel with diverse roles throughout the institution. Program Directors must acquire these critically important skills in order to resolve conflicts with colleagues, other team members, supervisors, and those in hospital/administration leadership positions.
FD-07

Theories of learning: The underlying anatomy of residency education?

C. S. Morris, J. Brown
Queen Mary University London, London, England

The views we hold about learning shape our practice as medical educators, researchers and scholars – yet how often do we pause to examine the views we hold? How often do we consider the ways in which learning theories may help us analyse and extend our practice as educators?

This interactive and practical workshop presents opportunities to look at residency education through a number of ‘theoretical lenses’, with an emphasis on ways to enable learners to make connections between ‘working and learning’ and ‘classroom and clinic’.

FD-08

Developing faculty to teach leadership using common open-source leadership modules

D. Meschino¹, M. Chan², A. Matlow¹, D. Dath³, J. Busari⁴, D. Keegan⁵, G. Dickson⁶
¹University of Toronto, Toronto, ON; ²University of Manitoba, Winnipeg, MB; ³McMaster University, Hamilton, ON; ⁴Maastricht University/Zuyderland Medical Center, Maastricht, Netherlands; ⁵University of Calgary, Calgary, AB; ⁶LEADS Collaborative, Victoria, BC

The Toronto International Summit on Leadership Education for Physicians (TISLEP) articulated key principles for physician leadership education in 2014. Subsequently, under its umbrella, a common, globally-relevant, contextually adaptable competency-based leadership curriculum for residents is under development. Nine case-based modules aligned with the LEADS leadership and CanMEDS competency frameworks are freely available online and ready for implementation. Each module includes tips and resources for faculty and can serve as faculty development toolkits.
Faculty development /  
Le perfectionnement des corps professoraux

**FD-09**

**Rapid design and delivery strategies: Faculty development lessons from the leading edge of competency-based curriculum implementation**

**S. Berry, S. Glover Takahashi, P. Campisi**

University of Toronto, Toronto, ON

Expectations of faculty in the era of competency based curricular reform are evolving at a rapid pace in many health profession educational programs, systems, regions and countries. The wide-ranging changes and the pace of those changes benefit from faculty development strategies that are flexible and adapt to concurrently meet the diverse needs of multiple groups including faculty, learners and educational leaders involved in CBD/CBME.

**FD-10**

**Training the trainers: Teaching your faculty how to use workplace based assessment**

**N. Dudek, W. T. Gofton**

University of Ottawa, Ottawa, ON

WBA is a key part of the overall assessment strategy for Competence By Design. Two key aspects of WBA are the use of entrustment scales and the provision of high quality narrative assessment. It is imperative that clinical teachers become familiar with both entrustment and narrative assessment.

WBA demands that clinical teachers observe their trainees, both directly and indirectly. This is often cited as a challenge by busy physicians.

Faculty development is required to ensure that all clinical teachers understand the key issues and develop strategies to overcome the perceived barriers to successfully using WBA on a regular basis. The RCPSC has developed tools to assist the physicians responsible for overseeing trainee assessment to offer this faculty development at the local level. One of these tools is a faculty development workshop whose format and slides can be altered for delivery at local institutions.

Today’s ICRE workshop follows a “train the trainer” format to build capacity for physicians to adapt the RCPSC workshop and offer it at a local level.
FD-11

From start to sustainability: The challenges and opportunities of faculty development in a novel setting

T. T. Agustsson¹, D. Black², W. Wade³


While Iceland has had a medical school since 1911, further postgraduate training has traditionally involved travelling abroad. Iceland was badly hit by the financial crisis of 2008 resulting in severe problems and concerns around junior doctors staffing and training. The need for comprehensive educational leadership, development, and change for the whole country was soon recognised. Following preliminary discussions in 2014 formal agreement were made between the UK Joint Royal College of Physicians Training Board (JRCPTB), the Education Department at the Royal College of Physicians and Landspitali- the National University Hospital of Iceland. The aim was to implement, support, and accredit a 3 year core medical postgraduate training programme in General Internal Medicine in Iceland according to UK and international standards.

Although both JRCPTB and the Education Department have substantial international experience, this is the first time a complete UK training programme is implemented in a different country. Effective faculty development was absolute key to the success of this project.

FD-12

Sorry, it’s cancer: Teaching practical communication skills in an interprofessional setting

I. Yang¹, S. Silva¹, M. Chan¹, D. Dath¹, S. Holt², J. Adolphe³

¹McMaster University, Hamilton, ON; ²Hamilton Health Sciences, Hamilton, ON; ³Care 2 Collaborate, Hamilton, ON

Difficult conversations are ubiquitous in contemporary clinical practice. Breaking bad news (BBN) is often a stressful event for learners, and is a skill that can be improved through guided practice. Effective communication encourages patients to partner and participate in their care, thereby improving their adherence to treatment plans and outcomes. We need to teach practical communication skills to learners through guided clinical experience while ensuring optimal patient care.

While the responsibility of delivering bad news often belongs to the physician, patients are supported by all health care practitioners in understanding information given to them. As BBN is an ongoing and longitudinal process, the healthcare team must work together before, during, and after the delivery of bad news in caring for the patient. This session will explore the interdisciplinary nature of BBN, and the importance of involving other health care providers in essential communication. We will examine the perspective of the patient and those of the practitioners caring for them throughout their experience.
Faculty development /  
Le perfectionnement des corps professoraux

FD-13

Group peer review boot camp: A train-the-trainer workshop for your institution

G. Sullivan1, J. Sargeant2, B. Wong3, I. Philibert4
1Journal of Graduate Medical Education, Chicago, IL; 2Dalhousie University, Halifax, NS; 3University of Toronto, Toronto, ON

Clinician educators can gain valuable writing and critical literature appraisal skills by reviewing for clinical and medical education journals. However, many educators have not developed an efficient approach and lack confidence in evaluating study elements, such as methods and results. Clinicians are rightfully cautious about adding any new ‘volunteer’ work to their overcrowded schedules. Yet reviewing papers can generate opportunities to write commentaries and position papers, and to join editorial boards. Also, faculty who reviews in a particular area can keep track of early developments and note potential collaborators for future activities, such as workshops, symposia, and research. In contrast to individual review, reviewing in a group format allows novice reviewers to improve confidence and skills, and may result in more comprehensive reviews.

An added benefit of group peer review is that residents and fellows learn to interpret papers with evidence-based medicine approaches through journal clubs and other group activities. When these trainees are fully engaged in an interactive format, learning is enhanced. Over time, use of pertinent questions as a scaffold to ensure a consistent approach leads to deeper understanding of complex concepts and methods. Program directors and educators need to role model a fearless, yet rational, approach to evaluating new information. Programs that promote ongoing, critical analysis of medical knowledge reinforce the message of life-long learning.

FD-14

Understanding, diagnosing, and teaching residents with clinical difficulties

J. Fredette1, R. Bounds1, J. McGhee1, A. Ruest2
1Christiana Care Health System, Newark, DE; 2Maimonides Medical Center, Brooklyn, NY

With the increased emphasis on Competency Based Education (CBE), educators are tasked with evaluating and addressing resident deficiencies more than ever before. Most front line clinical educators can identify a resident who is behind their peers, or just “doesn’t get it.” But clinicians receive little to no training in the assessment of specific clinical or cognitive deficiencies. Moreover, once these issues are discovered many educators struggle with developing an approach to teach and mentor residents in overcoming their individual deficiencies.
Humanities and history in medical education / Sciences humaines et histoire de l’éducation médicale

HIS-01

History of medicine can contribute to physician competency

D. M. Gilchrist, G. Rakovich
History and Heritage Advisory Committee, Royal College of Physicians and Surgeons, Ottawa, ON

Rather than just a compendium of names, dates and past events, history of medicine provides important perspectives and insights into current medical education, research and clinical practice.

History of medicine is a comprehensive collection of observations on the evolution of medical philosophy, technology and knowledge, allowing us to understand evolving concepts of disease, therapeutics and medical organization. Further, by virtue of its interdisciplinary nature, history of medicine provides essential commentary on the social, economic and political context of our profession. That is - not only the ‘how’ of where medicine is today but the ‘why’.

