

## *Abstracts*

### *R&D Presentations*

<b>R&amp;D-0001</b>	<p><b>Role Modeling and Professional Competence in Clinical Education: Implications for faculty development - An Example of Innovative Program for Clinical Teachers</b></p> <p><i>Martine Chamberland, RenéHivon, Université de Sherbrooke</i></p>
---------------------	---

The objective of this presentation is to describe a large-scale faculty development program which emphasizes role modeling and professional competence in clinical education and report evaluation data. Role modeling has been identified as a critical teaching method in clinical education. Recent studies have identified characteristics of excellent role models. The objective of our program is to train clinical teachers to embrace a clinical teaching model which integrates all dimensions of professional competence and promotes the explicit and optimal exercising of role modeling and clinical supervision. The program currently includes three one-day workshops over a 3-year period. Three questionnaires are used for evaluation at the end of the workshops and 6 months later. 232 clinical teachers have participated to workshop #1. 90% of the responders indicated high degree of satisfaction and confirmed relevance of concepts addressed. Six months later, 50% reported having increased the frequency of use of specific teaching interventions linked to efficient role modeling and clinical reasoning, communication or ethics, key components of professional competence. Evaluation data for workshops#2 and #3 are currently being collected and analyzed.

<b>R&amp;D-0002</b>	<p><b>The Validity of Health-care Academic Admission Interviews: A Meta-analysis</b></p> <p><i>James Goho, Ashley Blackman, Red River College</i></p>
---------------------	---

Admission into medical and other health-care professional schools is very competitive and selecting candidates with the best prospects for success is critical. This research examined the validity of selection interviews in predicting success. Two separate meta-analyses were conducted. One examined the relationship between performance in an interview situation and future academic accomplishment using a sample of 19 primary studies. The second meta-analysis examined the relationship between interviews and clinical performance using a sample of 10 studies. The mean sample-size-effect size for studies examining the predictive power of interviews for academic success was 0.06 (95% confidence intervals: 0.03 to 0.08), signifying a very small effect. The sample of studies was homogeneous using a fixed effect model. The sample of studies for predicting clinical success had a mean effect size of 0.17 (95% confidence intervals: 0.11 to 0.22), indicating modest predictive power. Using a random-effects model, this sample of studies was homogeneous.

<b>R&amp;D-0003</b>	<p><b>Educating Educators About Collaboration and Interprofessional Education: Key Preliminary Findings</b></p> <p><i>Ivy Oandasan, Keegan Barker, Debora Kwan, Melyn Leszcz, Azadeh Moaveni, Denyse Richardson, Anja Robb, Lynne Sinclair, Ivan Silver, University of Toronto</i></p>
---------------------	--

Context Collaboration is an important skill in today's interprofessional practice. It is questioned

whether we, as healthcare educators can confidently teach future health professionals this important domain when so much is yet to be researched and learned. A pilot faculty development curriculum on the Collaborator role was developed in order to address this gap.

**Objective** The goal of the curriculum (Teaching Health Professionals to be Collaborators for Patient Centred Care) is to develop a teaching method to train faculty who will become educational leaders in their own health care settings on how to teach the “ Role of Collaborator”. The goal of the research project based on the curriculum is to evaluate learners’ experiences in the program.

**Design** Mixed methods: qualitative and quantitative measures.

**Setting** Faculty development program.

**Participants** Twelve educational and administrative leaders nominated by their department heads from the professions of: specialty medicine, family medicine, social work, nursing, nurse practitioner, physical therapy, speech-language pathology, occupational therapy, nutrition.

**Intervention** Five day (40 hour) faculty development program that utilizes didactic/experiential learning, video vignettes, case discussion, standardized learners to advance participants’ understanding and ability to teach others about collaboration.

**Outcome Measures** Interviews to gain an understanding of their experiences and their thoughts of how the faculty development program could be improved. Reflective diaries of learners were analyzed using qualitative grounded theory methodology.

**Results** From the results of the analysis it was found that a Faculty Development course was able to prepare faculty on how to teach Interprofessional collaboration. From the findings of the learners’ experiences in gaining IPE theory and an understanding of group dynamics, the most powerful teaching/learning tool found seemed to be the parallel process of reflecting on faculty facilitator’ group process actions, reflecting upon the participants’ own individual/group processes and sharing how what was learned could impact how they would teach and practice collaboration.

**Conclusion:** What seemed critical to the faculty participants was the acquisition of learning how to “reflect on action” in order to “reflect in action” while facilitating interprofessional groups. This meta-skill is important when trying to attend to group dynamics and in teaching issues that might impact interprofessional collaboration. This has great implications for the type of faculty development that should be provided to teach IPE.

<b>R&amp;D-0004</b>	<b>Evaluating Educational Technologies in a Distributed Medical Education Program: Evaluation Findings and Reflections</b> <i>Caroline Murphy, Angela Towle, Chris Lovato, University of British Columbia; Dan Zollmann, Ambit Consulting</i>
---------------------	--

In fall 2004, the inaugural class entered the expanded undergraduate medical education program at the University of British Columbia; a distributed program in partnership with the University of Victoria and the University of Northern British Columbia. Because much of the first two years of the program are supported by information and communications technology (i.e. videoconferencing, web-based learning), a formative evaluation of these learning tools was implemented to ensure quality of learning experiences and comparability of the program. Specific objectives were to 1) identify effectively and successfully implemented components, and 2) identify challenges and potential solutions associated with use of technology for learning. Feedback was elicited through a series of student focus groups and faculty surveys. Findings

indicate implementation of the technology was successful, and resulted in a positive impact on student learning and study behaviours. This presentation describes the evaluation findings and examines the methodological challenges associated with the evaluation.

