2019

The International Conference on Residency Education

La Conférence internationale sur la formation des résidents

Conference Abstracts
Résumés de la conférence

Posters

Affiches

ROYAL COLLEGE
OF PHYSICIANS AND SURGEONS OF CANADA
COLLÈGE ROYAL
DES MÉDECINS ET CHIRURGIENS DU CANADA

#ICRE2019 #CIFR2019

Table of Contents

2019 International Conference on Residency Education

Abstracts have been printed as they were submitted

2019 International Conference on Residency Education - La Conférence internationale sur la formation des résidents 2019

145

Accreditation in residency education

National policy shifts: Program directors and insights and implications for CBME

K. Dore[1], B. JM. Bogie[2], K. Saperson[3], K. Finlay[1], P. Wasi[1]

[1]McMaster University, Burlington, ON; [2]McMaster University, Hamilton, ON; [3]McMaster University, Ancaster, ON

Introduction: Outcomes of national policy change are felt by all levels of the organizational hierarchy. Reflection on past implementations are important to inform and improve future change. Within medical education, literature is sparse on how the levels of the education system interact to effect change and may inform future change such as CBME.

Methods: An anonymous online survey was developed investigating opinions and experiences of program directors (PDs) on accreditation and the CanMEDS framework implementation. The survey was sent to former Canadian specialty medicine PDs (N=684). Descriptive analysis was performed on the quantitative data, thematic analysis was performed on the qualitative comments, and mixed-methods analysis was completed to identify convergence and/or divergence.

Results: 265 (38.7%) former PDs responded. Quantitative analysis revealed that 52.8% of respondents did not feel involved in decision-making regarding policy changes, 45.1% of respondents did not feel prepared to assess the CanMEDS Roles, and PDs were divided on the reasonableness of accreditation documentation. Qualitative analyses produced four themes: Communication, Resources, Expectations of Outcomes, and Buy-In, as well as nine subthemes. Mixed-methods analysis noted a high level of convergence across content, with four areas of divergence. The analysis also highlighted areas of expansion where the qualitative and quantitative strands provided additive insights to each other.

Conclusions: Program directors, front-line implementers, reported unique challenges to policy change not readily observable from the quantitative data. Findings from the current study provide insightful lessons to inform effective future policy change implementation procedures within medical education, including competency-based medical education initiatives

146

Accreditation in residency education

A process for developing and embedding UK equivalent core medical training on an international basis

D. Black

Federation of the Royal Colleges of Physicians of the United Kingdom, London, United Kingdom

The three Royal Colleges of Physicians have provided the MRCP UK Diploma on an international basis for 40 years. It is the biggest postgraduate examination including clinical skills for physicians internationally. However although it is well understood that ‘exams are necessary but not sufficient’ for modern competency based medical education, UK Core Medical Training had not been delivered abroad, although it is the curriculum the MRCP is blueprinted to.

In 2015 at the request of the Icelandic Government a three year UK equivalent Core Medical training was started in Iceland. This has been followed by identical programs in Dubai; Kochi, Trivandrum and Wayanad in Kerala and also New Delhi. These replicate exactly the UK curriculum, including the use of the UK e-portfolio and an Annual Review of Competence Progression (ARCP).

To implement and embed the program all the Educational and Clinical supervisors undergo up to five days of local education and training in the operation and delivery of the program. The first cohort of trainees also receives hands on training including the e-portfolio. To ensure UK equivalence, a senior UK educator provides externality at all the trainees ARCPs annually. There is also a process of detailed review and accreditation by UK educators of each program on a 2-3 year cycle.

Outcomes of recent ARCP and accreditation visits show high levels of trainee and trainer satisfaction, good engagement with the curriculum and early examination pass rates similar to the UK

147

Accreditation in residency education

Evaluation of the new CanERA accreditation systematic implementation model

A. Ronson[1], S. Taber[1], T. Phillips[1], R. Almond[2], A. MacLellan[3], L. Samson[3], E. Van Melle[4], J. R. Frank[1]

[1]Royal College of Physicians and Surgeons of Canada, Ottawa, ON; [2]College of Family Physicians of Canada, Mississauga, ON; [3]Collège des médecins du Québec, Montréal, QC; [4]Queen's University, Kingston, ON

Introduction: The new Canadian residency accreditation system, CanERA, comprises 10 components. Given the high-stakes nature of accreditation, there was a need to test and evaluate these new innovations before they were fully deployed.

Methods: A three-stage prototype model of implementation was developed with an accompanying evaluation framework built upon a logic model for CanERA. Each prototype collected and implemented feedback from accreditation stakeholders to improve upon previous phases. Surveys were distributed directly to surveyors, postgraduate office staff, program directors and administrators involved with nine onsite accreditation reviews over four years. Prototype evaluation focused on: content and evidence of the standards; decision-making; the onsite accreditation review process; training; and the new digital platform, CanAMS.

Results: Over 100 accreditation stakeholders completed evaluation surveys throughout the prototypes. Results informed CanERA process and content development, such as: a) development of required evidence to meet standards; b) new features for the onsite review model (e.g., interviews with program administrators, schedule flexibility and option for second meeting with program director); c) improvements to the user experience, work flow, and efficiencies in the CanAMS (e.g., integration of specialty specific standards, improved table formatting, offline capability); and, d) enhancements to the stakeholder training methodology.

Conclusions: Prototype evaluation provided invaluable lessons learned for informing improvements and developments needed for iterative implementation. CanERA has been shaped directly by stakeholders involved in the accreditation process and will continue to be a system based on continuous improvement. Others who are implementing accreditation systems should consider using a similar implementation evaluation model.

148

Accreditation in residency education

Accreditation across borders: Validity evidence from a comparison of multinational institution reviews

T. Phillips, S. Taber, A. Ronson, C. McMillin, J. R. Frank

Royal College of Physicians and Surgeons of Canada, Ottawa, ON

Introduction: Residency education accreditation in Canada includes a review of the postgraduate medical education (PGME) leadership using the *General Standards Applicable to the University and Affiliated Site*s. Recently, equivalent institution reviews have been conducted in international jurisdictions. However, little is known regarding the extent to which the standards are transferable.

Methods: We set out to compare the findings at Canadian and international institution reviews using common standards. The citations of strengths and areas for improvement for institution reviews for each of Canada's 17 PGME institutions were compared to those of the eight international institution reviews conducted to date. Important differences in the significance of the areas for improvement (AFIs) were explored through qualitative analysis.

Results: There were no significant differences between Canadian and international institutions in the total number of citations, and patterns of strengths and areas for improvement were similar. Standards for institutional structure represented half of those cited. Faculty development was more commonly cited for non-Canadian institutions.

Conclusions: Monitoring of institution review outcomes and comparison between Canadian and non-Canadian institutions is needed to demonstrate that the principle of equivalency is maintained. Similarities observed in the frequency and pattern of citations may relate to application of established norms by experienced surveyors rather than evidence of equivalent institution quality. The extent of similarity provides validity evidence for the transferability of Canadian institutional standards to non-Canadian jurisdictions and suggests surveyors' interpretation of the standards is consistent across jurisdictions.

149

Admissions: Selecting residents

Are future resident rad for rad onc? Analysis of MMI [motivation] data in a radiation oncology program

S. Allen, K. Watts, T. Daigle-Maloney, D. Bowes

Dalhousie University, Halifax, NS

Introduction: Residency programs aim to improve objectivity of selection processes to ensure transparency and fairness. Determination of candidate's motivation to enter a specialty is an important facet. Our program used a novel selection procedure for 5 years combining formal objective review of Canadian Resident Matching Service (CaRMS) application with a Multiple Mini Interview (MMI). This study evaluates whether assessment of candidate's motivation to enter Radiation Oncology (RO) on the application review predicts performance on the MMI station designed to assess motivation.

Methods: 2-3 reviewers assessed candidate's motivation and interest in RO on CaRMS application using a formalized scoring system based on pre-defined parameters. These parameters did not consider the number of electives in RO, an intentional exclusion. The MMI consisted of 4 stations. One measured motivation utilizing a standardized scoring template and scored independently by 2 raters. Different assessors were used for the application review and MMI station and were blinded to the others' scoring. Utilized Spearman's rank order correlation analysis, and apriori two-sided alpha level of 0.05.

Results: Significant correlation between scoring of motivation at time of application review and during MMI [$r_s = 0.59$, $p = 0.000$, $n=58$.] over the 5-year period.

Conclusions: Standardized objective measures of applicant's motivation to enter RO residency training can be done at the application review or the interview phase. This finding eliminates the need to assess motivation in more than one phase of the application and provides the opportunity to measure other factors that are pertinent to selecting a favorable resident.

150

Admissions: Selecting residents

Trends in education and carrier choices after ophthalmology residency training in academic year 2017

N. Kanchanaranya[1], Y. Titawattanakul[2], T. Pasurakul[2]

[1]Thammasat University Hospital, Khlong Luang, Pathum Thani, Thailand; [2]Thammasat University, Khlong Luang, Pathum Thani, Thailand

Introduction: At present , trend of ophthalmology residents have preferred to continue in subspecialty fellowship program more than work as general ophthalmologist by many essential.

Objective : To study and evaluation the current trends in education and carries choices of after finishing ophthalmology residency training program and the impact in each their decision in selecting each subspecialist.

Methods: All ophthalmology residents in Thai ophthalmology residency training programs were invited to complete the questionnaires while attending ophthalmology meeting conference. A total number of 64 were recruited. The favorite specialties and the factors that had impact on reasons of the subspecialty selection were recorded.

Results: From 64 questionnaires, the number of ophthalmologist training have scholarship (59.37%) more than non-scholarship (40.63%) and first five subspecialties that resident would possibly choose were retina (28.12 %), glaucoma (20.31%), cornea and refractive surgery (17.18%), oculoplastic (14.06 %), and uveitis (4.68 %) consecutively. The factors that influences the specialty selection were preferred have well knowledge in their subspecialty (25.42 %), having ability to do surgery and medication (23.72 %) consecutively. Most residents (95.32%) expressed the wish to continue in fellowship program and prefer to train in Thailand more than go to practice in general ophthalmologist (95.32 %) , Status of residency training have more impact than another factor ($p = 0.03$) in decision to training in subspecialist.

Conclusions: Ophthalmology residents trends to choose study in subspecialties by according to various influencing factors.

151

Assessment: Cutting edge tools and practical techniques

Assessing surgical competency for neck dissection: Tool development and validation study

N. Yang, E. Mercier, L. Guertin, E. Bissada, A. Christopoulos, M. Olivier, J. Tabet, T. Ayad

Université de Montréal, Montreal, QC

Introduction: The progressive implementation of Competency-based Education across medical specialties has created a need for objective means to assess residents' competencies. This is particularly true for surgical specialties where technical proficiency must be assessed. A systematic review conducted by the authors revealed a lack of objective assessment tools designed for head and neck surgeries. The objective of this study was to develop an objective assessment tool specific for neck dissection and provide validity evidence.

Methods: The neck dissection assessment tool (NDAT) was developed by 6 academic head and neck surgeons using a modified Delphi method. The NDAT and a previously validated assessment tool for grading overall surgical technique (OSATS) were used prospectively to evaluate 4 junior and 4 senior otolaryngology residents in a single tertiary hospital. Scores from the NDAT and OSATS were compared between junior and senior residents using non-parametric testing (Mann-Whitney U test). The Pearson correlation coefficient for NDAT and OSATS scores was also calculated.

Results: Twenty-four items were included in the NDAT based on experts' consensus. A total of 34 neck dissection evaluations were completed throughout the 2018 academic year. The average OSATS scores for the junior and senior residents were 63.8% [95%CI 58.1, 69.5] and 87.5% [95%CI 84.4, 90.6] ($p<0.001$). The average NDATS scores for each group were 63.1% [95%CI 50.2, 76.0] and 91.7% [95%CI 89.3, 94.0] ($p<0.001$). The Pearson correlation coefficient for both scores is 0.890 ($p=0.01$).