The skills derived from exploring the historical aspects of medicine encourage investigation, strengthen judgment and enhance critical thinking. Such study can provide not only pragmatic knowledge but the enhancement of professional behaviors. History of Medicine captures the attention, fires the imagination and engages the intellect.

Key historical themes which could be incorporated into resident education include ‘the changing burden of disease, the social determinants of health, the contingency of medical knowledge and practice, and the complex meanings of therapeutic efficacy’ (from Making the Case for History in Medical Education by Jones, Greene, Duffin and Warner, doi:10.1093/jhmas/rui026).

HIS-02

Seeing ourselves and others: Developing empathic future medical leaders through visual art

J. Zazulak, N. Knibb
McMaster University, Hamilton, ON

Over the past several years much has been written about the importance of developing reflective healthcare professionals who are able to provide compassionate, caring, and sustainable healthcare. There is mounting evidence that these traits can be taught in the art gallery. In 2010, The McMaster University Department of Family Medicine and the McMaster Museum of Art introduced the Art of Seeing™, an art-based visual literacy course for Family Medicine Residents. Through facilitated discussions and evidence-based looking, residents interact with each other and selected works of art to improve their individual and collective abilities to find deeper meaning in their professional and personal journeys. The Art of Seeing™ reflects our responsiveness to Canadian health humanities education and the goals of The Royal College of Physicians and Surgeons of Canada’s CanMEDS Physician Competency Framework.

The Art of Seeing™ has expanded beyond medicine and is now a part of McMaster’s Centre for Continuing Education Leadership in Community Engagement Certificate Program where development of visual literacy can improve observational proficiency and the development of empathy, a key skill for leadership.
Health policy and residency education /  
Les politiques sur la santé visant la formation des résidents

**HP-01**

**Tracking change in medical residencies and the physician workforce: What we know and what we need to know**

**S. A. Slade, S. DiMillo, A. Shrichand, C. Jacob, D. Fréchette**

Royal College of Physicians and Surgeons of Canada, Ottawa, ON

Residency training plays a key role in shaping the future physician workforce and in establishing the healthcare system's capacity to respond to patient needs. Changes in the numbers and types of trainees have a variety of downstream impacts. These include, for example, patient access to primary and specialized medical care, surgical wait times, physician employment opportunities, and practice workloads. Recognizing these downstream impacts, the Medical Workforce Knowledgebase was established to track physician supply and provide data in support of health workforce decision-making. The Knowledgebase integrates authoritative data from multiple sources to provide a clear picture of how medical residencies and the physician workforce are changing. While it has become easier to highlight major physician supply changes, it is important that this information be viewed alongside broader measures of population health, healthcare needs and health system performance.
Learning analytics /
L’analytique de l’apprentissage

LA-01

Data, development, and diffusion: The learning analytics hat trick of medical education

E. Hall, B. L. Gas, J. Kreuter, H. Billings
Mayo Clinic, Rochester, MN

The term “learning analytics” can be intimidating; while it is common to use data and measurement tools in biomedical research and clinical practice, medical education has been slow to adopt similar practices. However, the changing learning ecosystem, with demands for personalized instruction, adaptive learning, and deliberate practice, make it crucial for medical educators to understand the value of educational data and learning analytics. Therefore, similar to the master adaptive learner conceptual model, it is essential to strive to develop “master adaptive medical educators” by advancing proficiency in learning analytics. Using existing faculty development opportunities to build a community of data-literate medical educators who can identify, access, and interpret learning analytics to improve learning outcomes can be one effective strategy.

Medical educators need to be data stewards and understand (1) what the data means, (2) how to share it, and (3) implications for learners, pedagogical decisions, and curriculum. Few medical educators are familiar with the capability of learning management systems and tools. Opportunities exist to clearly demonstrate the capacity of these systems and tools to collect, analyze, and report pertinent learner, faculty, and curricular information. In order to effectively and efficiently build best practices and share lessons learned, a common level of understanding and shared vocabulary must be established.

LA-02

Learning analytics: Insights for learners and training programs

R. Cavalcanti¹, T. M. Chan², S. J. Hamstra³
¹University of Toronto, Toronto, ON; ²McMaster University, Hamilton, ON; ³Accreditation Council for Graduate Medical Education, Chicago, IL

Data on learners’ performance is increasing exponentially with the advent of electronic assessment tools and computer enhanced learning activities. Modern IT tools provide solutions for combining and visualizing this data for the benefit of learners, supervisors and training program. This can help provide feedback to learners on their progress and attainment of skills, helping to guide learning and tailor instruction. However, the field is developing rapidly and educators are still articulating best practices in implementation.
Leadership education / Formation en leadership

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<td><strong>Strategic Leadership on Shifting Sands: Challenge, Change, and Collaboration</strong>&lt;br&gt;L. Snell¹, S. Razack¹, K. Imrie², J. Nordquist³&lt;br&gt;¹McGill University, Montréal, QC; ²Sunnybrook Health Sciences Centre, Toronto, ON; ³Karolinska Institutet, Stockholm, Sweden&lt;br&gt;This intensive full day course is aimed at early career educators or emerging education leaders such as program directors and clinician educators who have recently taken on education leadership roles. By the end of the course participants will have developed a number of leadership skills, reviewed the leadership theories and concepts underlying them, and will be able to apply these to their own leadership practice. There will be ample time for small group work, for reflection and application. Participants will have the opportunity to interact with education leaders who have led change initiatives at major education organizations.</td>
<td><strong>Change Masterclass: From Theory to Practice</strong>&lt;br&gt;R. St. Croix¹, G. Bandiera²&lt;br&gt;¹Royal College of Physicians and Surgeons of Canada, Ottawa, ON; ²University of Toronto, Toronto, ON&lt;br&gt;Across the globe, the pace of change is quickening and such change is becoming more disruptive for healthcare systems, organizations, communities and leaders. Effecting positive change is a critical element of leadership. This session is designed for current and future healthcare leaders (i.e. program directors, site education coordinators, education leaders, faculty developers) who are increasingly required to accelerate and realize change and improvement, often with the added assumption that it should seem effortless. These challenges require fundamentally altering the way we go about making change happen as many of the methods we currently use haven’t evolved over decades.</td>
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LE-03

What's in a Name? Learning to Lead in Residency

T. Foster¹, S. Liu¹, A. Zbehlik¹, D. Geffken²
¹Dartmouth-Hitchcock Medical Center, Lebanon, NH; ²Concord Hospital, Concord, NH

In this interactive workshop we will explore approaches to teaching and learning leadership in residency. The Dartmouth-Hitchcock Leadership Preventive Medicine residency combines training in preventive medicine with many other specialties, with a focus on system change and improvement. Given our program’s name, we have faced the explicit challenge of addressing how to teach leadership for over a decade, and our approach continues to evolve.

LE-04

Developing emotional intelligence in your trainees

G. Singhal¹, A. Acosta², L. Zuniga²
¹Texas Children’s Hospital, Houston, TX; ²Baylor College of Medicine, Houston, TX

This practical and fast-paced experiential workshop will highlight the importance of emotional intelligence (EI) that residents can utilize when caring for patients and other professional situations. Emotional intelligence is the ability to identify and manage your own emotions and the emotions of others. It is generally said to include three skills: 1. Emotional awareness, including the ability to identify your own emotions and those of others; 2. The ability to harness emotions and apply them to tasks like thinking and problem solving; 3. The ability to manage emotions, including the ability to regulate your own emotions, and the ability to cheer up or calm down another person. EQ maps onto the CanMEDS competency framework and is consistent with a package of intrapersonal and interpersonal competencies within the roles of Professional, Communicator, Collaborator, and Leader.
Leadership education / Formation en leadership

LE-05

Giving program directors a lift: Implementing a purpose-built 360

L. Probyn, S. Glover Takahashi, G. Bandiera
University of Toronto, Toronto, ON

As leaders, program directors must navigate a complex academic environment that is constantly changing and in which there are many complicated inter-relationships. Therefore, program directors require a broad and complex constellation of competencies. Some but not all program directors have demonstrated previous leadership experience and few get tailored formal feedback or development during their tenure. Using key theoretical concepts from both the leadership and social sciences literature bases along with a national validation exercise, a program director multi-source feedback (MSF) instrument was developed. We then drew on the literature around feedback and performance enhancement to design and implement a structured process to deploy the MSF for program directors.