<b>R&amp;D-0005</b>	<b>Graduate Training in Medical Education: What Capacities Must Graduate Programs Provide?</b> <i>Richard Cohen, Dan Pratt, John Collins, Gordon Page, University of British Columbia</i>
---------------------	--

This study reports the combined thinking of forty five leaders in US and Canadian medical education who were tasked in three geographically separate workshops to summarize the essential capacities and competencies that graduate training in medical education must provide – both for effectively reviewing existing programs and for planning new ones.

We summarized their thinking from a framework that distinguishes among individual, institutional, societal and global perspectives. Their deliberations reaffirmed the importance of (1) educational training for physicians aspiring to leadership positions in medical education (2) training in educational research (3) the ability to manage change (4) promoting inter-institutional educational collaboration (5) the importance of training tailored to meet the requirements of individual physicians. Conspicuously absent was any significant recognition or discussion of societal or global implications of such program focus, delivery, or planning.

<b>R&amp;D-0006</b>	<b>An Evaluation Study of Online Continuing Medical Education (CME)</b> <i>Vernon Curran, Lisa Fleet, Fran Kirby, Diana Deacon, Memorial University of Newfoundland; Jocelyn Lockyer, University of Calgary; Joan Sargeant, Dalhousie University</i>
---------------------	---

Online Continuing Medical Education (CME) has been identified as a flexible and convenient means for rural and urban physicians to meet their CME needs. Memorial University of Newfoundland led a pan-Canadian consortium of 12 university CME offices in the development, delivery and evaluation of MDcme.ca, an online CME Web portal. The program evaluation objectives were to assess participant satisfaction, learning outcomes, self-reported performance change, and effect of consortium strategy on pan-Canadian online CME development and delivery.

Methods: Included pre/post-tests; course evaluation survey; practice change survey; and interviews.

Results: 40 course offerings. Participants were generally satisfied. There was a significant increase in pre to post knowledge and confidence, and in self-reported practice change. Interviewed 9 facilitators; encountered some challenges, but generally reported a positive experience.

This study was supported by the Atlantic Canada Opportunities Agency (ACOA), Atlantic Innovation Fund.

<b>R&amp;D-0007</b>	<b>Medical Education Research: Current Debates, Future Directions</b> <i>Mathieu Albert, Brian Hodges, Glenn Regehr, Lorelei Lingard, University of Toronto</i>
---------------------	--

This study explores the current debate about the nature of medical education research. to better understand the structural and cultural tensions. Twenty-three well-established researchers in MER, including journal editors and directors of research units, were sampled to represent major viewpoints on MER. Interviews focused on their conception of “legitimate” science and methodologies. A commonly perceived challenge facing MER is the lack of coherent progress resulting from the predominance of projects that are small-scale rather than multi-institutional, and opportunistic rather than based on a sound knowledge of the literature. Structural constraints identified included insufficient research funding, service obligations, and a lack of venues to report theory-based research. Cultural constraints included the field’s attempt to integrate social science epistemology into a biomedical science culture. Dominant discourses link MER’s development to its recognition as a social science with its own specificity.

<b>R&amp;D-0008</b>	<b>P-MEX: A Tool to Evaluate Professional Behaviour</b> <i>Richard, Cruess, McGill University; Jodi Herold McIlroy, University of Toronto; Sylvia Cruess, Yvonne Steinert, McGill University; Shiphra Ginsburg, University of Toronto</i>
---------------------	--

We report the development and testing of the Professionalism Mini-Evaluation Exercise (P-MEX), adapting the MiniCEX format to the professionalism domain. 24 behaviors reflecting professional characteristics were identified through literature, expert opinion, and group consensus. After informed consent, using a 4 point rating scale, 211 forms were completed on 74 third and fourth year students by 47 evaluators (34 faculty, 13 residents). The mean number of forms per student was 2.85 (range 1-9). Four items had over 40% marked N/A, indicating low utility in this context. At least 3% of four other items had ratings of Below Expectations, indicating greater sensitivity to minor breaches of professionalism. Exploratory Factor Analysis revealed 4 factors, well aligned with published dimensions of professionalism, explaining 85% of the total variance. Scale Reliability (alpha) was 0.98. Semi-structured interviews indicated the form was easy to use, promoted feedback, made faculty think about their own behavior, but was too long.

<b>R&amp;D-0009</b>	<b>Examining the Problem with Experience: Does Practice Make Physicians More Susceptible to Premature Closure?</b> <i>Kevin Eva, John Cunningham, McMaster University</i>
---------------------	--

A recent literature review resulted in the conclusion that risk of premature closure (overweighting one’s first impressions) in diagnostic tasks increases with greater years of experience. To eliminate potentially confounding variables, the current study utilized an information order procedure to experimentally test this conclusion. Physician participants were shown case histories and asked to judge the probability of a pair of diagnoses for each case. The order in which features were presented was manipulated, those consistent with one diagnosis being presented before or after those consistent with another diagnosis. Two groups of participants were recruited: one over age 60, one under age 50.