Conclusions: This study provides evidence of content, criterion and discriminant validity for an objective neck dissection assessment tool.

152

Assessment: Cutting edge tools and practical techniques

Individual class evaluation in a diverse residency education program

A. O. Nasr, F. Al-Reshaid, S. Al-Marzouq, N. Nabri, M. Al-Arfaj, A. Al-Saflan, A. El-Damati, S. Shomimi, H. Zakaria, Y. Al-Jehani, A. Al-Mulhim

King Fahad University Hospital, Khoar, Saudi Arabia

Introduction: Imam Abdulrahman University fellowship in general surgery is a new postgraduate program running its second surgical foundation year. It operates an integrated curriculum based on CANMeds competencies. A one-week condensed course, Boot Camp (BC), is provided quaternary to residents utilizing team teaching approach for integrated curricula. While different evaluation tools are introduced to have 360º view, team teaching performance remains a major challenge. Single whole course evaluation is a poor tool to evaluate team teaching classes. We aimed to study the validity of individual evaluation as a guide to improvement of BC standard and its relation to academic achievement.

Methods: An end-of-class individual evaluation of 5-points Likert Scale form is posted utilizing Socrative Application for smart phones. Summative performance data on each class were expressed using median and ranges. Mann-Whitney test was used to compare cumulative test scores versus feedback data for each subject category.

Results: The median (range) number of classes per BC is 27 (21-31), the number of instructors is 19 (15-24) and the median number of students per class is 22 students (12-33). Only 5/8 sub-standard classes improved post-feedback, other 3/8 were totally restructured. No significant difference between test scores and poorly evaluated classes (P=0.061) in support to findings similarly demonstrated in literature.

Conclusions: Individual class evaluation of BC represents valid tool for best practice in team teaching. Satisfactory evaluation of a certain class does not correlate to academic achievement in the BC.

153

Assessment: Cutting edge tools and practical techniques

Blink: Rapid visual diagnosis

S. Monteiro[1], J. Sherbino[1], M. Sibbald[1], K. Finlay[1], G. Norman[2]

[1]McMaster University, Hamilton, ON; [2]McMaster University, Dundas, ON

Introduction: While many skills must be evaluated in a context or specialty specific manner, visual diagnosis is a complex task nearly universal to medicine. The goal of the current study was to develop an assessment tool that establishes a benchmark of performance for diagnosing ECGs and lung radiographs.

Methods: Using a speeded protocol, we tested physicians' sensitivity to detecting abnormalities in ECGs and lung radiographs. Residents (12) and staff physicians (17) in Emergency Medicine participated. Version 1 contained 100 ECGs and version 2 contained 100 lung radiographs. In each version, 50 images were normal and 50 were abnormal. Images were displayed at one of four time windows: 175ms, 250ms, 500ms and 1000ms. For each participant, we calculated a d' statistic as a threshold independent, normally distributed measure of accuracy, at each exposure time.

Results: Average d' was 0.83 for ECGs and 0.97 for radiographs; d' for junior residents was lower, (0.95) than senior staff (1.12) for radiographs. Similarly, d' for junior staff and residents was lower (0.79) than senior staff (0.87). As shown in previous studies, d' was smallest for the shortest viewing time, on average (0.72) at 175ms compared to (1.10) for 1000ms for both versions.

Conclusions: While in-depth data gathering and additional diagnostic testing may help confirm a working diagnosis, physicians rely only on their own experience to determine if there is any underlying pathology present in a diagnostic image. The study is a novel approach to isolating the effect of direct experience on clinical expertise.

154

Assessment: Cutting edge tools and practical techniques

Assessing competence in diabetic wound management: Tool development and validity evidence

O. Selim[1], A. Dueck[2], C. M. Walsh[3], R. Brydges[1], M. Kulasegaram[4], A. Okrainec[1]

[1]University of Toronto, Toronto, ON; [2]Sunnybrook Hospital, Toronto, ON; [3]Hospital for Sick Children, Toronto, ON; [4]The Wilson Centre, Toronto, ON

Introduction: Diabetic foot wounds comprise a third of diabetes-related healthcare expenditures, and are the primary cause of amputation in Canada. Few studies focus on how to teach and assess wound management. Given the importance of 'assessment for learning' in Competence by Design, we aimed to develop, and examine specific sources of validity evidence for, an assessment tool of wound management competencies.

Methods: We organized our tool development and validation process using Kane's framework. Using a nominal group process involving 9 Canadian experts in diabetic wound management, we developed the tool items, and two 10-minute simulation-based testing scenarios. We then assessed 74 participants' (61 physicians, 13 non-physicians) performance during the two scenarios: 44 novices (<50 previous cases), 17 intermediates (50-500) and 13 experts (>500). Two assessors independently rated participants using our tool. Reliability was evaluated using Generalizability Theory. Test-retest reliability was measured with intraclass correlation coefficient (ICC) comparing raters' scores across scenarios. We also compared performance scores across the three levels of experience

Results: Internal consistency was excellent (Cronbach's alpha = 0.953). Test-retest reliability was excellent (ICC=0.971, CI 0.954, 0.982, average measures). Pooled inter-rater reliability was good (ICC=0.827 CI 0.806, 0.845, average measures). Scores differed significantly ($p<0.01$) between novice clinicians and intermediate and expert clinicians (latter two did not differ). Our Generalizability coefficient was 0.871.

Conclusions: The accumulated validity evidence suggests our tool can be used to assess novice clinicians' competence in diabetic wound management during simulated cases. We plan to continue establishing validity evidence for use in other settings.

155

Assessment: Cutting edge tools and practical techniques

Assessing the validity of an OSCE developed for rare, emergent, or complex clinical conditions in endocrinology and metabolism

S. Dizon, J. Malcolm, D. Pugh

University of Ottawa, Ottawa, ON

Introduction: Assessment of rare, emergent or complex medical conditions in Endocrinology & Metabolism (E&M) residents can be challenging because of the heterogeneity of clinical experiences. The use of Objective Structured Clinical Examinations (OSCEs) could potentially fill this gap when opportunities in the real-world environment are limited. The purpose of this study was to develop and administer an OSCE for E&M residents, and to gather validity evidence for its use.

Methods: A needs assessment survey was distributed to all E&M Program Directors and recent graduates to determine which topics to include in the OSCE. The top 5 topics were selected using a modified Delphi technique. OSCE cases were then developed and reviewed by four content experts. Five E&M residents and five Internal Medicine (IM) residents participated in the OSCE. Results were analyzed using a G study. Examiners and candidates completed a survey immediately following the OSCE.

Results: The mean score of IM residents was 41.7%, versus 69.3% in the E&M group ($p < 0.001$), with a large effect size (partial η^2 0.75). The G-coefficient was 0.74. Standard setting using a borderline regression method resulted in 80% of E&M residents and 0% of IM residents achieving the pass score. All residents felt the OSCE had high value for learning as a formative exam.

Conclusions: There is a perceived need to assess rare, emergent or complex cases, and the OSCE is a feasible option to assess residents managing cases that are not easily assessed in the workplace.

156

Assessment: Cutting edge tools and practical techniques

Development and validity of NITECaP; the National In-Training Exam for Canadian Pediatric neurology residents

S. Venkateswaran[1], S. Orr[2], S. Humphrey-Murto[3], J. Dupre[4], F. Bhanji[4], T. J. Wood[3], D. Pugh[3], D. Callen[5]

[1]Children's Hospital of Eastern Ontario, Ottawa, ON; [2]Cinncinati Children's Hospital, Cinncinati, OH, United States; [3]University of Ottawa, Ottawa, ON; [4]Royal College of Physicians and Surgeons of Canada, Ottawa, ON; [5]McMaster University, Hamilton, ON

Introduction: Progress testing allows for longitudinal assessment of residents at different stages of training. Small individual programs face the challenge of developing high quality progress tests. In 2014, the National In-training Examination for Canadian Pediatric Neurology Residents (NITECaP) was created via a combined effort of 9 Canadian pediatric neurology residency programs. The purpose of this study was to demonstrate validity evidence for this national OSCE progress test by demonstrating an association between scores from this assessment and those from a national high-stakes examination.

Methods: All Canadian pediatric neurology residents (PGY1 to 5) were invited annually to participate in NITECaP (2014-1018). The exam blueprint was based on the Royal College of Physicians and Surgeons of Canada (RCPSC) Pediatric Neurology objectives. Questions were designed to emulate the RCPSC short answer examination. All questions were scored by a single blinded rater to ensure standardization. Correlations between scores on the two examinations were calculated.

Results: Over five years, 55 trainees completed both the NITECaP and pediatric neurology RCPSC examination. There were positive disattenuated correlations for PGY-5 trainees between the NITECaP and the RCPSC pediatric neurology specific written portion 0.41 ($p= 0.007$), full written examination 0.40 ($P=0.007$) and pediatric OSCE 0.56 ($p<0.001$).

Conclusions: The NITECaP progress test correlates to the RSPSC pediatric neurology certifying examination providing validity evidence for a collaborative national progress test.

157

Assessment: Cutting edge tools and practical techniques

Logging out: A comparative analysis of automated logs and resident driven logbooks

R. McGinn, A. Lingley, M. McConell, G. Bryson, D. Dubois

University of Ottawa, Ottawa, ON

Introduction: Learner-driven logbooks are commonplace in medical education aiming to track exposure and infer learner competency. However, there is consistently poor accuracy and acceptance of logbook data. Furthermore, widespread adoption of electronic health records (EHR) carries with it largely untapped case exposure and patient outcome tracking. Taken together, manual logging may represent an unnecessary burden on learners and expense for residency programs.

Objective: We evaluated whether an EHR provides comparable or superior case exposure data relative to an electronic resident logbook (RLB) during anesthesiology residency. The primary outcome is the difference in total case exposure and the secondary outcomes are differences in total case exposure by postgraduate year or surgical specialty.

Methods: At a tertiary care referral centre, we performed a retrospective review of the case exposure for 42 anesthesiology residents from 2012-2018. The overall total case exposure and that for 7 surgical specialties (General, Gynecologic, Orthopedic, Thoracic, Urologic, Vascular and Neurosurgeries) in RLB was compared to the EHR (Anesthesia Information Management System, AIMS). Our primary outcome will be assessed using pearson R correlation coefficient and our secondary outcomes will be analysed using the Kruskal-Wallis test. Data will be presented with 95% confidence intervals.

Results: We are analysing the data for our study, which will be completed by April 2019.

Conclusions: Our study will evaluate the hypothesis that an EHR can replace the RLB for logging case exposure. Implications of this work may include greater accuracy and acceptance of logged data with additional quantitative surrogates for assessing competence including patient outcomes.

158

Assessment: Cutting edge tools and practical techniques

When words are your scalpel: Embracing subjectivity in learner assessment

M. Li[1], A. Kurahashi[2], S. Kawaguchi[1], I. Siemens[1], G. Sirianni[1], J. Myers[1]

[1]University of Toronto, Toronto, ON; [2]Temmy Latner Centre for Palliative Care, Toronto, ON;

Introduction: Among faculty who supervise postgraduate trainees in clinical settings, direct observation is infrequent. In part due to subjectivity, improving the reliability of assessments has proven challenging. The adoption of entrustable professional activities (EPAs) however, holds particular promise. Theoretical frameworks on trust formation by clinical supervisors have been identified, but processes to arrive at entrustment decisions using EPAs have yet to be explored.

Methods: This observational study involved palliative medicine faculty participating in a video webinar, prior to which participants directly observed and assessed the performance of a learner in a simulated, videotaped clinical encounter. Assessment information was entered electronically utilizing a corresponding EPA assessment tool. During the subsequent webinar, participants discussed their frame of reference for arriving at numeric and narrative assessments as well as entrustment decisions. Quantitative and qualitative analyses were completed on demographic data and webinar transcripts respectively.