LE-06

Leadership and management education for effective teams and relationships

D. Meschino¹, A. Thakur²
¹University of Toronto, Toronto, ON; ²Centre for Addiction and Mental Health, Mississauga, ON

Leadership is needed for improvements in healthcare, from point of care to healthcare systems functioning. Faculty and residents have a responsibility to collaborate in these enhancements as exemplified by CanMEDS 2015 role change from Manager to Leader. The new Competency Based Medical Education (CBME) CanMEDS2015 roles call for physicians to work collaboratively in teams to improve patient safety and quality of care. Developing awareness (self/other) and conflict management are two critical skills in collaborative leadership of teams.
LE-07

Once upon a time: How storytelling facilitates advocacy

B. Bigham
McMaster University, Hamilton, ON

Narrative medicine - in laymans terms, telling stories about people where stuff happened to them - has existed for millennia. Storytelling regained prominence in medical education with the establishment of problem-based learning. By using the story of a patient, it was thought students would better understand the educational objectives of a topic. As residents search for ways of advocating for individual patients and the populations they serve, the role of storytelling can expand beyond PBL and onto the laptop and cell phone screens of those they seek to reach, be it learners, patients, or the public.

LE-08

LEAD 2.0: A model for interprofessional leadership curriculum development

J. D. Hartzell, B. Sadowski
1Uniformed Services University, Bethesda, MD; 2Walter Reed National Military Medical Center, Bethesda, MD

Many graduate medical education (GME) trainees, junior nurses, and allied health professionals complete training with exceptional clinical skills, but are not equipped to assume leadership roles or work well within teams. Walter Reed National Military Medical Center’s Department of GME developed an interprofessional leadership curriculum called LEAD (Leadership Education and Development) 2.0 in 2016. The goal of LEAD 2.0 is to fill the gap for those assuming leadership positions, and to enhance the leadership skills of all trainees.

LEAD 2.0 was derived from a systematic review of existing leadership curricula as well as a local needs assessment focusing on content, format, barriers, and logistics. Key elements of the systematic review and needs assessment will be discussed to help provide best practices for others attempting to start a leadership program. The LEAD 2.0 curriculum is composed of 8 core topics: leadership fundamentals (leadership styles, definitions, etc), mentoring and coaching, emotional intelligence, conflict resolution, feedback, managing effectively, building an effective team, and implementing change. Teaching methods are interactive and based on the Kolb Learning Cycle and Adult Learning Theory. LEAD 2.0 sessions occur monthly and are 1.5 hours long.
Physician health and wellness /
La santé et mieux-être des médecins

PHW-01

Taking action: Integrating resilience and wellbeing into the postgraduate training curriculum

H. Levy, B. Hayes, L. Prihodova, A. M. O’Shaughnessy
Royal College of Physicians of Ireland, Dublin, Ireland

The interest in doctors’ health and wellbeing is growing internationally. This can be seen with the increase in awareness, doctors’ willingness to openly discuss these issues and the initiation of wellbeing services. In a recent national study that explored wellbeing in Irish hospital doctors found that both consultants and trainees reported a high prevalence of psychological distress and burnout, and low levels of personal and workplace wellbeing. International evidence shows that the issue of doctors’ health and wellbeing is not unique to Ireland.

As a postgraduate training body, we recognise the urgent need to develop a support programme for our trainees and members. We created a wellbeing programme to equip our doctors with tools and techniques to not only ‘survive’ in what was termed psychotoxic working conditions, but also to enable them to flourish through resilience training interventions.

PHW-02

Promoting wellness among residents: How to get your departmental program off the ground

J. Bodley, M. Farrugia
University of Toronto, Toronto, ON

The ability of a physician to maintain their own physical and psychological wellness is a new component of the Leader Role in the CanMeds2015 framework. As with all CanMeds roles, residency programs are obligated to teach directly to this objective, and faculty must be active positive role models. Several years ago, we received the mandate to develop a resident wellness program within our department. The program has been well received by residents and faculty alike. Our philosophy is rooted in the CanMeds role but extends it further to include physical, psychological, professional and social aspects of wellbeing. Our goal is to improve resilience to allow our residents to have these skills at hand as they face the challenges of life and practice in their present and their future. We use an individualized approach with one-to-one meetings, group workshops that reflect the stated needs of our residents and quasi-social events that mask a deliberate curricular initiative!
PHW-04

How can I support resident resiliency?: A workshop for anyone in the postgraduate environment

K. Williams, A. Ritsma, K. Nikel
Resident Doctors of Canada, Ottawa, ON

Resiliency is the ability to recover from or adjust easily to adverse situations. It is a critical trait for individuals working in high-risk environments such as healthcare. Resiliency training equips learners with the necessary skills to effectively identify, cope with, and recover from challenging experiences in their personal and professional lives, while setting them up for rewarding and sustainable careers.

At present, there is no national approach to providing resiliency training to residents. While most postgraduate programs provide residents with access to wellness resources, what is lacking is a consistent curriculum that is evidence-based and provided to all residents, regardless of where they train.

In order to address the pressing need for a national resiliency curriculum, a need supported by the Canadian Medical Association at their 2016 General Council Meetings, Resident Doctors of Canada (RDoC) has developed a skills-based Resiliency Curriculum to help mitigate the negative effects of stress during residency.

With content support from the Mental Health Commission of Canada and the Department of National Defence, RDoC’s Resiliency Curriculum promotes the importance of mental resiliency in physicians by fostering supportive and positive learning environments. It advocates for a systematic approach to understanding and addressing anticipated stressors, and assists residents in overcoming personal adversity by providing them with tools to better support themselves, their peers and their patients.

The main component of RDoC’s Resiliency Curriculum is the resiliency training workshop for residents, an interactive and practical session delivered peer-to-peer. In addition to this main module, RDoC is developing a supplementary module tailored for those in leadership roles in postgraduate medical education. These include, but are not limited to: chief resident, program director, program administrator, wellness office staff, and postgraduate deans. The leadership module is meant to be delivered using a separate workshop designed to help leaders support and strengthen resident resiliency.

PHW-03

How to keep the fire burning without being consumed by flames: Building resiliency and passion

T. Turner¹, L. Bass², L. Zuniga²
¹Texas Children’s Hospital, Houston, TX; ²Baylor College of Medicine, Houston, TX

The practice of medicine is extremely rewarding but can also be demanding and stressful. Work overload, lack of control, insufficient rewards, and breakdown of communication are some of the factors that have a negative impact on physicians. Developing and maintaining resilience is crucial in preventing burn-out, compassion fatigue, medical errors, professionalism lapses, major depression, and poor quality patient care.

Preserving personal resiliency and vitality throughout one’s career is paramount for professional wellness and productivity, yet this has, historically, not been adequately addressed in most training nor faculty development programs. According to Schwartz and McCarthy, time is finite but our energy is renewable. Physical, emotional, mental and spiritual energies can be renewed and strengthened through specific behaviors, actions and mindsets.
Physician health and wellness /  
La santé et mieux-être des médecins

**PHW-05**

**Integrating mindfulness into residency education to promote wellness: Leading change to sustain professional identity**

**C. Gonsalves, M. Sanchez-Campos, H. MacLean**  
University of Ottawa, Ottawa, ON

Medical training and the practice of medicine continue to be associated with high levels of poor mental health and burnout. Physician stress and burnout have been linked with medical error, suboptimal patient care, and poor communication skills. These rates are not declining despite the restructuring of the delivery and assessment of training curricula, increased access to medical information, and e-tools to streamline patient care.