In general, primacy effects were observed – the probability assigned to a diagnosis tended to be greater when the features consistent with that diagnosis preceded those consistent with the alternative. More experienced participants revealed a greater primacy effect than their less experienced counterparts suggesting that physicians with greater experience are more likely to rely on their first impressions when diagnosing clinical problems. Implications for continuing education programs/maintenance of competence will be discussed.

<b>R&amp;D-0010</b>	<b>Impact of a Distributed Medical Education Program on the Community</b> <i>Chris Lovato, Joanna Bates, David Snadden, Tanis Mihalynuk, University of British Columbia; Neil Hanlon, University of Northern British Columbia</i>
---------------------	--

The purpose of this study was to identify ways in which the introduction of a distributed medical education program, in a northern region, impacted the community. As a retrospective case study of the UBC Northern Medical Program at UNBC in Prince George, BC, the study included interviews with nine key stakeholders and a review of institutional documents. The study framework identified different forms of impact arising from within six spheres of the community: business, economy, media, health, local politics, and education. Each was differentially useful in identifying the nature of the program's impact. The overall impact of the medical school was perceived as extremely positive. Specifically, stakeholders observed an increase in local physician recruitment and retention, increased community morale, and the ability of businesses to promote their community. A positive impact on the community's economy is anticipated over time. Negative impacts were more limited in number and perceived to be short-term in their effect.

<b>R&amp;D-0011</b>	<b>Reflecting Upon Assessment Feedback: To Change or Not to Change</b> <i>Joan Sargeant, Karen Mann, Douglas Sinclair, Dalhousie University; Cees van der Vleuten, Job Metsemakers, University of Maastricht</i>
---------------------	---

Background, purpose: More consideration is now being given to the consequences or educational impact of assessment. Research shows that providing negative assessment feedback is sometimes problematic as improvement does not always result. This paper explores physicians' reflective processes as they consider their assessments and decisions about whether or not to use them.

Methods: We conducted interviews with a purposeful sample of 28 physicians who had participated in multi-source feedback formative assessment.

Results: Participants receiving feedback consistent with self-perceptions accepted it. But almost half received feedback perceived as inconsistent and negative. Many of these responded emotionally with distress and surprise. As they thoughtfully reflected upon their negative feedback, emotional responses appeared linked to professional and personal expectations and perceptions of fairness. These appeared to influence subsequent use of the feedback.

Conclusions: Receiving negative feedback can evoke emotional responses. A reflective process seemed important in processing this feedback

<b>R&amp;D-0012</b>	<b>Quantification of Movement Processes During a Vascular Anastomosis</b> <i>Ryan Brydges, University of Toronto; Ravi Sidhu, University of British Columbia; Jason Park, Adam Dubrowski, University of Toronto</i>
---------------------	--

Movement processes for two commonly used techniques of suturing within a single surgical task were quantified.

Junior and senior surgery residents were tested on a live model one-week after a guided practice session. Two phases for each of 2 suturing techniques (running and parachute suturing) were identified. Performance efficiency (observed and normalized) was recorded separately during each phase using hand motion detectors.

Only the junior residents' observed performance improved from first to second phases ( $p < .05$ ) and degraded when switching from running to parachuting techniques ( $p < .001$ ). Senior residents were more efficient on all segments ( $p < .05$ ). Normalization revealed similar group effects ( $p < .05$ ).

Only junior residents were affected by changes in suturing technique within the same task. It appears different techniques of suturing are executed using the same motor program though specific program parameters are adjusted to suit each skill, supporting transfer of training.

<b>R&amp;D-0013</b>	<b>TOFFEE – A Unique Faculty Development Program Based on Encounter Card Evaluation of Teaching</b> <i>Lawrence Oppenheimer, Erin Keely, Jennifer Clinch, Meridith Marks, University of Ottawa</i>
---------------------	---

Evaluation of clinical teaching is important yet rarely performed. This study describes medical students' perceptions of the quality of clinical teaching using encounter cards and an approach to enhance clinical teaching. OBGYN clinical clerks voluntarily and anonymously completed evaluation cards for clinical teachers. Ten key aspects of teaching were rated using a 4 point Likert scale.

357 cards were collected from 70 students on 83 faculty (42 residents, 41 staff), median 5 per teacher. Assessment of knowledge, observation of skills and providing feedback were less well done than other items. Provision of feedback was most strongly correlated with a high overall rating (Spearman coefficient,  $r > 0.7$ ,  $p < 0.0001$ ) and recommendation for a teaching award. TOFFEE is an easily remembered acronym which highlights the key components of clinical teaching. A program to feed the faculty TOFFEE using brief and entertaining video cameos of teaching scenarios is being developed. A revised card will assess the impact before and after implementation.