Results: Among the seventeen participants, nine felt the learner had 'not yet' achieved entrustment. Faculty who indicated entrustment also tended to supervise less frequently. Faculty ascribed differing levels of importance to how versus what information was exchanged, which seemed to determine entrustment decisions. Perception of gaps in the learner's performance ranged from lacking competence to personal style differences and was frequently used to rationalize entrustment decisions.

Conclusions: Particularly for disciplines that rely heavily on effective communication, the temptation to overcome subjectivity in learner assessment should be resisted. Ideally, faculty should receive guidance on how to explain entrustment decisions, and learners should be prepared for variable interpretations of their behaviour.

159

Assessment: Cutting edge tools and practical techniques

Simplifying procedural skills assessment in medical specialties

P. Lépine

Université Laval, Québec, QC

Introduction: The O-Score was validated as a tool to assess procedural skills across a wide range of surgical specialties training programs. As we are moving toward Competency-based Education, there is a need at Université Laval for a generic procedural skills assessment tool that could be used for lower complexity procedures (thoracentesis, central venous catheter insertion, paracentesis, etc.) in various medical specialty residency training programs.

Methods: A first version of the tool was developed grounded in best available evidence and theory. Using an iterative approach, from January 2018 to January 2019, based on feedback from leaders in different medical specialties (critical care, internal medicine, respirology), and CBME specialists from the Université Laval and the University of Toronto, the tool was refined to meet the practical needs for technical skills assessment at Université Laval in the simulation and the clinical setting.

Results: I am proposing a tool that combines rating scales for key elements of procedural performance, a mini checklist, and a global entrustability scale. It is mostly adapted from the O-Score and from the assessment tool from the Learn, See, Practice, Prove, Do, Maintain Framework. The student-centered wording has also been inspired by internal documents from the Postgraduate Medical Education Office from the University of Toronto.

Conclusions: Based on early feedback, the current version of a generic procedural skills assessment tools for medical specialties: 1) facilitates the entrustment of junior residents to move from simulation to safe supervised clinical practice, and 2) promotes patients, staff and learners safety while performing various procedures.

160

Assessment: Cutting edge tools and practical techniques

Development of an assessment tool for entrustable professional activities in diagnostic imaging

J. Clarke, L. Stiles-Clarke, M. Garnier, D. Manos, L. Hughes

Dalhousie University, Halifax, NS

Introduction: As residency training evolves to Competency-Based Medical Education (CBME), we are aiming to ease the change process for faculty and residents. An integral assessment cornerstone in a CBME program is the use of entrustment scales for learner feedback. Although entrustment scales have been developed for specialties with observable patient encounters, the need exists for Diagnostic Imaging (DI)-specific scales where learners have less patient interaction. We developed a nationally-vetted tool for formative assessment of Entrustable Professional Activities (EPAs) specific to DI.

Methods: A national group of 26 experts (Program Directors in DI programs) were surveyed to provide qualitative feedback on two draft iterations of the tool in a Delphi process. In the first phase, 11 experts participated and 7 participated in the second phase. The data was analyzed thematically and used to revise the instrument. We also asked participants for their perspective on the coming implementation of competence by design and analyzed their responses thematically.

Results: Participants indicated that the draft tool was useful but required minor changes, which were incorporated in later drafts. They reported satisfaction with the final version. Participant opinions about competence by design were mixed but generally indicated uncertainty in the forms of worry and hope.

Conclusions: We developed an assessment tool for EPAs in DI which can be used by DI training programs. The participants verified the content validity of the instrument. The process of developing this assessment instrument with a group of experts increased participants' feelings of confidence to implement Competence by Design curricula.

161

Competency-based Education

Program administrators supporting program administrators through the transition to Competency-based Medical Education

M. Ladhani, S. Cameron

McMaster University, Hamilton, ON

Introduction: As the program administrators (PA) play a key and critical role in the transition, the PAs of the 8 programs, with the support of the McMaster PGME CBME office, agreed that it would be important to support other PAs going through the transition to CBD.

Methods: A CBME PA subcommittee was formed in April 2018. The membership of the PA subcommittee was confirmed, monthly meetings were set and the terms of reference were developed. A work plan was developed defining key topic areas that would be important for PA development on CBD. The subcommittee's goals and objectives were to: (1) Create a forum for PAs to meet and share information and develop communication strategies; (2) to create best practices for PAs as it relates to competency based medical education; (3) identify resources and infrastructure that will enable the successful adoption of CBD at McMaster; (4) to support and promote the scholarly work of Pas. A series of lunch and learn sessions and workshops were created by PAs and delivered to other PAs through the year.

Conclusions: The sessions and workshops have been well received by PAs. The CBME PA subcommittee provides a forum for PAs to ask question; learn from their peers; and support each other by sharing templates, challenges, and wins. A supportive PA community can alleviate some of the stress and anxiety experienced by some PAs. This community also empowers them to provide meaningful contributions to their program as they transition to CBD.

162

Competency-based Education

The new Competency By Design curriculum – How are otolaryngology residents perceiving it?

B. Voizard[1], C. Vachon[1], W. Guertin[1], T. Ayad[2]

[1]Université de Montréal, Montreal, QC; [2]Centre hospitalier de l'Université de Montréal, Montreal, QC

Introduction: The Competency By Design (CBD) curriculum was introduced in Canadian medical faculties in 2017. To our knowledge, no study has yet assessed the perspective of Canadian otolaryngology – head and neck surgery (OTL-HNS) residents. Our purpose was to evaluate their perception and comprehension of CBD's structure and goals.

Methods: Between October 2018 and March 2019, Canadian OTL-HNS residents received a validated 7-question survey via the cloud base SurveyMonkey. The survey measured residents' understanding of the curriculum, the perceived impact of CBD on the quality of their training, the methods employed by their programs to implement CBD, and the perceived effectiveness of such methods.

Results: 81 residents answered (41 in CBD; 40 in the traditional curriculum). The response rate was 48%. Although 45% of the respondents describe themselves as able to explain CBD, and 47% can explain EPAs, only 36% can explain the milestones. While 57% think their technical expertise will improve with CBD, 35% expect their theoretical knowledge will be enhanced. Residents and attendings were prepared for CBD implementation, notably through formal courses and instructions, dedicated clinical time for EPA evaluations, or by assigning specific attendings for each EPA evaluation. 73% of the respondents believe the attendings must considerably modify their schedule to directly observe residents, and 27% think attendings have been well prepared to do so.

Conclusions: OTL-HNS residents have an equivocal perception of CBD, which could be attributed to a limited understanding of the curriculum. They feel CBD entails major changes for attendings and requires considerable preparation.

163

Competency-based Education

Faculty and resident perceptions regarding transition to Competence By Design – The devil is in the details

A. Kassam[1], R. Ellaway[1], K. Millar[2], J. Gaudet[1], R. Eng[1], S. Pokharel[1], C. Adegbesan[1], J. A. Lord[1]

[1]University of Calgary, Calgary, AB; [2]Alberta Children's Hospital, Calgary, AB

Introduction: It is important to consider the perceptions of residents and faculty stakeholders as Competence by Design (CBD) is implemented across Canada. Helping identify enablers and barriers for success can aid programs to successfully plan for their transition. The purpose of this cross-sectional study was to understand physician perceptions regarding CBD to assist with implementation at our institution.

Methods: Faculty and residents at the University of Calgary were surveyed using a previously developed scale. Surveyed items included participants' level of involvement in medical education and CBD implementation as well as their opinions of potential barriers, facilitators and benefits of transition. Data were reported using descriptive statistics.

Results: Of the 2072 faculty and 469 residents who were invited to participate, N=501 completed the survey (20% response rate). Common barriers included insufficient time in the clinical arena and inadequate training in assessment and feedback. Enablers included effective leadership, clear expectations and engaged faculty. Surprisingly, faculty and resident satisfaction, better quality healthcare for society and greater physician accountability were reported as least important benefits of transition.

Conclusions: Our results indicate that clear faculty expectations and effective leadership are important to help facilitate implementation. Furthermore, faculty and resident perceptions may not necessarily align with the RCPSC's mission of CBD. Further research is warranted to determine whether these results are shared more broadly across Canada.

164

Competency-based Education

Perceptions of key Canadian stakeholders: Philosophies, principles and practices of CBME

K. Dore[1], J. Sherbino[2], G. Regehr[3], S. Ginsburg[4]

[1]McMaster University, Burlington, ON; [2]McMaster University, Hamilton, ON; [3]University of British Columbia, Vancouver, BC; [4]University of Toronto, Toronto, ON

Introduction: CBME is a global phenomenon taking Canadian Residency Education by mandated storm in the last ten years. While much conversation exists around implementation the Canadian CBME community doesn't agree on the underlying philosophy or principles, potentially resulting in misinterpretation/ miscommunication and potentially unproductive conversations. This qualitative study examined "What are the perceptions of diverse key stakeholders regarding the philosophies, principles and practices of CBME in Canada".

Methods: Researchers identified CBME designers and scholars from diverse perspectives/lenses and geographies with varied professional roles, using snowball sampling after each semi-structured interview identifying additional potential interviewees. Iterative inductive thematic analysis was used. Initial coding was established with a subset of transcripts by 2 researchers who also reviewed all of the transcripts. All transcripts were coded, with a review of theme presented to the team.

Results: Seventeen semi-structured interviews conducted between September 2018 and November 2018 resulted in five themes: Problems with the traditional education model CBME was intended to solve; Philosophies; Principle; Practices; and Unintended Consequences. In addition, observations of the conversation proved insightful, some participants easily articulated the philosophies and principles, others struggled significantly.

Conclusions: This study demonstrated areas of discrepancy and overlap with the overarching philosophies and principles of CBME. Evident from the interviews, many people wanted to have this discussion and were grateful for having a voice. This study provides initial insight into perceptions and allows for discussions to begin on how to use our areas of agreement and discrepancy to form better conversations and better inform CBME implementation.

165

Competency-based Education

Building resilient capacity: Case studies in CBME in faculty development to support learners, faculty and education leaders

S. Glover Takahashi[1], S. Berry[1], D. Dagnone[2]

[1]University of Toronto, Toronto, ON; [3]Queens University, Kingston, ON;

Introduction: Expectations of faculty in competency based (CB) reforms are rapidly evolving. This case study employs a broad definition of who needs 'faculty development' (FD) (e.g. faculty, learners, educational leaders) to explore what they need for success including resilience when implementing CB reforms.

Methods: Multi methods explored over 20 cases of FD through: document analysis, expert consultations, analysis of a user survey and 21 semi structured interviews. Rich qualitative and quantitative data were explored in an iterative manner using a grounded theory look at multiple perspectives (i.e., faculty, learners, educational leaders), a broad range of FD topics (e.g. change, workplace assessment, feedback), and a wide variety of FD tools (e.g. emails, newsletters, workshops, mentoring).

Conclusions: The paper's case studies highlighted the following: (1) Learners, teachers and education leaders have 'faculty development' needs in both the content and processes related to CB reforms; (2) Changes to CB processes are more challenging than the revision of content; (3) The positive impact of a strategic approach for flexible and adaptive FD; (4) The strong benefit to concurrent curriculum development and faculty development collaborations; (5) The need for caution about the volume of concurrent CB changes given their impact on stress, wellness and resilience; (6) The benefits of communities of practice and personal supports to learners, faculty and education leaders; (7) Enhanced FD structures, systems, processes and approaches are needed to support successful implementation of CB reforms; (8) Users perceive value to access and support to enable their adaptation of sample FD resources for local use.

166

Competency-based Education

Operationalizing Competence Committees: Lessons learned from early implementers of CBME in the Canadian context

M. Andrew, S. Askari, T. Hanmore, J. B. Dare, J. Trier, M. Hussain

Queen's University, Kingston, ON

Introduction: With the implementation of Competence Based Medical Education (CBME)/Competence by Design (CBD) at Queen's University in July of 2017, there have been questions around how to effectively run a Competence Committee (CC). The CBD model dictates that a CC will review resident assessment portfolios to inform decisions about progress/promotion. A defensible decision-making process must be in place to confidently promote residents through stages of training. Practical approaches to operationalizing progress/promotion at the CC level within the CBD model in Canada is largely unexplored.