Mindfulness practice - fostering an ability to pay attention, in the present moment, on purpose and with compassion towards self and other, -has been shown to reduce anxiety and stress levels in medical professionals. Even relatively short interventions result in an increase in the volume of the grey matter of the areas in the brain involved with emotion regulation, memory and empathy, and a decrease in the volume of the amygdala, associated with responses linked to fear conditioning. Mindfulness practice has been shown to improve professional performance by reducing burnout levels and mood disturbance, and increasing empathy towards patients.

Leading change in residency training to include the addition of mindfulness instruction therefore offers a means to rethink how we approach the individual learner’s personal wellness as linked with their professional competence. Providing teaching on this practice that promotes self-monitoring through self-awareness has the potential to transform our learners’ through early recognition of cognitive biases, avoidance of technical errors, and awareness of emotional reactions. This may sustain their personal commitment to this profession of healing while supporting quality and safety in patient care.
Plenary sessions / Séances plénières

**PS-01**

Conference opening plenary: The Buffalo Experiment: Alive and well in medical education

**R. Reznick**
Queen's University, Kingston, ON

Medical education is both an art and a science, and a specialty on its own. When Dr. Richard Reznick embarked on his journey in medical education, it was an oddity and an experiment, while in the last 35 years, it’s become mainstream, accepted and celebrated. In this lecture, Dr. Reznick will share lessons learned in the course of his career in medical education while arguing the importance of developing a program of research, the value of hospital and university partnerships, and graduate studentship as an essential ingredient in medical education scholarship.

**PS-02**

Plenary panel: Leading change in medical education

**E. A. Ahmed Arab**¹, **S. Fleming**², **L. Flynn**³, **R. Rogers**⁴

¹King Abdulaziz University, KAU Jeddah, Saudi Arabia; ²National Health Service & British Orthopaedic Trainees Association, London, United Kingdom; ³Queen’s University, Kingston, ON; ⁴University of Kentucky, Lexington, KY;

Implementing change in medical education is notoriously difficult. What kinds of leadership abilities are needed to successfully bring about innovations in medical training around the world in the 21st century? During this interactive panel discussion, you will hear from medical educators who have influenced their organizations, hospitals and colleagues to consider new models and methods in residency training in a variety of contexts from around the world. Each of the panelists have a very different background and experience in change management and leadership. However, their stories, lessons learned, and best practices hold invaluable lessons for all who care about making residency education better.
PS-04

Conference closing plenary:
Leadership: A force for change

J. Andrews¹, P. Dussault²
¹University of Minnesota, Minneapolis, MN;
²Hôpital Anna-Laberge, Châteauguay, QC

Leadership in medical education is often fostered the same way in other professional fields. While the environments may be very different, the communication, trust and knowledge of team members remain critical to success. In this lecture, attendees will hear about constructive changes in resident and leadership training from Dr. John Andrews as he shares his experience with the University of Minnesota’s pilot program, Education in Pediatrics Across the Continuum Project (EPAC). From the perspective of a physician and airline pilot, Dr. Pierre Dussault will compare the training and relationship of a pilot and the crew to that of a physician and an interprofessional team. Together, they will highlight how Leadership can be a force for change.

PS-03

Plenary debate: Be it resolved that “Leadership training is required for every resident”

I. W. Incoll¹, J. Nordquist²
¹Australian Orthopaedic Association, Sydney, Australia;
²Karolinska Institutet, Stockholm, Sweden

During this session, Drs. Jonas Nordquist and Ian Incoll will go head-to-head debating the age-old question, ‘Does leadership training matter?’ On the proposition side of the house, we’ll hear from Dr. Nordquist, Associate Director of residency programs at the Karolinska University Hospital in Sweden. In opposition to the motion is Dr. Incoll, President and Dean of the Australian Orthopaedic Association. This session will be chaired by Dr. Jonathan Sherbino, assistant dean, education research, Faculty of Health Sciences, McMaster University and Dr. Simon Fleming, President, British Orthopaedic Trainees’ Association.

QI-01

Building the bridge to quality: Moving to action

B. M. Wong¹, E. Holmboe²
¹Sunnybrook Health Sciences Centre, Toronto, ON;
²Accreditation Council for Graduate Medical Education, Chicago, IL

Last year, in advance of the ICRE 2016 in Niagara Falls, the Royal College of Physicians and Surgeons of Canada organized a 2-day consensus conference called Building the Bridge to Quality. Its goal was to determine how to establish ‘health professions education’ as a key driver of improved outcomes for patients and populations. One key challenge preventing the attainment of this goal is the fact that many organizations do not fully integrate education on patient safety and quality improvement (PSQI) with clinical care delivery. The discussions during and after the Building the Bridge to Quality meeting, which included input from an international group of educational and health system leaders, educators, front-line clinicians, learners and patients, led to the creation of a list of key recommendations framed as action statements that individuals and organizations could use to better integrate PSQI education with clinical care to improve outcomes and experiences for patients and their families.

Two members of the Building the Bridge to Quality planning committee, Brian Wong (meeting chair and Associate Director, Centre for Quality Improvement and Patient Safety, University of Toronto) and Eric Holmboe (Senior VP for Milestones Development and Evaluation, ACGME) will lead an interactive symposium where participants will learn about the action statements, discuss their potential implications, and explore concrete examples for translating the action statements into practice.
RDH-01

Operationalizing resident duty hour recommendations: Designing a scheduling system for your local context

N. Sun¹, C. Lambert², A. Lafleur³
¹McGill University, Montréal, QC; ²Université de Montréal, Montréal, QC; ³Université Laval, Québec, QC

Duty hour regulations have been widely mandated or voluntarily adopted across North America and Europe over the past decade. For many institutions and training programs that have operated on traditional 24-hour call systems, adopting a new duty hour-compliant scheduling system can be a daunting task.

RDH-02

Are you ready to move beyond resident duty hours? Launching fatigue risk management in residency education

K. Imrie¹, T. McLaughlin², L. Carroll³, S. Taber³, L. Gorman², J. R. Frank³, T. Taylor⁴, M. Sen⁵
¹Sunnybrook Health Sciences Centre, Toronto, ON; ²University of Toronto, Toronto, ON; ³Royal College of Physicians and Surgeons of Canada, Ottawa, ON; ⁴University of Ottawa, Ottawa, ON; ⁵Western University, London, ON

In June of 2013, the National Steering Committee on Resident Duty Hours released their Report Fatigue, Risk and Excellence: Towards a Pan-Canadian Consensus on Resident Duty Hours. One of the key recommendations arising from this report identified the need for the development of a national toolbox of fatigue mitigation strategies, policy templates and procedures. The FRM Expert Working Group and Task Force have collaborated to develop the foundational FRM principles, with key guidance from the FRM National Advisory Committee. The development of the FRM Toolbox is currently underway, and is intended to support the local development of FRM plans for residents, faculties and institutions.

RDH-03

Les nouveaux systèmes de garde, retombées positives mais sources d’inquiétudes. Outils pratiques pour améliorer la qualité clinique et pédagogique

A. Lafleur¹, N. Sun², C. Lambert³
¹Université Laval, Québec, QC; ²McGill University, Montréal, QC; ³Université de Montréal, Montréal, QC

Les nouvelles réglementations canadiennes concernant les horaires de travail des résidents ont amené des innovations dans les modèles de garde en établissement. Que ce soit par des semaines de nuit ou la création de stages cliniques de nuit, les facultés de médecine ont conçu des modèles visant l’optimisation de la valeur pédagogique de la garde et des soins aux patients.


The new call systems: positive impacts and areas of concern. Practical tools for improving clinical and educational quality

A. Lafleur¹, N. Sun², C. Lambert³
¹Université Laval, Québec, QC; ²McGill University, Montréal, QC; ³Université de Montréal, Montréal, QC

The new Canadian regulations governing resident duty hours have led to innovations in in house call models. Whether through weeks of night call or the development of night clinical rotations, the faculties of medicine have developed models aimed at optimizing the educational value of call and patient care.