<b>R&amp;D-0014</b>	<b>IMPACTE - Development and Implementation of Portfolio Learning Into Internal Medicine Specialty Clinics – Pilot Project</b> <i>Erin Keely, Susan Humphrey-Murto, Stephanie Hoar, Jolanta Karpinski, Heather Lochnan, Rene Wong, Tim Wood, University of Ottawa</i>
---------------------	--

Ambulatory care offers the unique opportunity to evaluate some key CanMEDS competencies that are more difficult to evaluate on inpatient services. However, multiple supervisors, brief teacher-learner interactions, and time pressures within busy clinics make effective learning and evaluation difficult. Portfolios provide the opportunity to collect evidence of learning and

achievement. The objectives of this project were to 1. develop a portfolio to be used with core Internal Medicine residents rotating through the outpatient based rotations of endocrinology, nephrology and rheumatology; 2. determine if portfolio based teaching and evaluation in Internal Medicine subspecialty clinics is feasible. Specific portfolio tools for the role of scholar (personal learning project forms, pre rotation self-assessment), communicator (patient surveys and consultation letter rating scales), professional (clinic encounter forms), and medical expert were developed. The portfolio development, content and implementation will be discussed.

<b>R&amp;D-0015</b>	<p><b>What Influences Medical Students' Choice of Geographical Location in Distributed Programs?</b>  <i>David Snadden, Joanna Bates, Vera Frinton, Tanis Mihalyuk, Ian Scott, Galt Wilson, University of British Columbia</i></p>
---------------------	--

In response to the projected physician shortage, particularly in rural and remote regions, a distributed medical education program was implemented at the University of British Columbia (UBC). The program, entering its first students in August, 2004, includes sites in Vancouver, Prince George and Victoria. The aim of this study was to determine influencers of medical students that draw them to or detract them from studying in the north.

Using qualitative research methodology, we recruited 37 study participants in the 2004 and 2005 entry cohorts from all three sites. Semi-structured interviews were conducted, exploring factors that influenced the students in their site choice. Anonymized transcripts were coded and line-by-line analysis completed. Three primary areas of influence were observed: community, school and personal. From data analysis, relationships within and between these areas of influence, and implications for admissions processes will be discussed.

<b>R&amp;D-0016</b>	<p><b>The Research-Based Determination of the Objectives and Structure of a New Type of Family Medicine Residency</b>  <i>David Keegan, Susan Bannister, University of Western Ontario</i></p>
---------------------	--

**Objective:** To identify the objectives and structure for a new type of family medicine residency (in child health). The goal of this new program is to improve quality and accessibility of the for rural children, through a unique clinical and educational experience for family doctors.

**Methods:** Canadian family physicians, family medicine residents, patients and their parents/guardians, and consultant physicians who care for children participated in semi-structured interviews and focus groups. Australian rural family physicians with formal training in child healthcare were interviewed regarding the impact this training had on their practice and patient care. Data were analyzed using standard qualitative techniques including a constant comparative process by two independent researchers.

**Results:** Three key themes were identified: the need for this program, key clinical competencies, and specific structural program elements.

**Conclusion:** The need for this program has been strongly affirmed. The findings are the foundation for this program, launching in 2006.

<b>R&amp;D-0017</b>	<p><b>The Development of an Interdisciplinary Research Training Program in Primary Health Care.</b>  <i>Moira Stewart, Judith Belle Brown, University of Western Ontario; Frederick Burge, Dalhousie University; Alba DiCenso, McMaster University; Carole McWilliam, Graham Reid, University of Western Ontario; Susan Watt, McMaster University; Leslie Meredith, University of Western Ontario</i></p>
---------------------	---

Primary health care is a key facet of the Canadian health care system. Due to the scope of health issues encountered in primary health care and the breadth of professionals involved, research pertaining to primary health care has been fragmented among disciplines and content areas. In 2002 the CIHR awarded funding to a consortium of four academic institutions in Canada to develop a national interdisciplinary research training program in primary health care to increase research capacity. The program, Transdisciplinary Understanding and Training on Research-Primary Health Care (TUTOR-PHC) will run for five years, has completed three application cycles and graduated two cohorts totaling 23 trainees. The purpose of this presentation is to describe the process of operating and sustaining a successful primary health care research training program while ensuring an interdisciplinary focus. Descriptive information of the implementation process as well as descriptive information on applicants and evaluations from the on-site symposium, on-line workshops and on-line discussion groups will be presented.

<b>R&amp;D-0018</b>	<p><b>Team Communication Rating Scale for Family Conferences (TCRS-FC)</b>  <i>Sue Dojeiji, Anna Byszewski, Meridith Marks, University of Ottawa</i></p>
---------------------	--

**Introduction:** Increasingly, health practitioners are expected to work in teams, with little prior formal training. The family conference is a major opportunity for inter-professional teaching and for evaluating team communication and collaboration skills.

**Purpose:** To develop a rating scale that identifies essential team communication and collaboration skills for family conferences.

**Methods:** The TCRS-FC was developed based on the Calgary Cambridge Observation Guide (CCOG) and a review of the literature pertaining to family conferences. The authors evaluated family conference transcripts using the original CCOG, which was then revised to reflect team communication and collaboration skills. A group of experts including allied health professionals evaluated family conference transcripts using the preliminary rating scale. These experts provided feedback during a focus group to further revise the TCRS-FC.

**Outcomes:** The TCRS-FC is a valuable tool to evaluate team collaboration and communication skills demonstrated during family meetings, and to guide inter-professional training in this area.