Methods: This qualitative research aims to develop a working framework for operationalizing CCs with comprehensive descriptions of how key stakeholders perceive and approach various themes within the framework. The framework will be developed through three phases of the study, each phase adding onto the previous, allowing additional themes to emerge, when possible. This presentation reports on the first phase of the project which consists of recording interdisciplinary faculty development CC workshops/focus groups designed by the research team. The CC development workshops provide an exploratory, hands-on approach to critically analyzing and addressing key CC processes.

Conclusions: Preliminary conclusions from the beginning of phase one in our research, note the value of interdisciplinary practical (hands-on) faculty development training of CC members. The interdisciplinary approach has allowed disciplines to break out of silo-thinking, critically analyze and address gaps in current CC processes. Initial results promote the use of shared mental models, clear procedural frameworks, and accurate documentation.

167

Competency-based Education

Increasing direct observation of clinical skills - A quality improvement approach to Competency-based Education

S. Lebeuf[1], L. Fleming[1], L. Arsenault-Blanchard[2], M. Psihogios[1], N. Mercado[1], J. Roy-Lavallee[1], C. Steinegger[1], A. Toulany[1]

[1]Hospital for Sick Children, Toronto, ON; [2]University of Toronto, Toronto, ON

Introduction: Competence By Design (CBD), a new model of residency training, requires direct observation and assessment of residents' skills. Implementation of CBD in busy clincial environments is challenging. We aimed to increase the number of recorded clinical observations among first year paediatric residents during their Adolescent Medicine rotation at the Hospital for Sick Children.

Methods: We used the Model for Improvement as our quality improvement (QI) framework. Problem characterization was performed using a fishbone diagram, process mapping, and stakeholder interviews. Rapid cycle change methods using Plan-Do-Study-Act (PDSA) cycles were used to test changes which included staff education sessions, reminders, and optimization of clinic bookings.

Results: At baseline, the mean number of recorded direct observations was 0.35 per resident per 1 month rotation. This increased to 4 per resident per 1 month rotation after implementation of our intervention, however, it not sustained due, in part, to the introduction of a new electronic platform. Qualitative feedback revealed concerns about power differentials: staff expected residents to initiate direct observation, however, residents did not always feel comfortable asking.

Conclusions: The implementation of CBD represents a significant shift in the culture of learning and feedback. Education, reminders, and attempts to change clinic scheduling were insufficient to sustain an increase in the number direct observations in our clinical setting in the long-term. Future PDSAs will test strategies to standardize pre-scheduled direct observations at various time points in the rotation.

168

Educating for quality of care, patient safety, and resource stewardship

A national needs assessment on quality improvement and patient safety education in Canadian emergency medicine residency programs

S. Trivedi[1], R. Hartmann[1], J. Hall[2], L. Nasser[3], O. Levac-Martinho[4], D. Porplycia[5], E. Kwok[4], L. Chartier[2]

[1]University of Saskatchewan, Saskatoon, SK; [2]University of Toronto, Toronto, ON; [3]McMaster University, Hamilton, ON; [4]University of Ottawa, Ottawa, ON; [5]University Health Network, Toronto, ON

Introduction: Quality improvement and patient safety (QIPS) are increasingly recognized as integral to the provision and advancement of emergency medicine (EM) care, and they are included in the Canadian Medical Education Directives for Specialists (CanMEDS) framework. However, the level of QIPS education and support that Canadian EM residents receive in their residency program is unknown, so we sought to assess this.

Methods: This descriptive, cross-sectional electronic survey was disseminated to all 535 Canadian EM residents from both Royal College (RC) and Family Medicine - EM programs. The survey consisted of multiple-choice, Likert and free-text entry questions. Themes included a) familiarity with QIPS; b) local opportunities for QIPS projects and mentorship; and c) desire for further QIPS education and involvement.

Results: 189 (35%) EM residents completed the survey, representing all 17 medical schools. 77% of respondents were from the RC stream. 51.5% and 47.2% of respondents reported not having readily available QIPS mentorship opportunities or local QIPS projects to participate in, respectively. 17.5% of respondents reported that QIPS methodologies were taught in their residency program. 66.9% indicated a desire for increased QIPS teaching, and 70.4% for becoming involved with QIPS training and initiatives.

Conclusions: Canadian EM residents are interested in obtaining greater QIPS education, project and mentorship opportunities, but many perceive they do not have adequate access to these. As the importance of QIPS increases in EM, more robust educational infrastructures may be necessary. Future efforts may include the standardizing of QIPS postgraduate curricula and improving access to QIPS opportunities nation-wide.

169

Educating for quality of care, patient safety, and resource stewardship

The new morbidity and mortality conference – A prospective approach

A. King, B. M. Ostro, K. Miller

The Ohio State University Wexner Medical Center, Columbus, OH, United States

Introduction: To make morbidity and mortality conference (M&M) more engaging with an emphasis on cognitive biases, we launched a novel prospective approach. Traditionally, M&M format has been a case presentation with a retrospective analysis in lecture-based format. Learners felt that the traditional format failed to promote attendee engagement and lacked attention to cognitive biases. Our format provides learners with a more engaging environment to learn about cognitive errors and de-biasing strategies.

Methods: The conference begins with a brief case presentation that includes only critical data. The next slide defines the adverse outcome. We intentionally omit details of the ED course in order to foster discussion of possible patient-related, systems-related and cognitive factors. Attendees are then divided into small groups. Each group develops a list of the potential errors followed by a discussion of de-biasing strategies. Small groups then reconvene to discuss actual fishbone analysis.

Results: Twenty-one of 36 possible responses (58.3%) were received. Residents unanimously agree that the new format is more effective at teaching cognitive biases (57.1% strongly agree, 42.9% agree). Nearly all (95.2%) residents felt that the new format is more effective at teaching de-biasing strategies (47.6% strongly agree, 47.6% agree). Roughly 90% of residents felt that the new format better promotes learner engagement (61.9% strongly agree, 28.6% agree).

Conclusions: Our data suggests that our novel approach to M&M is more effective than the traditional format at teaching cognitive biases and de-biasing strategies while better promoting learner engagement.

170

Educating for quality of care, patient safety, and resource stewardship

Implementation of a resident-led patient safety curriculum

L. Hanes[1], J. Afifi[1], A. Lynk[2], S. Manos[1]

[1]IWK Health Centre, Halifax, NS; [2]Dalhousie University, Halifax, NS

Introduction: Quality improvement and patient safety (QIPS) are main pillars for any high reliability healthcare organization. Developing expertise in QIPS is a key competency for physicians. There is significant heterogeneity in educational content and methods that are used to teach QIPS. Our objective was to implement and evaluate a curriculum to teach principles of QIPS in a way that engages residents and builds a culture of patient safety (PS).

Methods: Pediatric residents participated in an introductory PS lecture and monthly rounds to review significant patient safety incident (PSI) case examples led by senior residents with staff mentors. The curriculum was implemented as part of the mandatory academic half day and supplemented with online Institute for Healthcare Improvement (IHI) modules. Residents were invited to complete a pre- and post-implementation electronic survey. We used a modified version of the "Medical Student Patient Safety Questionnaire", assessing knowledge, behavior and skills related to PS.

Results: 18 of 24 pediatric residents (PGY1-PGY4) completed the pre-implementation survey. 83% were involved in a PSI during residency (47% disclosure of an adverse event). 61% felt telling others about an error they made would be very difficult or difficult. Only 28% of residents felt they could analyze a PSI to identify contributory factors. Preliminary feedback indicated a high level of satisfaction.

Conclusions: Initial implementation of a PS curriculum was feasible and well received by residents. Preliminary results indicate room for improvement in residents' knowledge and feelings towards PS culture. Further analysis will be completed with a post implementation survey.

171

Educating for quality of care, patient safety, and resource stewardship

Design and delivery of a human factors for patient safety interprofessional learning intervention in a UK training region

C. Tomlinson[1], J. Crick[2], J. Tomlinson[3]

[1]Sheffield Children's Hospital, Sheffield, United Kingdom; [2]Health Education England, Hull, United Kingdom; [3]Health Education England, Leeds, United Kingdom

Introduction: Effective training necessitates competencies in non-technical domains of leadership & professionalism to ensure patient safety. UK healthcare professional (HCP) curricula align to CanMEDS domains promoting patient safety & analysing safety incidents, as well as self-awareness in personal well-being. We sought to deliver an interprofessional learning opportunity tailored to these often-unmet educational needs.

Methods: The innovative Health Education England Future Leaders Programme (FLP) supported & funded training & development of a peer faculty with expertise in Human Factors for Patient Safety (HFPS). A one-day interactive workshop was delivered 8-12 times per year to 8-20 HCPs per session. We collected 6-point Likert scale & free-text feedback including "promises to self".

Results: Feedback processed for 14/22 complete courses (n=154). 94% perceived the programme would "very much/extremely so" affect the way they see others professionally & 95% would affect their own behaviours to a similar degree. Response themes encompassed "We all make mistakes regardless of seniority or experience", "Consider the goal, not the process – try not to be distracted by our biases", "Sleep cycles & performance were powerful concepts", "Real clarity of professional communication is pivotal". 100% would recommend the course to colleagues.

Conclusions: Patient safety principles & personal well-being are key contemporary domains in UK curricula & CanMEDS. Limited local development of tailored training interventions was effectively addressed through an innovative peer faculty model. This receives exceptional feedback, offering faculty leadership opportunities to a small number of multiprofessional trainees & participation in high-quality HFPS training for many more.

172

Educating for quality of care, patient safety, and resource stewardship

The medico-legal risk experience of Canadian medical trainees

A. McDougall, C. Zhang, J. Zaslow, Q. Yang, J. Nuth, E. Tsai, S. Lee, G. Lefebvre, L. Calder

Canadian Medical Protective Association, Ottawa, ON

Introduction: There is evidence for the value of medico-legal data in understanding patient safety risk and focusing safe medical care efforts. To date, there has been little information available on the experience of medical trainees with legal actions or regulatory complaints, and any notable characteristics of these cases.

Results: CMPA analysts conducted a mixed methods analysis of legal actions and advice requests involving postgraduate trainees. The study applied descriptive statistics and directed content analysis to consider case-level data in depth.

Results: From 2008-2017, CMPA medical trainees accounted for approximately 13% of CMPA membership. Comparatively they were involved in 8-11% of legal cases. A 10-year trend analysis indicates that trainees (1) are calling the CMPA more often than other segments of membership requesting medico-legal advice, and (2) are facing increasing threat to civil legal actions. A content analysis of advice calls over a 2-year period highlights that 37% of trainees asked a question related to information transparency and confidentiality.

Conclusions: The results from this study provide new insights about the medico-legal experience of Canada's postgraduate trainees. Along with relaying findings of medico-legal themes involving trainees, we present several current resources for medical educators and trainees interested in learning and sharing more about Canada's medico-legal landscape.

174

Trainees leading medical education change: For trainees, by trainees

Postgraduate dental students motivations toward career choice

A. Makarem, M. Mohktari, A. Emad Zadeh

Mashhad University of Medical Sciences, Mashhad, Iran

Introduction: Assessment of motivation to enter the dental residency can affect the health education of dentists committed to the public as effective. The aim of this study was to evaluate the motives for choosing of post graduate dental resident in Mashhad dental school.

Methods: This cross-sectional study was performed on all dental residence (70 persons). Data was gathered by a questionnaire. The content validity was done by experts and its reliability confirmed trough Cronbach's alpha. Data analysis was carried out using descriptive statistics and independent t-test and ANOVA.

Results: A total of 70 residents (32 males, 38 females) with a mean age of 27.8 ± 3.7 completed the questionnaire. According to the questionnaire, the most important motivation for choosing the dental specialty fields were: acquisition of specialty and the academic job (3.65), specialty interest and income (4.32), to educational work and help people (3.42), and the ease and lack of job stress (3.18). There was no significant difference between factors affecting the specialty choices and marital status. The factor of ease and lack of job stress was important in single residents (p=.023).