These models must be adapted to each institution and during the first few years of implementation, targeted adjustments must be made quickly. Decisions must be made concerning the various factors that can be monitored: Is the residents’ learning optimal? What is the impact on their quality of life? What is the effect on the quality and safety of patient care? Is the quality of handover information optimal?
Engaging residents: Inspiring the next generation of leaders and educators / Mobiliser les résidents : inspirer la prochaine génération de leaders et d’éducateurs

**RES-01**

**Time management essentials for residents and fellows**

**H. Patel**
McGill University, Montréal, QC

While insufficient time is frequently cited as reason for not achieving academic goals, in training or in practice, real time management is about behaviour and not minutes. Improving time use helps to improve productivity, reduces stress and ultimately encourages personal effectiveness. The purpose of the presentation is to encourage self-reflection on goals and time use, primarily in trainees and junior faculty. Content adapts principles and strategies, well known in the business world, to the world of medicine. Materials are structured thematically into: a) Reflections of personal time use, b) Developing long, medium and daily goals, c) Essential components in time management frameworks, and d) Practical strategies on: using an agenda, interruptions, mail/email, office work, and procrastination. The format is a large group plenary with embedded interactive activities. Examples of activities include: a) Icebreaker self-assessment quiz: How well are you managing your time?, b) Top 5 time wasters/Top 5 things I want more time for, c) Using the Time Management Matrix, d) Linking long term goals to daily activities, e) Case-based exercise: Preventing and handling interruptions, and f) Self-assessment quiz: Are you procrastinating? Lastly, the feedback of participants will be solicited through questions, comments and written evaluations.

**RES-02**

**PARO Teaching to Teach (TtT) workshop for residents**

**L. Berger¹, G. Linford¹, J. McMullen²**
¹Queen’s University, Kingston, ON; ²University of Toronto, Toronto, ON

One of the roles that Residents are required to fulfill during their training is to teach junior learners, patients and patients’ families. Although there are some existing “Residents as Teachers” programs available through Ontario residency training programs, they are highly variable by university and medical specialty. To address the need in this area, PARO has developed a workshop that is available to residents from all universities and programs to provide them with a minimum standard of teaching skills to carry out their role as teachers successfully.
RES-03

How to engage residents in the co-production of Competence by Design at the program and institutional level

K. Weersink, J. M. Hall
Queen's University, Kingston, ON

Resident engagement and leadership is of the utmost importance for successful implementation of CBD. Queen's University was granted approval by the Royal College of Physicians and Surgeons to implement Competence by Design (CBD) curricula for all incoming residents in July 2017. Thus, the CBME Resident Subcommittee was formed by Queen's residents with interest in medical education to represent the interests of the greater Queen's resident body through this early, institution-wide transition and continued integration of CBD. Using change management strategies such as co-production, diffusion of innovations, and SCARF Model the committee has been successful in contributing to Queen's resident engagement in preparation for the CBD launch.

RES-04

So you want to be a mentor: Now what? An approach to a resident mentorship needs analysis and curriculum development

C. Hickey, A. Hurley, L. Martin, K. Callanan
Memorial University of Newfoundland, St. John's, NL

Residency training programs are moving towards a greater focus on mentorship relationships amongst faculty and trainees. Accreditation bodies recognize the value of mentorship and training programs seem eager to demonstrate that appropriate mentorship opportunities are available to all trainees throughout their residency. But what does appropriate and successful mentorship consist of? What does a resident look for in a mentor and a mentorship relationship? What does a faculty member hope to offer a trainee that will be useful, pragmatic and possibly inspirational? Does mentorship lend itself to a formal curriculum development? Or is a more spontaneous, dynamic and resident-led curriculum more useful to the mentee?
Engaging residents: Inspiring the next generation of leaders and educators / Mobiliser les résidents : inspirer la prochaine génération de leaders et d’éducateurs

**RES-05**

**Giving and receiving feedback: Key skills for resident leaders**

**C. Watling**  
Western University, London, ON

Feedback consistently rates as one of the strongest influences on learning. But in medical education, feedback too often falls short of its aim of meaningfully shaping learning. Learners continue to identify deficiencies in the quantity and the quality of the feedback they are offered. Vague, non-specific feedback that is difficult for learners to act upon reigns, leaving learners disappointed and lacking in meaningful guidance for their development.

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**RES-06**

**Resident survival stories**

**A. Atkinson¹, B. Bigham², C. MP. Lin², M. Hardway³**  
¹The Hospital for Sick Children, Toronto, ON; ²McMaster University, Hamilton, ON; ³National Health Service Wales, Mid Glamorgan, United Kingdom

Professionalism and truth-telling are core values in medicine and medical training. However, at times, residents are exposed to breaches in these areas during training, and need to be provided with the skills, tools and resiliency to manage them and provide leadership for residents coming behind them.

In this interactive presentation, a diverse group of residents will present experiences in the areas of professionalism and truth-telling that they had to navigate as residents, reflecting on the processes and approaches they used to maximize their experience.

In small groups, participants will have the opportunity to develop strategies to work through the various situations presented. These strategies will be shared with the larger group as a form of peer to peer learning.

This is a unique opportunity to learn from “real life” stories and to develop strategies to manage them.

Upon completion of this session, participants will be able to identify key areas important and potentially challenging to residents and have ideas for successful strategies to manage these areas through avenues such as mentorship, curriculum development and additions to programming.
Serendipity: The happy accident that led to a junior resident’s journey in #MedED

J. Busari¹, M. Galán de Juana²

¹Maastricht University/Zuyderland Medical Center, Maastricht, Netherlands; ²Universidad Autónoma de Madrid, Madrid, Spain

Beginning a career in medical education not only requires motivation and work, but chance. In her study of early and senior medical educators, professor Wendy Hu et al. identified serendipity as one of the main factors that led people down the path of becoming medical educators. But what is serendipity? What role do chance encounters with key figures and mentors play? Can we take steps to facilitate these types of relationships?

During this workshop the facilitators will explore the concept of serendipity as a driver of medical education scholarship, as well as potential barriers to a career in medical education and how effective mentor/mentee relationships can help overcome them.

Designing effective presentations

R. Connelly

Queen’s University, Kingston, ON

Traditional presentations are often a poor, yet ubiquitous method of medical education. The reasons for failure are based in poor understanding of psychological principles, and the nature and construct of the “presentation”. There is opportunity for improvement in engagement and educational value of presentation through the application of straightforward techniques.

Resolving conflict and negotiating effectively

L. Snell

McGill University, Montréal, QC

All residents may experience conflict – with their peers, supervisors, other health professionals, patients, or in their personal life. During this workshop the resident will learn approaches to addressing and resolving conflicts, and have the opportunity to apply these principles to their own context.
Successfully leveraging social networking for advancing careers in academic medicine

L. Hurtubise¹, C. Hurtubise²
¹Nationwide Children's Hospital, Columbus, OH; ²The Center of Science and Industry, Columbus, OH

Social media networking sites, like Twitter, are connecting medical educators with learners as well as peers from local to international colleagues. The proliferation of these sites is impacting medical education through increased transparency and accessibility of information, and by fostering collaborative connections in an open environment. Medical educators use social media networking sites to connect learners with important web-based content for formative assessment. The sites are also used to promote collaboration and professional development. Many hospitals have a presence and professional organizations create specific hashtags used by individual members to share broadly the news from their meetings. Individuals can develop a national reputation by sharing the latest evidence, while colleagues are able to follow near and far. However, the open transparent nature of these sites can cause trepidation for the novice user. The social networking landscape is ever changing, with sites starting and ending regularly while others change their user interfaces. This interactive workshop will provide an opportunity to discuss the rationale and benefits of engaging with social media networking sites as well as hands on practice tweeting in a safe environment. There will also be opportunities to discuss the pros and cons of various strategies for leveraging social media networks for medical education and developing a professional reputation.