<b>R&amp;D-0019</b>	<p><b>Residents' Preparedness in the CanMEDS 2000 Competencies: A Pilot Study at the University of Toronto</b>  <i>Catharine Walsh, Shiphra Ginsburg, Jody Herold McIlroy, University of Toronto</i></p>
---------------------	--

The CanMEDS 2000 "roles framework" has been adopted by specialist postgraduate training programs; however, residents' knowledge and attitudes regarding the CanMEDS project remain unclear. To explore residents' perceptions regarding the relative importance of the CanMEDS

roles, their preparedness to fulfill these roles and competencies, and where they are learning the necessary skills, we conducted a survey of specialty residents in their final common year of training. Program directors were asked how their programs are teaching the roles. 52% (n=78) of residents and 86% (n=6) of program directors responded. Residents' perceived preparedness and rating of importance was highest for the roles of professional and communicator, and lowest for manager, scholar, and advocate. Preparedness in roles did not always correlate with individual competencies. Venues most important for learning varied according to role, but residents generally learned the most from staff physicians. Opportunities remain for improvement in preparing residents in these important roles and competencies.

<b>R&amp;D-0020</b>	<p><b>What Makes a High Quality Completed ITER?</b>  <i>Nancy Dudek, Meridith Marks, Curtis Lee, University of Ottawa; Timothy Wood, Medical Council of Canada</i></p>
---------------------	--

**Purpose:** Clinical supervisors are required to provide evidence on In-training Evaluation Reports (ITERS) to substantiate their judgment that a resident passed or failed a rotation. No specific information is provided in university policies or the medical education literature to detail the features of a high quality completed ITER. This study aimed to determine what those features are.

**Method:** A focus group involving key stakeholders in residency education was held and participants were presented with real ITERS. Using a modified Delphi technique with opportunity for group discussion and group consensus, the features of a high quality completed ITER were determined.

**Results:** Sixteen features were identified. The most strongly endorsed items related to the need for specific, behaviour-based comments and examples for both exemplary and unsatisfactory performance.

**Conclusion:** Knowledge of the factors that contribute to a high quality completed ITER will help direct faculty development programs aimed at improving the quality of ITERS.

<b>R&amp;D-0021</b>	<p><b>Expanding and Integrating Competencies Beyond Clinical Expertise in a National Examination Process</b>  <i>Robert Lee, Dale Dauphinee, Henry Mandin, Medical Council of Canada</i></p>
---------------------	--

**Background:** The Medical Council of Canada (MCC) has anchored its Qualifying Examinations around behavioural objectives since 1993. The approach focused on the patient's presentation to the physician as clinical expert. In 1998 new dimensions were incorporated into the MCC Objectives, dealing with competencies around legal, ethical and organizational aspects of medical practice. Other key frameworks for physicians have since come to light. For example, the CanMEDS roles of the Royal College of Physicians and Surgeons of Canada, among others.

**Aim:** While maintaining the presentation approach for physicians as experts, the MCC will nest the objectives surrounding communication, including cultural aspects of practice, and the established legal, ethical and organizational aspects of practice within the CanMEDS roles.

**Method/Results:** The approach has undergone focused group testing. The results will be presented, including the integration of cognitive principles and other recent research, to improve

the scope and validity of the MCC Objectives.

<b>R&amp;D-0022</b>	<b>Accessing an Under-Utilized Resource: Simulators Rate Medical School Applicants Comparably to Detached Observers</b> <i>Jack Rosenfield, Harold Reiter, Kien Trinh, Kevin Eva, McMaster University</i>
---------------------	--

For Multiple Mini-Interview (MMI) stations designed to assess interpersonal skills in a performance-based manner we recruited actors to portray a dilemma that required a response from applicants. The simulator and an independent observer evaluated each applicant's performance. We proposed that simulators were capable of providing evaluations equivalent to those of independent observers.

257 simulator-observer ratings were matched. Overall test reliability equaled 0.69. The mean score provided by simulators (5.17) did not differ from that provided by observers (5.06,  $p > 0.5$ ). The correlation between ratings assigned by each group was moderate (0.42), but large with respect to correlations typically seen. On another pair of stations involving two observers, the correlation between observers was 0.41. All other inter-station correlations ranged between 0.04 and 0.28, the mean equaling 0.16. These findings reinforce the importance of collecting multiple interview samples and suggest that it is sufficient to have simulators provide candidate assessments.

<b>R&amp;D-0023</b>	<b>A Randomized Controlled Trial of Computer-assisted Anatomy Instruction</b> <i>Colin Chalk, McGill University; Daren Nicholson, Oregon Health &amp; Science University; Robert Funnell, Sam Daniel, McGill University</i>
---------------------	--

Whether computer-assisted anatomy instruction (CAI) enhances learning compared to traditional teaching methods is unknown. We developed a 3D computer model of the middle ear which allows users to rotate and manipulate structures in an infinite variety of orientations. We then designed a web-based interactive tutorial using our 3D model to teach the anatomical relationships of middle ear structures. To evaluate learning, we randomized 61 first-year medical students to either an intervention group, with access to the full 3D tutorial, or a control group, which had access to the same tutorial, but with the model's 3D functions disabled. Both groups took the same post-tutorial quiz to assess understanding of anatomical relationships. The mean scores on the 15-item quiz were  $12.4 \pm 1.6$  (intervention) and  $9.5 \pm 2.0$  (control), a highly significant difference ( $p < 0.001$ , 2-tailed t-test). This is the first controlled study demonstrating that CAI can enhance anatomy learning.