Conclusions: The results showed that the "acquisition of specialty and the academic job" and "specialist interest and high income" are the factors that more affecting on choosing the dental specialty fields. Knowledge of the factors influencing the choice of discipline for the relevant authorities in determining appropriate strategies for the promotion of education and health in the community will help.

175

Health policy and residency education

The current state of international medical graduates in Canada: From aspirant to practice

G. Barnum

Canadian Post-M.D. Education Registry (CAPER), Ottawa, ON

Introduction: There has been a substantial amount of focus on International Medical Graduates (IMGs) in the past year. The National IMG Database is maintained by the Canadian Post-M.D. Education Registry (CAPER) and is the authoritative source for data on IMGs. In this submission we intend to highlight population-level trends in IMG aspirants, IMG post-M.D. trainees, and IMGs currently practicing in Canada to inform policy on residency education.

Methods: The National IMG Database is assembled from three data sources. The Medical Council of Canada (MCC) provides data on all IMGs passing their qualifying exams. The CAPER database provides data on IMGs currently in post-M.D. training in Canada. Finally, the MD Select Database provides information on IMGs currently practicing medicine in Canada.

Results: The following are illustrative examples of data points derived from the database. First, the number of IMG aspirants passing the MCC Qualifying Evaluation Exam Part 2 (MCCQEII) has increased substantially (37%) since last year. Second, for those IMGs in training there has been a steady increase (65% increase since 2012) in the number of trainees earning the MD in Ireland and coming to Canada for post-M.D. trainees. Finally, for IMGs currently practicing in Canada almost 2 in 5 have been identified as having Canadian post-M.D. training.

Conclusions: The National IMG Database combines data from disparate data sources to provide an annual snapshot of IMG aspirants, trainees, and those in practice. The National IMG Database provides the data necessary to make evidence-based decisions in terms of residency education policy.

176

Leadership education

How women approach academic leadership opportunities: Implications for resident leadership education

S. Cristancho, L. Lingard, D. E. Yuen

Western University, London, ON

Introduction: Despite decades of leadership development for women in academic medicine, their initial upward trajectory has plateaued. Studies have focused on perceptual and structural barriers to women's leadership advancement. However, conditions that influence women to opt-in or opt-out of an available leadership opportunity remain underexplored. Better understanding of this process may offer insights to meaningfully design resident leadership education.

Methods: A qualitative descriptive design was used. Twenty-nine women in an academic health sciences center who have considered formal leadership opportunities were purposively selected to include different career stages. Individual semi-structured interviews were conducted. Interview transcripts were analyzed using qualitative content analysis.

Results: Across all career stages, four main conditions influenced participants' thinking for opting-in or opting-out of leadership opportunities: 1. Credulity, or naïve assumptions, regarding the importance of leadership roles for career advancement; 2. Conviction to make a difference; 3. Sponsorship to secure leadership roles; and 4. Workplace and home support. While the last two resonate with existing literature on academic women in leadership, the first two offer new insight into a central tension – between Credulity and Conviction – within women's choices around leadership opportunities. Credulous or naïve thinking about leadership seemed to undermine women's ability to capitalize on their convictions.

Conclusions: A number of conditions influence whether women opt in or out of formal leadership opportunities. Some of these conditions are in tension. In particular, we need to better understand the origins and impacts of women's credulity regarding leadership, so that this does not invisibly undermine their success.

177

Leadership education

Back to the future leaders

J. Tomlinson[1], C. Tomlinson[2], J. Crick[1]

[1]Health Education England, Leeds, United Kingdom; [2]Health Education England, Sheffield, United Kingdom

Introduction: A lack of medical leadership has been identified in several NHS reports such as the Francis and Kirkup reports. Health Education England (HEE) have addressed this through leadership development programmes allowing trainees to take time out of training in a non-clinical leadership role.

Methods: A qualitative and quantitative survey was sent to previous leadership fellows via e-mail. Responses were received from 18 previous fellows. Questions were asked about type of fellowship, time back in clinical practice, impact on clinical practice, and the transition back to training and clinical work.

Results: There were 18 responses. Nine fellows (50%) had education roles, 1 (5.5%) was hospital based, 7 were split between educational/hospital roles (39%). Seven fellows (39%) worked on QI projects, 6 (33%) on simulation projects, 1 (5.5%) on research, 1 (5.5%) on patient safety, 1 (5.5%) on end of life care, and 1 (5.5%) on the programme itself. There was marked variation in return to practice - some found this straightforward but others identified difficulty with workload, lack of support and initial lack of confidence. None of those responding had support on returning to programme. Seventeen fellows (94%) felt the skills gained were useful in their clinical practice. Comments included 'far more self aware', 'more able to engage with improvement work' and 'more able to communicate with and get the best out of colleagues'.

Conclusions: 94% of fellows report their leadership year has enhanced their clinical practice. Further work is needed to ensure the skills gained are maintained and exploited.

178

Leadership education

Critical success factors in medical education leadership

L. Desanghere[1], A. Saxena[1], M. Chan[2], G. Moineau[3]

[1]University of Saskatchewan, Saskatoon, SK; [2]University of Manitoba, Winnipeg, MB; [3]Association of Faculties of Medicines of Canada, Ottawa, ON

Background: Leadership is a critical element in the outcome(s) of any organization, with these outcomes often dependent on the leader's skills, knowledge, abilities and competencies. However, medical education leadership has not always been at the forefront of leadership research and the critical success factors (CSF) for effective leadership in this context is underdeveloped. The purpose of this study was to identify CSFs for effective medical education leadership.

Methods: Survey data was collected from 67 senior physician leaders (34 female) from across Canada. Participants were asked to respond to open-ended questions about factors which they believed to contribute to effective leadership in their role, along with specific tasks they had performed (with both successful and unsuccessful outcomes) and associated factors which contributed to these outcomes. Content analysis was used to generate emergent themes from the data.

Results: Participants identified both intrinsic (e.g. emotional intelligence, having certain intellectual skills and personality traits) and extrinsic factors (e.g. experience/training, intra-organizational support, effective teams, relationships) as contributing to their success in their leadership roles. Participants reported a variety of tasks (e.g. accreditation, program development, general leadership/management) which resulted in both successful and unsuccessful outcomes. Factors contributing to these outcomes were numerous (e.g. effective teams and communication, support from others, and stakeholder buy-in, and experience).

Conclusions: Effective medical education leadership requires deliberate attention to the CSFs in strategic, operational and individual domains. Individual leadership practices and leadership development programs would benefit by addressing these CSFs.

179

Physician health and wellness

Development of a wellness module for PGY-1 academic half-day

S. Avery[1], J. ODea[2], H. Coombs[1], H. Power[1], B. Whelan[1]

[1]Memorial University of Newfoundland, St.John's, NL; [2]Memorial University of Newfoundland, St. Philip's, NL

Introduction: Wellness and resiliency are important components of residency curriculum, though challenging to address. Physician's resiliency skills help them to maintain wellness, avoid burnout and provide quality care. It is unclear whether residents are aware of wellness initiatives and resources. This study involved a needs assessment among medical residents at Memorial University of Newfoundland (MUN). Results were utilized to inform academic half-day (AHD) content for PGY-1 trainees.

Methods: A survey was developed following a literature review and distributed to all residents (n=287) at MUN. The survey assessed the residents' knowledge of current wellness initiatives and resources. Survey results were analyzed and the identified knowledge gaps were used to inform curricular content. The PGY-1 AHD was subsequently evaluated (n=38) to examine resident satisfaction and gather feedback to inform future sessions.

Results: The survey response rate was 44% (n=126/287). 54% (n=60/112) of residents reported being only slightly knowledgeable about resident wellness. 70% (n=77/110) of respondents indicated they were not aware that services were confidential. Qualitative comments included the need for wellness role models, wellness promotion, suggested AHD topics and the need for local wellness resources for rural residents.

Conclusions: Wellness and resiliency are critical concepts to foster in postgraduate medical education. Survey findings suggest that a significant proportion of MUN residents are unaware of wellness initiatives resources. AHD evaluations demonstrated that large didactic sessions are not an effective format for promoting wellness competencies. Work is needed to enhance wellness opportunities and competencies in our postgraduate training programs.

180

Physician health and wellness

“Resilience by design” – Description of a pilot radiation oncology wellness program

H. Dahn, C. Thomson, D. Bowes, G. Ilie, R. Rutledge

Dalhousie University, Halifax, NS

Introduction: A recent national survey of Canadian Oncology residents found a burnout rate of 42% in respondents. Low resiliency has been associated with higher burnout, and therefore strategies to improve resident resiliency may decrease burnout rates. A pilot resiliency program was developed for Radiation Oncology residents.

Methods: The pilot program included an initial 2-hour resident wellness seminar with a pre-, post- and 3-month post-survey. The seminar, led by a local Radiation Oncologist, covered topics such as mindfulness, healthy habits and reframing stress and focused on group discussion. A follow up resident and staff session was a 1-hour informal group discussion session focused on sharing personal experiences of dealing with difficult cases and discussing stress-management and self-care strategies.

Results: The resident group (n=8) had a burnout rate of 50% and an average Connor-Davidson Resiliency score of 68, which was comparable to the national population. Overall rating of the initial resident seminar was 8.3/10. Individual topics were rated from 7.0-8.9/10 in terms of usefulness to participants as residents. Overall rating of the resident and staff session (n=9) was 8.4/10 with individual activities rated from 8.3-8.8/10. Many comments indicated an interest in participating in these sessions more frequently.

Conclusions: The pilot Radiation Oncology resident program had excellent initial feedback with strong interest from many participants for more sessions focused on fostering resiliency and wellness in the future. These results suggest that resilience education is an essential part of Radiation Oncology residency curriculum and is valued highly by both residents and faculty.

181

Physician health and wellness

Well-Med: A multidisciplinary approach to supporting radiation oncology resident wellness

I. Voruganti, B. Millar, I. Ackerman, M. Follwell, J. Croke

University of Toronto, Toronto, ON

Introduction: Burnout and wellness have emerged as important areas within post-graduate medical education. We aimed to identify the wellness needs of radiation oncology residents in our program, and develop a framework to support wellness, and cultivate the communicator, collaborator, professional and leader CanMEDS roles.

Methods: Curriculum development was mapped using Kern's six-step approach. A literature review assessed the wellness landscape in postgraduate medical education and radiation oncology, and identified gaps. Targeted needs assessments of the residents (n=17) were done in the areas of general wellness, mentorship and leadership. Results informed the development and implementation of wellness curriculum goals and interactive sessions.

Results: The needs assessments identified reflection, mentorship and leadership as wellness program pillars, and these were combined to form the "Well-Med" program. For the Reflection component, a narrative medicine workshop series was developed exploring themes of identity, work-life balance, uncertainty and creativity in oncology. The Mentorship component includes implementation of a formal mentorship program with tools to facilitate faculty-trainee matching, guidelines for mentoring relationships and a template for individualized career plan discussion. The Leadership component comprises a speaker series and tailored workshops to address key topics of interpersonal and leadership styles, teamwork, negotiation and conflict management. Well-Med was introduced to residents in February 2019 and will be implemented in a step-wise fashion during protected academic time.

Conclusions: We present a strategy for developing a formalized, multifaceted program supporting radiation oncology trainee wellness. Further research will include curriculum evaluation and consideration for expansion to other programs.

182

Physician health and wellness

Mental health: It's good to talk

E. Vaux

Royal College of Physicians of London, London, United Kingdom

Introduction: Burnout, work related stress, psychiatric morbidity and suicide are increasingly recognised within the physician workforce. This comes at a professional cost (productivity, days lost, careers lost) and personal cost (loss of enjoyment at work, impact on home life, lives lost). Doctors are not good at seeking help; denying there is a problem, not recognising there is a problem or fearful of any stigma or losing their job. These can magnify the problem further.