Rôle et responsabilités de l’apprenant et du superviseur: nouveau guide du Collège des médecins du Québec

L. Samson¹, S. Bélanger¹, A. MacLellan¹, J. Dubois¹, É. Gagné¹, K. Doyle², F. Caron¹, S. Keverian¹, Y. Gervais¹, J. Lalancette¹, M. Deschênes¹
¹Collège des médecins du Québec, Montréal, QC; Université McGill, Montréal, QC

La formation médicale est de grande qualité au Québec et les nombreux référentiels qui encadrent cette formation y jouent un rôle fondamental. Toutefois, malgré ces nombreux référentiels, il semble persister certaines ambiguïtés dans la perception des apprenants et dans celle des superviseurs quant à leur rôle et à leurs responsabilités respectifs. C’est donc dans ce but que le Collège des Médecins du Québec a choisi de produire un Guide à cet effet afin d’assurer une standardisation des messages quant au rôle et aux responsabilités de l’apprenant et du superviseur, et à sensibiliser le superviseur dans l’application notamment des principes déontologiques.

Ce guide, qui s’inscrit en complément des référentiels reconnus, vise à encadrer l’organisation et l’évaluation des apprentissages, ainsi que la prestation des soins au patient dans ce contexte. La préoccupation centrale ici est d’assurer la sécurité des soins. Ce guide ne remplace aucunement le Code de déontologie des médecins ou les autres codes et référentiels, mais il constitue une aide supplémentaire dans l’application de ceux-ci.

English on next page
Role and responsibilities of the learner and the supervisor: New guide issued by the Collège des médecins du Québec

L. Samson¹, S. Bélanger¹, A. MacLellan¹, J. Dubois¹, È. Gagné¹, K. Doyle², F. Caron¹, S. Keverian¹, Y. Gervais¹, J. Lalancette¹, M. Deschênes¹

¹Collège des médecins du Québec, Montréal, QC; ²McGill University Health Centre, Montréal, QC

Medical education in Quebec is of very high quality and numerous reference documents which provide a framework for this training play a fundamental role. However, despite these many reference documents, there are still some ambiguities in the perceptions of learners and supervisors concerning their respective roles and responsibilities. It was in response to these concerns that the Collège des Médecins du Québec decided to issue a guide on this subject in order to ensure standardization of the messages concerning the role and the responsibilities of the learner and the supervisor, and to raise supervisors’ awareness regarding the application of ethical principles in particular.

This guide, which supplements recognized reference documents, is intended to provide a framework for the organization and assessment of learning as well as for the delivery of patient care in this context. Safety in patient care is the main objective. This guide in no way replaces the Code of ethics of physicians or the other codes and frameworks, but is an additional aid in their application.
Simulation in residency education /
La simulation dans la formation des résidents

**SIM-01**
How to Deliver a Surgical Boot Camp Incorporating Both Technical and Non-technical Skills

*S. Jain¹, C. McIlhenny², A. Myatt³, C. Biyani⁴, J. Johnson¹, K. Spearpoint⁵*

¹St James’s Hospital, Leeds, United Kingdom; ²Forth Valley Royal Hospital, Larbert, United Kingdom; ³Castle Hill Hospital, Cottingham, United Kingdom; ⁴St James’s Hospital, Leeds, United Kingdom; ⁵University of Hartfordshire, Hatfield, UK

When junior doctors begin residency training, there is a significant change in their role. They will begin to undertake procedures that may be new to them. There will also be an expectation that they can demonstrate leadership and make independent management decisions in clinic and on the wards. Simulation based learning is one means to reduce anxiety and improve proficiency prior to this transition.

In September 2015 we introduced a “Simulation Boot Camp” aimed at new residents in Urology. Our course is now in its third year. During development, the course feedback from delegates and faculty has been used to refine it.

**SIM-02**
Maximizing the Efficiency of your Simulation Curriculum: The Use of a Multi-Trainee, Multi-Learner, Multi-competency Approach

V. Mueller, S. Ellis, B. Murray-Davis, R. Sonnadara, L. Grierson
McMaster University, Hamilton, ON

The CanMEDS 2015 Framework outlines many key competencies that must be learned and assessed during residency training. The move towards the Competence by Design curriculum will require the use of simulation for assessment of many of these skills. However, the use of simulation poses many challenges for residency programs; including, the disparate learning needs of trainees, financial costs, and the impact on faculty and staff time.
SIM-03
SimTrek: CanMEDS

G. Posner¹, F. Bhanji², J. M. Hall³, J. Poitras⁴, M. Goldenberg⁵, P. Rao⁶, A. Garber¹, T. S. Taylor¹, M. Yan⁷
¹University of Ottawa, Ottawa, ON; ²Royal College of Physicians and Surgeons of Canada, Ottawa, ON; ³Queen’s University, Kingston, ON; ⁴Université Laval, Québec, QC; ⁵University of Toronto, Toronto, ON; ⁶The Ottawa Hospital, Ottawa, ON; ⁷Resident Doctors of Canada, Ottawa, ON

In this session, the audience will have the opportunity to observe and then provide feedback to teams of physicians engaged in standardized patient encounters aimed at assessing the intrinsic CanMEDS Roles. Three scenarios will be presented in which pre-selected pairs of participants “manage” a potentially challenging situation. Expert debriefers, along with the audience, will then provide feedback to the participants. This demonstration is intended to showcase the use of standardized patient encounters (one form of simulation-based education) for formative assessment of trainees.

SIM-04
KeyLIME: Best simulation literature

F. Bhanji¹, G. Posner²
¹Royal College of Physicians and Surgeons of Canada, Ottawa, ON; ²University of Ottawa, Ottawa, ON

Simulation-based education is increasingly utilized in Post-Graduate Medical Education. The opportunity for experiential learning is an authentic environment which is safe for both patients and learners is appealing to educators and learners alike. Despite these advantages simulation does remain ‘costly’ in terms of equipment and instructor time. The literature exploring the optimal use of simulation is evolving rapidly and medical educators may benefit from understanding the key research findings and the associated controversies. This session will feature experts in simulation-based education, debating the merits of papers you simply can’t miss.
Using innovative technologies for medical education / L’utilisation des technologies innovantes en formation médicale

**TEC-01**

**Podcast your way to MedEd greatness!**

**R. Rogers**

University of Kentucky, Lexington, KY

Podcasts are becoming an increasingly used learning modality in medical education. The benefits of podcasts are many and include the fact that the vast majority of our learners spend a significant amount of time listening to them. If this is where learners spend their time, why not learn how to podcast and actively teach where learners prefer to spend their time?

This session will cover podcasts in medical education and how to get started with creating a podcast for leaners.

**TEC-02**

**Coaching in the operating room**

**M. Goldenberg¹, S. Fleming², P. A. Moore³, T. Grantcharov¹**

¹University of Toronto, Toronto, ON; ²National Health Service & British Orthopaedic Trainees Association, London, England; ³Australian Orthopaedic Association, Sydney, Australia

Recent evidence suggests that effective medical training can be carried out using concepts borrowed from other high-level professional industries. The concept and language of “coaching” has permeated into the repertoire of educators in both medicine and surgery, and stakeholders in the field are beginning to explore the role that these adapted models can play in improving the way trainees receive feedback and structure their own learning.

**TEC-03**

**Dissemination 2.0: Getting your work out there**

**R. Rogers¹, T. M. Chan²**

¹University of Kentucky, Lexington, KY; ²McMaster University, Hamilton, ON

Dissemination is a key aspect of becoming an effective scholar. Digital technologies are now ubiquitous enough that they are opening up new ways to connect scholars and increase your impact. We will help individuals determine which social media platforms (e.g. Twitter, Scribd, YouTube, Instagram, Facebook Pages, LinkedIn, SlideShare), novel digital dissemination techniques (e.g. Infographics, Podcasts, Blogs), and impact aggregation services (e.g. Google Scholar ResearchGate, Academia.edu, Impact Story, Google Analytics) they might incorporate into their scholarly practice to improve their knowledge translation and dissemination.
Digital education: A critical appraisal

F. Zaver
University of Calgary, Calgary, AB

The session would start by discussing the main shortfalls of digital education (FOAM) including: peer review, the knowledge gap as well as quality of blog posts and podcasts. From this, an explanation of what has been done thus far to address these critiques, and what is still lacking, and how best to tackle these shortcomings.

Using crowdsourced expertise, the Approved Instructional Resources (AIR) series from Academic Life in Emergency Medicine (ALiEM) was created in 2014 to provide a credible method to identify quality educational blogs and podcasts.