<b>R&amp;D-0024</b>	<b>The Continuing Decline of "Generalism" As A Medical Career</b> <i>George Goldsand, University of Alberta; Dianne Thurber, CAPER</i>
---------------------	---

Using the CAPER database, we studied cohorts of Canadian graduates trained in "generalist" fields between two time periods, 1995-1999 and 2000-2004, from three perspectives. We found: 1) the proportion trained in Family Medicine dropped from 45% in the 95-99 cohort to 39% in the 00-04 interval; 2) physicians who exited training as general specialists in Internal Medicine (IM), General Surgery, Ob/Gyn, Pediatrics or Psychiatry compared to all specialists decreased from 35% in 95-99 to 29% in the 00-04 cohort; and 3) the proportion of IM trainees who exited

training as general internists dropped from 33% for the 95-99 cohort to 16% for the 00-04 group. This continuing decrease in both absolute numbers and proportion of Canadian graduates choosing such “generalist” careers has implications for the social responsibility of medical schools to foster an atmosphere of pride in, and respect for, generalist skills.

<b>R&amp;D-0025</b>	<p><b>Patients’ Perception of Increased Students’ Presence in a General Surgery Outpatient Clinic.</b>  <i>Andréanne Wassef, Ramses Wassef, Michel Girard, Raymond Lalande, Christian Lavallée, Pierre Rousseau, André Ferron, Université de Montréal</i></p>
---------------------	---

Because of our revised clerkship geared towards ambulatory teaching, we polled 406 patients attending our outpatient clinic to ask them about their perception of the increased medical students’ presence and their interaction with them.

Overwhelmingly, patients answered that the students’ presence in the outpatient facilities should be an essential part of their training (97 %), and this was despite the perception that their presence increased their waiting time and “slowed down” the clinic (42 %). In addition, 62 % felt they had been better “listened to” because of their interaction with the medical student. Furthermore, 89 % of patients felt that the students’ presence gave them a feeling of being treated in a more “up to date” scientific environment. Still, 25 % of patients felt that their interaction with their physician was “less satisfying” because of the presence of a medical student and 36 % stated they would avoid the interaction with the medical student if given the choice.

A more detailed analysis will be presented showing that although patients see some drawbacks to dealing with medical students in addition to their attending physician, they also recognize several advantages to their interaction with them, and are willing to contribute to their training.

<b>R&amp;D-0026</b>	<p><b>Gender Differences in Spatial Abilities in a Course of Applied Anatomy in a Residency Program.</b>  <i>Jean Langlois, Marc Le Courtois, Germain Bergeron, Marcel Martin, University of Sherbrooke; Elizabeth Yetisir, George Wells, University of Ottawa</i></p>
---------------------	--

**Background.** Gender differences favouring males in spatial abilities have been known by cognitive psychologists for more than half a century. Spatial abilities are related to spatial anatomy and procedural skills. The study objective was to assess the relationship of gender to spatial abilities, an applied anatomy course and chosen residency program.

**Methods.** Fifty-nine residents were invited to choose an applied anatomy course in a prospective study. Spatial abilities were measured with a Vandenberg and Kuse Mental Rotations Test (MRT). **Results.** Gender differences were found with MRT score [ $11.57 \pm 3.77(\text{SD})$  v  $14.94 \pm 3.70$  in 42 female and 17 male residents;  $p = 0.003$ ], the choice of applied anatomy [31 v 71 percent in female and male residents;  $p = 0.005$ ] and chosen residency program [24 v 6 v 60 v 100 v 0 percent of male residents in Family Medicine, Internal Medicine, Surgery, Anaesthesia and Emergency Medicine, respectively,  $P=0.002$ ].

**Conclusions.** Gender differences favouring males were related to spatial abilities, choosing an applied anatomy course and residency programs with a high content of procedural skills. Future research should determine if gender differences in the choice of applied anatomy and chosen residency program were related to spatial abilities.

<b>R&amp;D-0027</b>	<p><b>Relationship of Spatial abilities with an Elective Course of Applied Anatomy in a Residency Program.</b>  <i>Jean Langlois, Marc Le Courtois, Germain Bergeron, Marcel Martin, University of Sherbrooke; Elizabeth Yetisir, George Wells, University of Ottawa</i></p>
---------------------	--

**Background.** Spatial abilities are related to spatial anatomy and prodedural skills. The study objective was to assess the relationship of spatial abilities with an elective course of applied anatomy in a residency program.

**Methods.** Fifty-nine residents were invited to choose an applied anatomy course in a prospective study. Spatial abilities were measured with a Vandenberg and Kuse Mental Rotations Test (MRT). **Results.** Percentage of residents in each residency program choosing applied anatomy was different [24 v 31 v 100 v 100 v 0 percent in Family Medicine, Internal Medicine, Surgery, Anaesthesia and Emergency Medicine, respectively;  $P < 0.0001$ ]. MRT score obtained by those choosing ( $n = 25$ ) and not choosing ( $n = 34$ ) applied anatomy was not different ( $p = 0.47$ ).