Aim: The Royal College of Physicians (RCP) launches the campaign ‘Mental health: It’s good to talk’ in 2019. The campaign shines a spotlight on the mental health of physicians; by talking more about mental health issues and their impact we can start to take away some of the stigma. At the same time “It’s good to talk” highlights the importance of talking as one therapeutic approach.
A mental health and wellbeing toolkit has been developed to aid self-assessment and the recognition of warning signs in others. The wellbeing map focuses on prevention. Supporting resources are signposted to. @ThisDoctorCan enables showcasing of physicians living and working with mental health illness with the aim of breaking down some of the barriers to those in need of help seeking help.

Conclusions: The RCP national campaign “It’s good to talk" starts to reset the mindset about mental health and what we can do to prevent it, recognise warning signs in ourselves, and in others, and what steps we can take to seek the right support.

183

Fatigue risk management/Resident duty hours

Forget the “July effect”, what families really think about is the 23rd duty hour

R. Gupta[1], D. Newhook[2], K. Eady[2], R. Ng[2], K. Moreau[3], J. R. Frank[4], H. Writer[3]

[1]McMaster University, Hamilton, ON; [2]Children's Hospital of Eastern Ontario Research Institute, Ottawa, ON; [3]University of Ottawa, Ottawa, ON; [4]Royal College of Physicians and Surgeons of Canada, Ottawa, ON

Introduction: Studies on resident duty hours have not convincingly reconciled the potential beneficial or detrimental effects on patient safety, resident education, and resident well-being. Within the literature, there is little investigation of the effect of duty hours and handover frequency on the patient/family experience. Patients, families, and residents interact regularly, at all hours, in the Pediatric Intensive Care Unit (PICU) and thus, perspectives of duty hours may influence patient-family-provider relationships. We aimed to explore family members’ perspectives of resident duty hours, and how they may affect their care experience in the PICU.

Methods: Ten family members of PICU patients participated in semi-structured interviews exploring their perspectives on duty hours. Interviews were recorded and transcribed verbatim. We performed a qualitative content analysis to identify major themes within the data.

Results: There was no consistent preference for duty hour duration nor handover frequency. Family members did however, express pertinent values on the topic and three main themes emerged: establishment of rapport through continuity of care; perceptions of resident fatigue and its potential impact on care quality; and perceptions of handover quality.

Conclusions: A spectrum of family member perspectives on duty hours and handovers exists, without clear preference. Factors such as continuity of care, provider familiarity, as well as perceptions of fatigue and handover likely influence the quality of the patient-family-provider relationship. These factors overlap significantly with concepts of trust and communication, central to establishing a therapeutic relationship. Future studies and regulations should consider the effects of resident duty hours on patient-family-provider relationships.

184

Teaching and learning in residency education

Internal medicine residents' perspective of a multidisciplinary clinical teams rotation

M. Kalluri, K. Chan, L. Keenan

University of Alberta, Edmonton, AB

Introduction: Effective teamwork education programs should provide learning opportunities that are authentic and practical for the learners[1]. The Multidisciplinary Clinical Teams (MCT) rotation is a novel 2-week rotation designed for 2nd year core internal medicine residents to facilitate knowledge and understanding of patient-centered care (PCC) within diverse non-hospital based settings: multidisciplinary clinics, rehabilitation programs, home visits, and self-selected opportunities. This qualitative study explored residents' perceptions of the MCT rotation and their unique interdisciplinary experiences.

Methods: All 2nd year internal medicine residents during the 2017-2018 year who completed the MCT rotation were invited to participate in focus groups (FGs) to explore resident perspectives on their interdisciplinary learning experiences. FGs were audio recorded, transcribed verbatim, coded and categorized by all three authors, and organized into themes.

Results: Two FGs were conducted with 11 residents. The following themes emerged: (1) Active observation of diverse team experiences and non-acute care locations enhances referrals; (2) Witnessing team consultations from the patient's perspective increased empathy; (3) "Seeing the person" behind their disease: comprehensive understanding of patient's journey; (4) Home visits provide unique patient-centric experiences and engagement with caregivers; and (5) Unexpected Pluses: flexibility of choices; 2 weeks is perfect; learning about the system.

Conclusions: Residency programs should incorporate 2 weeks of multidisciplinary experiential learning in their second year, where residents have protected time off of regular clinical duties to "choose their own MCT adventure", witness the expertise of allied health care professionals, and see the non-medical aspects of their patients' illness journey.

185

Teaching and learning in residency education

Developing competence in discussing goals of care: A process of maturation

C. B. Lee, D. Jayaraman, P. Nugus, L. Snell

McGill University, Montreal, QC

Introduction: Goals of care discussions (GOCD) are important conversations where physicians and patients negotiate care plans oriented towards feasible, patient-centred outcomes. GOCD require advanced medical expertise, knowledge of ethical principles and excellent communication skills. Many physicians remain uncomfortable with GOCD. Stand-alone educational interventions improve aspects of GOCD in the short term, but a longitudinal, competency-based approach may better support mastery of GOCD skills. An understanding of how physicians develop GOCD skills will inform curriculum design for Competency-based Education.

Methods: We employed a qualitative approach, using semi-structured interviews to elicit experiences with learning and performing GOCD. Clinical clerks, residents and attending physicians were recruited from General Internal Medicine and Critical Care at McGill University. Data were interpreted using applied thematic analysis.

Results: We interviewed 34 participants from third year medical students to senior attending physicians: about half were female. Participants fell along a spectrum: on one end, junior trainees tended to conceptualize GOC as equivalent with resuscitation status, viewing GOCD as an administrative task to be performed mechanically and expeditiously. They were less comfortable with uncertainty, and desired a standardized approach. On the other end, attending physicians had a more nuanced understanding of GOCD. Through years of observation and experience, they had developed a more fluid approach allowing them to adapt to different circumstances. All participants felt that continued learning is essential to developing strong GOCD skills.

Conclusions: Competence in GOCD is developed longitudinally. Curricula should be designed in stages to reflect developing competencies.

186

Teaching and learning in residency education

Exploring training gaps in goals of care discussions: Perspectives of medical students and medical residents

M. Attalla, C. Parker

[1]Queen's University, Kingston, ON

Introduction: Establishing goals of care is an important part of a physician's role; it allows patients and their families to understand their illness and encourages shared decision-making that aligns with the patient's values. Despite the importance of this skill, previous work suggests that medical trainees often feel ill prepared for this role, and it has been suggested that a training gap exists with regards to Goals of Care discussions. A better understanding of specific contributors to this knowledge gap and how this skill should be learned will, in turn, better inform the development of educational tools and resources designed to correct it.

Methods: A thematic analysis of discussion points from focus group discussions with internal medicine residents and senior medical students at Queen's University will inform the development of an educational tool to guide learners on how to facilitate goals of care discussions. Ethics approval was obtained through the Health Sciences and Affiliated Hospitals Research Ethics Board. Discussion points include level of understanding of ICU-level care, important values to discuss with patients and their families, the appropriate timing and setting of these discussions, required level of understanding of a patient's prognosis and experiences that improve residents' and students' ability to facilitate goals of care discussions effectively.

Conclusions: A better characterization of the training gaps that currently exist regarding Goals of Care discussions is essential to inform the development of curricular initiatives and educational resources that will better prepare learners for this important skill.

187

Teaching and learning in residency education

A novel multidisciplinary clinical teams rotation improves internal medicine residents' understanding of patient-centered care and interprofessional collaboration

A. Gantayet-Mathur, K. Chan, L. Keenan, M. Kalluri

University of Alberta, Edmonton, AB

Introduction: There is limited formal training in collaborative, patient-centric care amongst Canadian Internal Medicine Resident (IMR) training programs. In 2014, the University of Alberta implemented a 2-week Multidisciplinary Clinical Teams (MCT) rotation for 2nd-year IMRs to promote interprofessional collaboration (IPC) and patient-centered care (PCC). Rotation goals were to understand the patient as a person and participate in patient-centered health assessments and plan.

Objective: To determine if rotation objectives were met and review IMR feedback (2014-2018).

Methods: MCT is an observership of allied health professionals, care teams and patients in self-selected non-acute care settings. We report on course evaluations rated on a 5-point Likert scale and review feedback.

Results: In 2014-2018, 166 and 122 IMRs completed the rotation and evaluations respectively; ambulatory palliative care sessions received highest mean scores (4.2/5) followed by home visits, multidisciplinary clinics and allied health experiences (4.1/5 each) and tele-health clinics (3.5/5). In 2017-2018, 97% (33 residents) agreed that MCT helped understand the patient as a person, 97% said it facilitated patient-centered assessments and plans and 88% agreed the course fulfilled an unmet need. Reported strengths include observing care outside the hospital especially in home settings, novel exposures, increased knowledge of community resources, better understanding of allied health roles, appreciation of patient preferences, discovering barriers to therapy in the community and protected time for reflection.

Conclusions: This novel MCT rotation elicits positive IMR feedback and meets goals of promoting IPC and PCC in medical education. It lays the foundation for similar rotations nationwide.

188

Teaching and learning in residency education

Wearing diabetes technologies as a learning tool to understand patient experiences with managing diabetes

S. Dizon[1], A. Fiorotto[2], A. Arnaout[2]

[1]The Ottawa Hospital, Ottawa, ON; [2]University of Ottawa, Ottawa, ON

Introduction: Wearable diabetes technologies such as continuous subcutaneous insulin infusion (CSII) pumps and continuous glucose monitors (CGM) are increasingly used in diabetes management. Medical residents who care for patients with diabetes do not typically receive targeted hands on education on these technologies and their impact the patients' lives. The aim of this study is to describe residents' experiences after wearing CSII or CGM, and how this influences their perceptions of the patient experience.

Methods: Five Endocrinology & Metabolism (E&M) Residents participated in a Diabetes Devices group workshop followed by one week of wearing the devices. All five residents participated in a semi-structured interview, focusing on benefits and challenges they experienced. Data were analyzed using a thematic analysis amongst team members.

Results: Three common themes emerged from the resident experiences wearing the CSII and CGM: 1) difficulties with daily activities such as sleep, exercise and impact on clothing choices 2) the concept of technology fatigue; and 3) the overall amount of effort required to use these devices properly. Despite the challenges, residents developed a better understanding of how blood glucose levels changed in response to food and activities, and the experience provided them with more confidence in counselling patients.

Conclusions: These findings highlight that hands-on 'learning by doing' fosters a better appreciation for the patient experience, which translates to increased understanding and counselling around using diabetes technologies.

189

Teaching and learning in residency education

Foundation in pathology program for first year residents in pathology: A preliminary experience

A. Radomska, F. Magee

University of Saskatchewan, Saskatoon, SK

Introduction: Transition from Medical College to residency program is challenging for pathology residents that frequently demonstrate a diverse level of knowledge and skills. Therefore, a structural program that standardizes residents' knowledge in basic histology and general pathology was needed. We designed a new resident program called Foundation in Pathology to address resident needs. Here we report a preliminary analysis of the first cohort of residents.

Methods: The program consists of: fifteen histology lectures with the corresponding slide sessions, ten seminars reviewing general pathology knowledge with discussions and images of macroscopic specimen following a classic pathology textbook "Pathologic basis of disease" by Robbins and Cotran, grossing of small and large non-oncologic and oncologic specimen, observation of frozen sections and participation in post mortem examination. Residents were evaluated by multiple choice questions (MCQ) test, direct and indirect observation, oral and written slide description, the entrance and exit short questions and answers (Q&A), and slide exam.

Results: Ten first year pathology residents have participated in this program to date. The Q&A results showed a significant improvement in resident score (63±1 v/s 85±5 mean±SD; p=0.0094, r=0.8660, n=3; exit v/s entrance). Preceptor evaluation score by residents was 4.5±0.3 mean±SD, n=12 (1 lowest 5 highest). CANMED evaluation was 4.25 (n=12).