Get inside their smartphones and you get inside their heads!

T. Branigan
Royal College of Surgeons in Ireland, Blackrock, Ireland

Look up at your students. How many dimly lit faces do you see staring down at something glowing beneath the table? The smartphone has taken over, and with ready access to the world’s collective knowledge, it is a formidable competitor for your student’s attention.

Know your enemy! This workshop will bring you up to speed with the latest online tools, information repositories and interactive apps. By the time you leave, you will be able to direct your students to the apps you want them to use.

But that’s not all. This workshop will demonstrate the ease with which you can design and develop your own app, for either your class, your institution or the wider medical world.

When your three hundred students are busy checking your app, you might reconsider letting them use them in class from now on!
Teaching and learning in residency education / L’enseignement et l’apprentissage dans la formation des résidents

**TL-01**

**Building A Culture of Innovation Through Leading Change**

G. Luciano¹, S. Aulakh¹, M. J. Rosenblum¹, K. Hinchey¹, E. Holmboe², E. Warm³, D. Sall³, B. Kinnear³, M. Kelleher³

¹Baystate Health, Springfield, MA; ²Accreditation Council for Graduate Medical Education, Chicago, IL; ³University of Cincinnati Academic Health Center, Cincinnati, OH

In 2006, the Educational Innovations Project (EIP) was launched by the Accreditation Council for Graduate Medical Education (ACGME) in the United States with the goal of improving clinical care and concomitantly transforming residency education. Seventeen internal medicine programs were selected; all pushed the boundaries of traditional education to create innovative models for teaching and learning.

The challenges of creating substantial change, whether voluntary or mandated, can be overcome when medical educators and programmatic leaders are thoughtful about developing the new knowledge, attitudes and skills associated with change management. Successfully implementing programmatic and institutional change requires effective communication and collaboration as well as deliberate practice through an understanding of change management concepts.

EIP program leaders along with a member of the ACGME will lead an interactive discussion of contemporary change management theory including recognizing when change is needed, stages of change management, and redefining failures. The majority of the workshop will guide attendees through stages of change management based on Kotter's steps for successful change using illustrative examples of successful innovations from the EIP initiative. Examples will include changes in conference structure (developing an academic half day), competency-based progression (resident advancement predicated on competency as opposed to time), and creating a culture of scholarship (case report curriculum for the entire intern class) to name a few.

**TL-02**

**Beginner's Guide to Flip the Classroom**

S. Yiu¹, R. G. Patwari², R. Cooney³

¹University of Ottawa, Ottawa, ON; ²Rush University, Oak Park, IL; ³Geisinger Medical Center, Danville, PA

Blended learning is increasingly employed in education to encourage active learning. The ‘flipped classroom’ is a form of blended learning that tasks learners with prework that provides foundational knowledge and then utilizes class time to take advantage of collaboration, problem solving, and group discussion. Educational theory posits that educators can take advantage of online learning to minimize cognitive load by limiting lesson length and applying multimedia design principles. Likewise, in class time allows for the creation of a community of inquiry and now supports social constructivism, learner-learner and learner-content connections that are difficult to create in a traditional, lecture-based didactic program.

**TL-03**

**KeyLIME: Best teaching and learning literature**

J. Busari¹, W. J. Cheung²

¹Maastricht University/Zuyderland Medical Center, Maastricht, Netherlands; ²University of Ottawa, Ottawa, ON

This session will review an idiosyncratic and eclectic collection of the top 10 high impact papers in the area of teaching and learning in medical education over the last year. In a lively pro and con format, facilitators will provide a critical review of strengths and weaknesses, examining both methodological issues and potential impact of each article discussed.
Practical tools for fostering professionalism in the digital age

J. Walton, L. K. Sonnenberg, R. A. Kearney
University of Alberta, Edmonton, AB

Social media discussion in medical education seems to focus on either its promise as a new and exciting learning tool, or as an endless pit of potential professionalism lapses. The CanMEDS 2015 Physician Competency Framework makes specific reference, in the eHealth and Technology section, to the importance of educating residents to “exhibit professional behaviours in the use of technology-enabled communication”. Tasked with fostering the professional growth of residents, what is an educator in the digital age to do?

KeyLIME Live @ ICRE

J. R. Frank1, L. Snell2, J. Sherbino3 K. Hauer5, G. Regehr6
1Royal College of Physicians and Surgeons of Canada, Ottawa, ON; 2McGill University, Montréal, QC; 3McMaster University, Hamilton, ON; 5University of California, San Francisco, CA; 6University of British Columbia, Vancouver, BC

Over lunch at ICRE this year, meet the Med-Ed gurus from the KeyLIME podcast and special guests as they and the audience debate the latest publications from the top journals. Hosts Drs. Linda Snell, Jonathan Sherbino, and Jason Frank this year welcome co-cost Dr. Eric Warm, a professor of medicine and director of the Internal Medicine training program at the University of Cincinnati. Several carefully chosen papers will be debated, dissected, defended, and deconstructed. Enjoy your meal, enlighten your mind, share your opinions and have a few laughs while learning lessons from the literature.
Reflection on action: A practical method to focus on learners’ competencies

B. de Leede¹, C. den Rooijen²
¹Leiden University Medical Center, Leiden, Netherlands; ²The Royal Dutch Medical Association (KNMG), Utrecht, Netherlands

Although learning entails reflecting on events in everyday practice, in daily practice we tend to set little time apart for reflection. For students and residents in workplace learning situations it is important to evaluate and structure new experiences, to reflect on it and to get new and valuable insights.

The STARR method is an interview technique designed to clarify and stimulate reflection on experiences, even experiences you haven’t observed as supervisor. It’s also helpful for residents to reflect on their role in awkward and complex situations. The method can also be used as technique to assess residents for competencies or EPA’s.

In the STARR method it is important to ask the “right” questions. Therefore we introduce the principles of the “humble inquiry” (Schein) as a useful way for asking the learner in a nonjudgmental way.

Program director survival stories

P. Wasi¹, L. Thurgur², T. Granholm³, S. Choi², G. Montaño Fernández⁴
¹McMaster University, Hamilton, ON; ²University of Ottawa, Ottawa, ON; ³Karolinska University Hospital, Stockholm, Sweden; ⁴Unidad Médica de Alta Especialidad, Monterrey, Mexico

Program directors have one of medical education’s most demanding and difficult positions. In this panel, current and former program directors will examine how they responded to a “real life” challenge in their residency that became career-questioning for the program director. Potential topics include difficult resident remediation and solutions, substance abuse, dealing with tragedy and loss, professionalism issues, resident legal matters, problems related to social media and other areas. This is a unique discussion of residency education challenges that do not make the academic literature, allowing attendees to learn from speakers’ individual responses to universal problems.
Teaching and learning in residency education / L'enseignement et l'apprentissage dans la formation des résidents

**TL-08**

**Evaluation of supervisors by residents: A tool to stimulate mutual learning**


1Radboudumc Health Academy, Nijmegen, Netherlands; 2Leiden University Medical Centre, Leiden, Netherlands

Residents predominantly learn in clinical practice. They can take an active role in creating a strong learning environment for themselves by providing supervisors with feedback about their supervision.

We developed an evaluation system, called EFFECT-System, including a survey tool, based on evidence based characteristics of effective clinical learning environments. Both supervisors and residents use this tool to reflect on individual supervisors' clinical teaching quality. Essential element of EFFECT-S is the upward feedback dialogue between a supervisor and two residents discussing the collected individual feedback, guided by a moderator.

By providing feedback to their supervisor, residents not only learn how to give feedback, but also experience the potential value of regular feedback as part of taking leadership in their own professional performance. EFFECT-S has been implemented in more than 125 clinical departments in over 20 hospitals. In 2014 EFFECT-S started in Lithuania, and in 2015 in Sweden.