**Conclusions.** An applied anatomy course was chosen by a higher percentage of residents in Surgery and Anaesthesia but spatial abilities were not found different between residents choosing and not choosing applied anatomy. An applied anatomy course was chosen by many residents because of training needs rather than innate spatial abilities.

<b>R&amp;D-0028</b>	<p><b>Assessment of Clinical Reasoning in a General Surgery Program Using the Script-Concordance Test</b>  <i>Sarkis Meterissian, McGill University; Brent Zabolotny, University of Manitoba; Robert Gagnon, Bernard Charlin, University of Montreal</i></p>
---------------------	--

Most current methods of clinical competence assessment in surgical training use either performance based methods (OSCEs) or tests assessing the “technical rationality” of clinical reasoning (eg:MCQs). These approaches fail to capture the uncertainty of clinical problems such as those encountered in the operating room. The Script Concordance Test (SCT) is a new tool of clinical reasoning assessment which can measure skills at solving ill-defined problems. The purpose of this study was to determine whether a valid SCT could be developed that could assess intra-operative judgement. A 100-item test was developed covering the objectives of training in General Surgery and tested for face and content validity. It was also able to distinguish junior ( $56.8 + 2.5$ ) from senior residents ( $70.2 + 1.9$ ,  $p < .0001$ ). An SCT was developed with good face, content and construct validity. It is easy to administer and cost-effective and may represent the future in assessment of surgical reasoning.

<b>R&amp;D-0029</b>	<p><b>Translating Medical Students Evaluation into Action: Using Their Feedback to Prepare Tutors for PBL</b>  <i>Bruce Holmes, Patty Weld Viscount, Blye Frank, Laura Harris, Dalhousie University</i></p>
---------------------	---

At Dalhousie, students evaluate their PBL tutors electronically. Reports, including both statistical and narrative data, are produced for each unit. While these reports are invaluable for program

evaluation they had never been systematically analyzed combining all units and for more than a single year.

Student comments about tutors for the last four years were analyzed using qualitative data analysis, including QSR-NVIVO software. Themes emerged describing what students thought were behaviours of “good” tutors and “not so good” tutors. These themes have informed our tutor training process. We are able to report to current and prospective tutors the behaviours students find most helpful in PBL tutorials. Our tutor training program is being re-designed to help us better prepare tutors.

Our presentation will describe the major themes of this research, the iterative process we used, and identify how the results can be applied to other faculty and curriculum development programs.

<b>R&amp;D-0030</b>	<b>Peer Evaluation And Feedback During A Pediatric OSCE: Are Students Comparable To Faculty As Examiners?</b> <i>Geneviève Moineau, University of Ottawa; Isabelle Gaboury, Children's Hospital of Eastern Ontario; Marc Blayney, Mona Jabbour, University of Ottawa</i>
---------------------	---

**OBJECTIVES:** To evaluate the concordance between student examiners (SE) and faculty examiners (FE) during a pediatric OSCE.

To assess the acceptance of peer evaluation and feedback by medical students.

**METHODS:** At the end of their pediatric rotation, a group of medical students participated voluntarily in a mock 6-station OSCE. FEs remained stationary while students rotated through and alternated roles of examinee and SE. At each station, SEs and FEs evaluated the examinee on history, exam and/or communication skills using checklists and global assessment ratings. FEs evaluated SEs on verbal feedback given to examinee. All students completed pre/post-OSCE questionnaires.

**RESULTS:** From a total of 36 encounters SE checklist scores correlated strongly with FEs (Pearson correlation = 0.84). The Global Assessment Rating agreement for below expectation was 78% (21/27). In all cases of disagreement (n = 11), SEs gave a higher rating in 64% (6/11) of cases. Student acceptance of process was high, 70% (7/10) were comfortable evaluating and being evaluated by their peers. 70% (7/10) supported prior training in giving feedback and preferred peer evaluation to be formative only. FEs considered SEs professional in attitude and behaviour during all encounters and agreed fully with the feedback given by the SE in 60% (6/10) of encounters.

**CONCLUSIONS:** SE checklist scores and global assessment ratings correlated strongly with FEs. Compared to FEs, formative peer evaluation and feedback is acceptable and reliable using OSCE. A larger study is required to further assess validity and effectiveness.

<b>R&amp;D-0031</b>	<p><b>Can Online Simulations of Longitudinal Care Improve Medical Residents' Knowledge and Confidence in the Management of Ambulatory Care Patients? A Pilot Study</b></p> <p><i>Rene Wong, Heather Lochnan, University of Ottawa</i></p>
---------------------	---

Background : The majority of internal medicine residency graduates do not feel well prepared for ambulatory care. We aimed to determine if Continuity of Care Online Simulations (COCOS) : a virtual “longitudinal clinic”, can improve medical residents’ knowledge and confidence in the management of ambulatory endocrine patients.

Method: Medical residents starting a one-month endocrinology rotation were divided into a control group (n=12) who did the rotation without COCOS, and an intervention group (n=12) who used COCOS in addition to the standard rotation. Changes between prerotation and postrotation test scores and confidence surveys were calculated.