Conclusions: Preliminary data analysis indicates that Foundation in Pathology program initiated in July 2016 for first year residents at the Department of Pathology and Laboratory Medicine University of Saskatchewan is an effective and well-accepted program for first year pathology residents.

190

Teaching and learning in residency education

Training of oncologists: Results of a global survey

D. Jalan[1], F. Rubagumya[2], W. Hopman[1], V. Vanderpuye[3], G. Lopes[4], B. Seruga[5], C. Booth[1], S. Berry[6], N. Hammad[1]

[1]Queen's University, Kingston, ON; [2]Rwanda Military Hospital, Kigali, Rwanda; [3]Korle Bu Teaching Hospital, Accra, Ghana; [4]University of Miami, Miami, FL, United States; [5]Institut of Oncology Ljubljana, Ljubljana, Slovenia; [6]University of Toronto, Toronto, ON

Introduction: While several studies have highlighted the global shortages of oncologists and their workload, few have studied the characteristics of current oncology training. We sought to gain an understanding of oncologists' training and preparedness for practice.

Methods: An online survey was distributed through a snowball method via a pre-existing network of contacts to cancer care providing physicians in 57 countries. Countries were classified into low- or lower-middle-income countries (LMICs), upper-middle-income countries (UMICs), and high-income countries (HICs) based on World Bank criteria.

Results: 273 physicians who trained in 57 different countries responded to the survey; 33% (90/273), 32% (87/273), and 35% (96/273) in LMICs, UMICs and HICs respectively. 60% of respondents were practicing physicians and 40% were in training. A higher proportion of respondents from LMICs (37%; 27/73) self-fund their core oncology training compared to UMICs (13%; 10/77) and HICs (11%; 10/89; P<0.001). Respondents from HICs were more likely to complete an accepted abstract, poster and publication from their research activities compared to respondents from UMICs and LMICs. Irrespective of country grouping, mean scores on a 5-point Likert scale were low for professional tasks like supervision and mentoring of trainees, leadership and effective management of an oncology practice, and understanding of healthcare systems.

Conclusions: Investment in training by the public sector would be vital to decreasing the prevalence of self-funding in LMICs. Enhancement of competencies in research dissemination in LMICs require attention. Globally, instruction on cancer care systems and leadership need to be incorporated in training curricula.

191

Teaching and learning in residency education

To lecture or not to lecture, that is the question! Modern medical and nursing student perceptions regarding lectures and lecture attendance at the University of Ottawa

S. El Bialy, M. Jay, Y. Hebert, J. Leddy, C. Ramnanan, D. Karol, N. Manhas

University of Ottawa, Ottawa, ON

Introduction: While the lecture has been a core content delivery method in healthcare profession education, lecture attendance has decreased. Our objective was to define medical and nursing student perceptions regarding lectures and lecture attendance.

Methods: Second year medical students (in Spring 2018) and second year nursing students (in Winter 2019) were requested to answer a 10-item survey (Likert, multiple choice, and short answer questions).

Results: 110 medical students (response rate 35%) and 95 nursing students (response rate 44.1%) participated in the survey. The top reasons why medical and nursing students attended lectures respectively included: “lectures were mandatory” (81.8% and 68,8%), “socializing with peers” (68.2% and 30.1%), and “professor emphasis on important learning objectives” (67.1% and 90.3%). The top reasons students did not attend lectures included the perception that the lecture format was not effective (63.5% and 67.7%), preference for using lecture recordings (63.3% and 18.3%), and that lecture content was perceived to be of low relevance to the exam (37.5% and 30.1%), and the lectures were scheduled early in the morning (36.5% and 21.5%). Overall, 64.6% of medical students and 63.1% of nursing students agree that traditional lectures are an effective way of learning.

Conclusions: The majority of medical and nursing students perceive that attending lectures still has value in terms of their learning although medical students also see value in learning from recorded lectures. Emphasis on exam-relevant information and student engagement in class are perceived by both medical and nursing students to be methods of enhancing lecture attendance.

192

Teaching and learning in residency education

Remediating the remediation program: A program evaluation of residents in academic difficulty

M. Nayer, D. Martin, A. Fung, M. Hynes

University of Toronto, Toronto, ON

Introduction: Currently, there is little feedback on how remediation programs work in Postgraduate Medical Education (PGME). The purpose of this initiative was to evaluate the functioning of a well-established PGME remediation program.

Methods: Residents, Program Directors (PDs), non-evaluative mentors, and coaches that participated in a PGME remediation program over 2 years were asked to complete an online confidential survey that included an opportunity for reflective comments.

Results: Results indicate that PDs perform many roles during the remediation, including communicating with site leads, reviewing evaluation forms, and meeting with residents. PDs find the PGME remediation template for developing the remediation plan to be helpful. Residents and PDs reported contacting non-evaluative mentors during remediation. It was determined even though the role of this mentor is to be "non-evaluative" in some cases PDs requested evaluations of the resident. PGME coaches reported wanting more contact with the PDs to further refine learning goals and to ensure skills were translating back into practice. Residents find the program tutoring and PGME coaching sessions to be very helpful. Residents reported that they continued to apply study skills and time management skills after remediation.

Conclusions: Early results suggest that the various participants are satisfied with the management of the remediation process for residents in difficulty. Resident perspectives change over time and data suggests that six months out from remediation residents have a more positive perspective on the benefit of the process. Key factors for a successful remediation for all participants include open communication, transparency, collaboration, mentorship, and teamwork.

193

Teaching and learning in residency education

Procedural competency in paediatrics: Results of a national needs assessment

R. Gupta[1], J. White[2], R. Chanchlani[1], H. Writer[3], A. Rowan-Legg[4]

[1]McMaster University, Hamilton, ON; [2]Sick Kids Hospital, Mississauga, ON; [3]University of Ottawa, Ottawa, ON; [4]Children's Hospital of Eastern Ontario, Ottawa, ON

Introduction: Competency-based medical education (CBME) trains and assesses residents on activities entrustable to their profession. These entrustable professional activities should ideally be based on actual practice information. The current training goals for procedures in general paediatrics however, are opinion-based with limited data and are perceived to need updating. We aimed to identify those procedures essential to the profession, to better guide training and educational resource allocation.

Methods: The Canadian Paediatric Surveillance Program, administered by the Canadian Paediatric Society and the Public Health Agency of Canada routinely surveys over 2,500 practicing Canadian paediatricians. Paediatricians were surveyed in 2018 regarding procedures they considered essential to their practice. Survey data and demographic information were combined and summarized descriptively.

Results: Response rate was 33.1% (934/2,822). Of the respondents, 417 (63.1%) practiced general paediatrics involving performing procedures. All provinces and territories were represented in the responses. Respondents varied substantially in years spent in independent practice and practice style (community, urban, office). Among those whom performed procedures, the procedures most frequently rated as essential included: infant bag-valve-mask (338/377, 89.7%); chest compressions (324/369, 87.8%); and lumbar puncture (335/367, 91.3%). Procedures most frequently rated as not essential were insertion of peripherally inserted central catheters (339/365, 92.9%), central venous (jugular/femoral) lines (330/367, 89.9%); and peripheral arterial lines (313/367, 85.2%).

Conclusions: This robust needs assessment provides valuable insights into the contemporary procedural skill requirements of general paediatricians. The results should guide the development of entrustable professional activities, the CBME curriculum, and educational resource allocation in paediatrics.

194

Teaching and learning in residency education

The role of ambiguity, uncertainty, and complexity in clinical reasoning: A scoping study

M. Young[1], A. Thoas[1], S. Lubarsky[1], V. Dory[1], N. Torabi[2], F. Bhanji[3], S. Durning[4]

[1]McGill University, Montréal, QC; [3]University Health Network, Toronto, ON; [4]Royal College of Physicians and Surgeons of Canada, Ottawa, ON; [4]Uniformed Services University, Bethesda, MD, United States

Introduction: Medical practice is characterized as fraught with uncertainty, ambiguity, or complexity. Recognizing and responding to the uncertainty, ambiguity, and complexity of practice is an enabling competency of a Medical Expert (CanMEDS 2015). Despite attention, these concepts remain largely underspecified. Documenting the use and meaning of ambiguity, uncertainty, and complexity is warranted in order to support the development of teaching and assessment approaches tfor clinical reasoning.

Methods: With the Royal College as a knowledge user, we conducted a scoping review to map the literature on ambiguity, uncertainty, and complexity in clinical reasoning. A search was developed, peer reviewed, and executed in five databases. Two coders screened abstracts and a third adjudicated disagreements. We conducted quantitative and thematic analyses of the data extracted.

Results: 292 of the 3310 abstracts screened were included in the review. Of key terms, 'complex(ity)' was the most frequently used (245; 84%), followed by 'uncertain(ty)' (195; 67%), and ambiguous/ambiguity (66; 23%). Only 29 papers explicitly defined the terms. Complexity referred to patients, tasks, tools, and 'the heathcare system'. Uncertainty was used in reference to 'input' (information), output (diagnosis) or outcome (prognosis). Ambiguity referred to information, tasks, and relationships/roles.

Conclusions: The concepts of ambiguity, uncertainty, and complexity are used in educational and policy statements, little consensus, and few explicit definitions of these concepts were identified in the literature. Findings provide an overview of existing definitions and suggest more work is needed to better understand and ultimately, teach and assess clinical reasoning in complex/uncertain/ambiguous problems.

195

Teaching and learning in residency education

Knowledge and confidence in performing the pudendal block: An assessment of Newfoundland OBGYN residents and physicians

J. J. Liu, S. Murphy, D. Murphy

Memorial University of Newfoundland, St. John's, NL

Introduction: The objectives of this study are to assess the knowledge of both OBGYN physicians and residents in Newfoundland on the utilization and administration of the pudendal block. Moreover, the participants' attitude and confidence for this procedure will be explored.

Methods: A prospective audit of residents and physicians of Newfoundland was conducted during April and May of 2018. The physicians and residents were invited to participate in a paper-based survey. The data was analyzed with SAS software.

Results: The results of the study showed no statistical significance between staff and residents in their knowledge of the labor pudendal block technique. However, 88% of residents believed that this topic was not covered well in the residency curriculum. Moreover, 94% of residents felt that they were not adequately prepared to provide the pudendal block as an option for labor analgesia in their practice.

Conclusions: While the textbook knowledge between staff and residents is similar, the practical training of pudendal block administration is lacking in residents. There is a decline in the provision of the pudendal block in Newfoundland which may partly be due to the staff physicians' perception of its effectiveness. As a result, residents are not receiving adequate exposure to this in their training. A final consequence is the decrease in the confidence of trainees to perform this procedure in their future practices. From this study, it appears that a curriculum change is necessary.

196

Teaching and learning in residency education

Multi-specialty rectal cancer teaching symposium for post-graduate trainees: Needs assessment and pilot session of an integrated teaching approach

J. Van Koughnett

Western University, London, ON

Introduction: Rectal cancer care is complex and requires a multi-disciplinary approach. Specialists interact regularly through multi-disciplinary treatment (MDT) conferences, but post-graduate trainees frequently receive only specialty-specific teaching. The objectives were to assess the educational needs of trainees who partake in rectal cancer management and assess the feasibility of a multi-specialty teaching symposium.

Methods: A needs assessment survey was distributed to trainees in programs receiving education on rectal cancer. A multi-specialty symposium was designed to address knowledge deficiencies and present all aspects of rectal cancer management (such as staging, surgeries, interpretation of pathology, etc.) and mock MDT cases. Evaluations assessed the impact and effectiveness of this teaching approach and descriptive statistics were performed.

Results: Trainees from all disciplines responded to the pre-session needs assessment, with 71% being postgraduate year 3 or higher. The majority (57.9%) felt they received adequate teaching on rectal cancer; however, many rated their knowledge as only adequate (39.5%) or poor/very poor (34.2%). Areas of knowledge weakness were identified. About 50 residents attended the symposium and evaluations were completed by over 50% of attendees. Trainees were very satisfied with the symposium, with content rated at 4.69/5 (mean) and overall relevance to training 4.65/5 (mean). Every respondent stated they wished to have similar educational sessions in the future.