**TL-09**

**Weaving a career curriculum into your resident training program**

**M. A. Trinkaus**, **J. Maniate**, **L. Probyn**

1St. Michael’s Hospital, Toronto, ON; 2St. Joseph’s Health Centre, Toronto, ON; 3University of Toronto, Toronto, ON

In 2016, the presenters (MT, JM, LP) moderated a workshop titled: “How can I help you find the “perfect” job? The Role of Program Directors in Career Development for Residents”. Based on this 2016 workshop, it is clear that program directors, clinician educators and hospital administrators all struggle with how to prepare medical students and residents for a competitive job market. A national needs assessment sent to PGY4 to PGY6 Hematology Trainees across Canada specific to career planning (47 of 65 respondents; 72% response rate) indicated that up to 50% of trainees had no formal career counseling or structured career planning curriculum in their programs, with only 33% of trainees having any ongoing contact with mentors specific to career planning.
Residency training has shifted towards competency-based medical education with benchmarks and outcomes to measure the progression of our trainees. In this framework, it is important that our trainees are at the center of their own education and developmental progression. Evidence has suggested that most people are not reliably accurate at self-assessment, which makes objective assessment, feedback, reflection, and goal-setting vitally important to help our residents improve while fostering lifelong learning skills.

Two important questions arise for any residency program looking to transform their assessment data into knowledge that can improve physicians in training. First, what is the role of your competency committee? The literature has identified two separate models that committees might operate under: a problem identification model (the sole focus is to help low-performing residents) and a developmental model (the focus is to use assessment data to help all learners improve/grow). We will explore the differences between these two models while using our program’s assessment data and competency committee as a case study, and sharing our journey from problem identification to more of a developmental model. Second, how can your program’s competency committee use assessment data and a developmental model for individual learners? Coaching has emerged in medical education, but it is often confused with mentoring, teaching, and advising. In this interactive workshop we will explore how coaching strategies linked with a developmental approach can optimize a competency committee’s impact on learner growth.

Competency-based medical education’s success will rest not only on robust assessment of learners, but also on meaningful teaching that guides their development. In this workshop, we focus on one approach to making teaching more consistently meaningful: coaching. Residents continue to highlight deficits in observation and in meaningful feedback during their training. Coaching models of teaching are gaining traction in medical education, in part because of their potential to remedy these deficits and to stimulate learners’ growth and progress. But what exactly does coaching look like in medical education? Coaching tends to thrive in the setting of longitudinal relationships between coach and learner, but such relationships are not always readily nurtured in the dynamic world of medical education. And coaching demands certain system, organizational, and cultural supports that may be underdeveloped in medicine.

In this interactive workshop, the key features of a coaching model of teaching will be identified and discussed. The critical links between coaching and feedback will be examined, and the distinctive characteristics of coaching conversations that embed actionable feedback will be shared. The important issues of relationship and culture will be explored, with the aim of developing an action strategy for moving forward with a coaching agenda for residency training in Canada.
Building debriefing skills to enhance the feedback conversation

A. Garber¹, T. S. Taylor¹, P. Rao², G. Posner¹
¹University of Ottawa, Ottawa, ON; ²The Ottawa Hospital, Ottawa, ON

Feedback is a central component of workplace-based learning. Learners frequently cite inadequate feedback as a hindrance to learning. Correspondingly, faculty members frequently describe their lack of training in providing feedback as a major deterrent to engaging in the feedback conversation. As the Royal College of Physicians and Surgeons of Canada (RCpsc) and the College of Family Physicians of Canada (CFPC) move towards competency based medical education (CBME) as a model for postgraduate education (PGME), the feedback conversation must figure more centrally in the evaluation process.

Debriefing is a learned skill and a form of feedback, historically studied in the simulation literature, which can help to enrich workplace-based feedback conversations. It can also help the faculty member engage the learner while managing challenging or sensitive aspects of the conversation. It can be used for feedback provision to an individual or a group.

Residents in difficulty: Complex remediation and the ‘circle of care’

E. Abner, E. S. Bartlett, D. Martin, C. Trevelyan
University of Toronto, Toronto, ON

Residents on remediation often struggle with complex issues that require intensive support. Many residents in need of remediation are facing difficulties across multiple CanMEDS roles, with overlapping issues in their professionalism, communication, and collaboration, along with deficiencies in their medical expertise. To add to the complexity, residents may have wellness issues in need of address such as burnout, anxiety, depression or substance abuse, or behavioural issues such as procrastination. Remediation is typically a highly stressful, isolating, embarrassing and anxiety-provoking experience. A successful outcome can often be enhanced by ensuring the right network of support is in place.
### Teaching and learning in residency education / L’enseignement et l’apprentissage dans la formation des résidents

**TL-14**

**Overcoming challenges in teaching highly kinesthetic and visual/spatial procedural skills**

*D. Papanagnostou, R. Hall, S. Chandra, S. Buttar, J. Rudner, H. Lee*

Thomas Jefferson University, Philadelphia, PA

Educators are challenged with finding best practices to instruct highly kinesthetic procedural skills. This type of learning heavily relies upon visual-spatial and kinesthetic abilities. Because clinicians rely on different learning styles and preferences for procedural skill acquisition, however, teaching these skills may pose a challenge to the educator of residents, who are expected to learn, perform and teach procedures to junior learners in the clinical learning environment. Therefore, if educators are to be successful with procedural instruction, he/she will need to have the tools required to successfully facilitate the conceptualization of these skills.

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**TL-15**

**Strategies to enhance teaching and assessment of situational awareness**

*J. A. Haber, J. Lockyer*

University of Calgary, Calgary, AB

Situational awareness (SA) has been defined as “the perception of elements of the environment within a volume of time and space, the comprehension of their meaning and the projection of their status in the near future.” (Endsley 2000) Although SA has previously been identified by the Royal College as “the most important and least understood human factor in healthcare” (Parush et al., 2011) and educational resources for the topic have been developed, it is unclear how medical practitioners practically understand the concept of SA. Recent research has identified that anesthesiologists have variable definitions and descriptions of SA, have developed SA skills primarily through experiential learning, and are challenged both in teaching and assessment of SA (Haber et al., 2017). Given that SA is an important concept in many disciplines, an exploration of how it is conceptualized, learned, taught and assessed across and within specialties will be helpful in optimizing resident learning of SA.
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International – FD11
Interprofessional – FD12
Leader – LE08
Leadership – FD08, LE02, LE05, LE08, PHW04
Leadership education – LE06
Lean/Six Sigma – EQ01
Learning change plan – ACE03
Learning theory – FD07
MCQ – ACE07
Mediation – FD06
Mentorship – RES04
Milestones – CB04
Mindfulness – PHW05
Multi-source feedback – LE05
Narrative medicine – LE07
OSCE – ACE05
Patient safety – EQ01, TL15
Pedagogy – TL14
Peer review – FD13
Performance assessment – ACE11
Physician wellness – PHW05
Physician workforce – HP01
Postgraduate medical education – ASR01
Practice-driven – EQ02
Preceptors – ACE10
Procedure – TL14
Professionalism – TL04, TL13
Program directors – FD06
Programmatic assessment – ACE06
Quality – ARE03
Quality assessment – TEC04
Quality Improvement – EQ01, TL08
Reflective practice – ACE06
Remediation – FD14, TL13
Residency – RDH01, RES04
Resident – PHW04
Resident education – HIS01
Resident selection – ASR01
Resident wellness – PHW02
Resilience – PHW02, PHW04
Resource stewardship – EQ02
Resources – FD09
Responsabilité sociale – CB10
Rôle des apprenants et des superviseurs – RES11
Safety – RDH02
Scheduling – RDH01
Sécurité des patients – RES11
Simulation – TL14
Situational awareness – TL15
Smartphones – TEC05
Social media – TEC04, TL04
Stage de nuit – RDH03
Standards – ARE01
Storytelling – LE07
Supply – HP01
Support – ARE01
Systèmes de garde – RDH03
Teams – LE06
Technology – TL02, TL04
Technology enhanced learning – TEC05
Training Programme Development – FD11
Train-the-Trainer – FD13
Transition vers la résidence et la progression vers la discipline – CB08
Validity – ACE05, CB04
Visual Literacy – HIS02
Well being resilience – PHW01
Wellness – TL13
Work based learning – FD07
Workplace-based assessment – ACE10, CB12