Conclusions: An inter-specialty approach to rectal cancer teaching was feasible to fulfill educational needs of trainees from 6 specialties, and was highly valued by the trainees. This may be an effective method to teaching other diseases with a complex knowledge set.

197

Teaching and learning in residency education

Novel curriculum in pediatric developmental screening: Which interventions were most effective?

C. Dosman, A. Davila Cervantes, Q. Guo, C. Bell, S. Eliason, D. Andrews, C. Hodgson

University of Alberta, Edmonton, AB

Introduction: Screening is a novel teaching method for child development Objective of Training. General Pediatric (GenPeds) residents do not receive adequate training in development despite correlated parent concerns frequency in practice. In absence of "how to" recommendations, a Developmental Pediatric (DevPeds) curriculum was developed, based on resident feedback. We evaluated the relative efficacy of methods and tools, with the objective of retaining interventions most valued by residents.

Methods: First (R1), 2nd (R2), and 3rd (R3) year GenPeds residents participated in the evaluation (2016-18, n=49/55). Interventions included 1) high volume practice during R1 and R3 Screening Day (SD) (DevPeds rotations); 2) screening own patients (GenPeds clinics); 3) case-based teaching sessions; 4) five Short Answer Question formative exams; 5) pocket guide (PG) (milestones, referrals). Survey assessed outcome variables (effectiveness on knowledge/proficiency; impact on perspective), measured using 1-4 Likert scale. Through single-group, pretest-posttest design, Paired T-test compared attitudes at Program start and each end-year.

Results: Residents rated SD (m=3.67, sd=.52) and PG (m=3.67, sd=.52) as the most effective interventions. Plan to screen in future practice increased in R1 (2.57 to 3.57, sd=1.04, p=.00) and R2 (2.50 to 3.60, sd=.88, p=.003), with no difference in R3 (2.80 to 3.60, sd=.84, p=.099).

Conclusions: Resident feedback most endorsed Screening Days and Pocket Guide. Decline at R3 in future plan reflected screening lack in GenPeds clinics, implying attitude impact by teaching in Junior years and by clinical experience in Senior year. Response rate and sample size are limitations. Examining graduates' attitudes may inform curriculum value.

198

Teaching and learning in residency education

Perceptions of pediatric residents about the transition from junior to senior resident: A needs assessment survey

E. Boschee, J. Walton, J. Foulds, K. Forbes

University of Alberta, Edmonton, AB

Introduction: At present, there is a paucity of literature that explores perceptions of residents about transitions throughout residency. We conducted a needs assessment of pediatric residents at different stages in their training at our local institution to explore their perceptions about the junior to senior transition. We hypothesized that residents would report significant anxiety associated with transitioning.

Methods: An anonymous needs assessment survey was conducted, of junior (PGY-1 and PGY-2, pre-transition, n=23) and senior (PGY-3 and PGY4, n=19) pediatric residents at the University of Alberta. Residents were asked to report their overall anxiety associated with this transition period, using a 5-point Likert scale, and to specify anxiety-provoking aspects. Residents were also asked to identify elements they perceive to be important to a successful transition. Thematic analysis was used to identify common themes for qualitative data.

Results: Thirteen junior and 11 senior residents completed the survey for response rates of 56.5% and 57.9%, respectively. A majority of respondents reported high or very high level of overall anxiety about this transition (53.8% of junior and 63.6% of senior residents). Common sources of anxiety reported among both cohorts included time management, managing emergent issues, and fear of making a mistake.

Conclusions: The transition from junior to senior resident is a stressful milestone in pediatric residency training. Specific attention should be paid to the development of resources to support and address specific anxieties about the transition process.

200

Teaching and learning in residency education

Resident perspectives on training in developmental disabilities in Canadian psychiatry residency programs

S. O'Flanagan

Western University, London, ON

Introduction: Research indicates that rates of psychiatric disorders are elevated in people with Developmental Disabilities (DD). Research also suggests that teaching devoted to Developmental Disabilities in psychiatry residency programs is limited. Little research has examined training in DD from the perspective of psychiatry residents. The purpose of this study was to determine how senior residents perceive their educational experience specific to DD.

Methods: A survey was distributed to PGY-5 residents at an exam review course in the final six months of their training.

Results: Of 451 course attendees, 158 completed the survey. 95% of respondents reported receiving lectures on DD during their training, while 36% reported that their program required them to complete a clinical rotation in DD. Among those who were required to complete a rotation in DD, the length of the rotation, the stage in the lifespan, and the year in which the rotation was completed varied significantly. 90% of respondents reported that their level of comfort in assessing and treating psychiatric disorders in people with DD was very low.

Conclusions: Despite a large body of literature indicating an increased rate of psychiatric disorders in people with DD, senior residents reported significantly different, and often minimal, training experiences in DD. The low level of confidence in the assessment and treatment of people with DD likely has an impact on the quality of care for people with DD.

201

Teaching and learning in residency education

An assessment of the educational needs of Canadian obstetrics and gynaecology residents regarding opioid agonist use in pregnancy

R. C. McBriarty, C. Woolcott, G. Williams, C. Shearer, V. M. Allen

[1]Dalhousie University, Halifax, NS

Introduction: Opioid agonist treatment (OAT) is the standard of care in pregnancy for mothers with opioid dependency, yet educational resources among residency programs in Canada vary.
Objectives: To describe the knowledge, experience, attitudes and barriers to care with respect to OAT in pregnancy among residents and faculty in Canadian Obstetrics and Gynaecology training programs, in order to informeducational curricula development.

Methods: Online surveys were distributed to Program Directors (PDs) and via Program Administrators to residents. Perceived and required knowledge, importance of education, and education received were assessed with 5-point Likert scales that ranged from '1-None' to '5-Very Much'. Descriptive statistics were generated and associations with training level (PGY year 1-5), region (Eastern, Central and Western) and clinical experience providing OAT in pregnancy were tested using ANOVA.

Results: 5 PDs (26.3%) and 77 residents (16.6%) responded to the survey. Discrepancies were noted between residents' perceived (x=2.8; SD 0.7) and required (x=3.8; SD 0.6) knowledge, and between importance of education on this topic (x=4.2; SD 0.6) and education received (x=2.2; SD 0.6). Perceived knowledge and education reported were associated with training level and experience ($p<0.05$). Respondents identified a desire for more formal teaching, ideally through didactic sessions; specifically, information on harm reduction strategies, medication initiation and dosing, and management of acute withdrawal.

Conclusions: This national survey suggests a deficiency in resident knowledge in treating pregnant women on OAT, and a desire for more education in this area. The results of our survey will inform the development of a multidisciplinary educational curriculum.

202

The unique educational climate of the operating theatre

Surgical warm up - fact or fiction?

R. Mir[1], R. Jayasuriya[2], R. Wilkie[3], M. Mon-Williams[3], F. Mushtaq[3], J. Tomlinson[4], P. Lodge[1]

[1]Leeds Teaching Hospitals, Leeds, United Kingdom; [2]Sheffield Teaching Hospitals, Sheffield, United Kingdom; [3]Leeds University, Leeds, United Kingdom; [4]Health Education England, Leeds, United Kingdom

Introduction: Recent evidence suggests that "warming up" before an operation could improve intra-operative performance. To date there has been no formal exploration of current surgical practices prior to performing an operation, and attitudes towards warming up are unclear. This study aims to explore current warm up practices amongst surgeons of all levels.

Methods: An electronic survey was created and distributed via training programmes, speciality associations and social media. Questions concerned seniority, operative experience, use of warm-up strategies and perceptions of warm-up. Free text comments were grouped into themes for analysis.

Results: There were 284 responses from multiple surgical specialties. Trainee warm up strategies included simulation courses, laparoscopic trainers and web based educational material encompassing both motor and cognitive warm up strategies. Consultant were more likely to use cognitive wam up strategies including mental rehearsal, reading technical notes, and discussing case specific details with colleagues to prepare for surgery. 83% of junior trainees frequently discuss the steps of a procedure with a colleague compared with 45% of consultants. With increasing seniority warming up extended to anticipating difficulties and discussing strategies with the theatre team in preparation for periods of high cognitive load. The work environment was identified as the biggest barrier to adequate preoperative mental preparation by respondents of all levels.

Conclusions: This is the first study to assess surgical warm up practices. Warm up strategies differ with experience and case complexity. There is a need to develop formalised evidence-based approaches for warm-up that overcome identified barriers to implementation.

203

The unique educational climate of the operating theatre

Resource optimization in proficiency-based suturing skills training

M. Lemke, H. Lia, A. Gabinet-Equihua, G. Sheahan, A. Winthrop, S. Mann, G. Fichtinger, B. Zevin

Queen's University, Kingston, ON

Introduction: Suturing is a fundamental skill in medical education. It can be taught by faculty-led, peer-led, and holography augmented methods; however, the most educationally effective and cost-efficient method is yet to be determined. This study sought to compare proficiency based suturing curricula based on educational outcomes and resource utilization.

Methods: We conducted a randomized controlled trial comparing faculty-led, peer-led, and holography augmented proficiency-based suturing training to medical students. Holography augmented training provided holographic, voice-controlled instructional material. Technical skill was assessed using hand motion analysis every ten sutures and used to construct learning curves. Proficiency was defined by one standard deviation within average faculty surgeon performance. Intervention arms were compared using one-way ANOVA of the number of sutures placed, full-length sutures used, time to proficiency, incremental costs incurred. Participant preferences were surveyed.

Results: Forty-four students were randomized; all achieved proficiency. At proficiency, there were no differences in educational outcomes between groups. The computer-augmented method was costlier than faculty-led and peer tutor-led ($247.00 ±$12.05, $p<0.001$) due to the high cost of the equipment. Faculty-led teaching was the most preferred method (78.0%), while computer-augmented was the least preferred (0%). 90.6% of students reported high confidence in performing simple interrupted sutures, which did not differ between intervention arms ($p=0.409$). 93.8% of students felt the program should be offered in the future.

Conclusions: Proficiency-based teaching of suturing using faculty-led and peer tutor-led instructional methods were superior to holography-augmented with respect to costs and participants' preferences despite being educationally equivalent.

204

The unique educational climate of the operating theatre

Factors influencing resident teaching evaluations: The relationship between resident interest in teaching, career plan, training level, and their performance in teaching junior learners

G. Pang, J. Van Koughnett

Western University, London, ON

Introduction: Residents play an important role in the education of medical students. Numerous studies have focused on teaching programs and evaluation of resident teaching. Few studies have addressed motivational factors and their influences on teaching performance.

Objective: To examine factors that may impact the quality of teaching provided by surgical residents, as assessed by medical students.

Methods: Surgical residents at a Canadian university were invited to complete a survey assessing factors that may influence their interest and performance in teaching. Teaching performance was evaluated by third year medical students using a modified Copeland's Clinical Teaching Effective Instrument (CTEI). Demographic and survey data were described. Teaching performances between groups were compared for statistical significance using Mann-Whitney U test. Open-ended responses were analyzed for themes.

Results: Eighty-eight of 137 (64%) surgical residents responded to the survey. 134 residents (98%) were evaluated by 136 of 141 (96%) medical students, for a total of 1089 teaching evaluations (mean 8/resident). There were no significant differences in resident performance as measured by modified CTEI between academic vs non-academic career interest ($p=0.566$), enjoyment vs non-enjoyment of teaching ($p=0.220$), clinical duty interference vs non-interference ($p=0.808$), high vs low self-rated performance ($p=0.889$), and junior vs senior level of training ($p=0.492$). However, residents interested in teaching were evaluated significantly better than those who reported low interest ($p=0.046$).

Conclusions: Resident teaching interest may play an important role in resident teaching performance, as assessed by medical students. Resident teaching curricula should include strategies to cultivate and nurture resident interest in teaching.

Author Index

Keyword Index