Results: The intervention group had significantly greater improvements in overall (? test score +21.4% vs. +5.9%,  $p < .001$ ) and longitudinal care (+20.0% vs. +2.2%,  $p < .001$ ) knowledge. The intervention group had greater increases in confidence in managing uncommon conditions.

Conclusion: The use of COCOS improved knowledge in ambulatory care medicine. Its greatest potential is to improve learning of longitudinal care and uncommon conditions with minimal time commitment required from staff.

<b>R&amp;D-0032</b>	<p><b>Le test de concordance de scripts : un outil pour évaluer le raisonnement clinique des résidents en radio-oncologie</b></p> <p><i>Carole Lambert, Robert Gagnon, Bernard Charlin, Université de Montréal</i></p>
---------------------	--

Contexte : Le test de concordance de scripts (TCS) est utilisé pour évaluer le raisonnement clinique dans les situations cliniques complexes où les opinions d’experts divergent.

But : Démontrer l’utilité du TCS pour évaluer la capacité des résidents en radio-oncologie à résoudre des problèmes en contexte d’incertitude.

Méthode : Un TCS a été complété par 155 participants de niveaux d’expertise différents en radio-oncologie.

Résultats : Le coefficient alpha de Cronbach du test est de 0,90. La corrélation test-retest est de 0,71. Les scores moyens sont 51.62, 71.20 et 76.67 pour les externes, les résidents et les radio-oncologues respectivement. La différence entre les groupes est significative ( $p < 0,001$ ).

Conclusion : Le TCS est un outil fidèle et valide pour différencier les examinés en fonction de leur niveau d’expertise en radio-oncologie.

<b>R&amp;D-0033</b>	<p><b>The Pedagogical Partnership Program (PPP): A Model for Bridging Interprofessional Differences</b></p> <p><i>Tina Martimianakis, Brian Hodges, Donald Wasylenki, University of Toronto</i></p>
---------------------	---

The PPP is presented as a model for breaking down perceived barriers and bridging professional differences to improve inter-professional collaboration. Ten clinical teachers and ten research scientists were partnered in the Department of Psychiatry, UT for a period of one year in a six

part faculty development program to improve the integration of science into clinical teaching and to encourage professional partnerships. Pre and Post surveys, observations from sessions and participant journal entries were used to evaluate the effectiveness of the program and attitudes towards teaching. Following the PPP, participants advocated for a number of departmental changes to resolve structural barriers to integrating science and clinical teaching. Researchers were able to identify ways to participate more actively and effectively in clinical teaching and clinical teachers reported increased facility in identifying and using available scientific resources to enhance their teaching.

<b>R&amp;D-0034</b>	<p><b>Growing Future Physician Leaders – A Randomized, Controlled, Single-Blind Trial of an Educational Intervention in Postgraduate Trainees</b>  <i>Hema Patel, Saleem Razack, Laurel Taylor, Karl Moore, Linda Snell, McGill University</i></p>
---------------------	--

Study objective: To determine the effectiveness of a Leadership Development Program (LDP) aimed at 1) establishing basic management knowledge and 2) promoting reflection of leadership skills in senior postgraduate trainees.

Methods: Students were randomized to exposure to the LDP (intervention group) or to regular training (control group). The 1<sup>o</sup> outcome measure was a knowledge-based written exam.

Participants’ reflective capacity was tested through a personal learning project (PLP, 2<sup>o</sup> outcome measure). Outcomes were assessed by a blinded, experienced Medical-Administrator.

Results: A total of 66 residents from 40 participating specialties enrolled in the trial, with 31 allocated to the intervention group and 35 to the control group. There were significant differences in both outcomes, favouring the intervention group: 1<sup>o</sup> outcome (85% vs. 55%;  $p < .0001$ ) and 2<sup>o</sup> outcome (mean 218 vs. 118;  $p < .001$ ).

Conclusions: This educational intervention was an effective preliminary step in encouraging leadership skills in senior physician trainees.

<b>R&amp;D-0035</b>	<p><b>Online Simulations of Office Management - A Potential Way to Expose Medical Residents to the Competencies Required to Run a Practice</b>  <i>Rene Wong, Heather Lochnan, University of Ottawa</i></p>
---------------------	---

Less than half of internal medicine graduates feel well prepared for ambulatory care. Ambulatory teaching often focuses on the medical expert role and less on other CanMEDS roles. Using objectives categorized under all CanMEDS roles, we developed Office Management Online Simulations (OMOS) as a way to teach various aspects of running an outpatient practice.

Topics discussed in OMOS are: clinic triaging/scheduling, phone calls and “on-call” issues, legal and insurance issues, billings and finances, charts and letters, applying for limited use or restricted medications, maintenance of certification. Each topic is introduced in a case-based format, requiring residents to submit answers and receive immediate feedback. Residents are given assignments or suggestions to learn more about the topic during their training.

Analogous to family physicians obtaining CME credits, residents will be asked to accumulate Ambulatory Medical Education (AME) credits during their one-month endocrinology rotation by completing OMOS modules and/or its assignments. We will describe the feasibility and progress in the development of this teaching tool and discuss the experience and results of its implementation into our clinical rotation.

<b>R&amp;D-0036</b>	<p><b>Report on a Multi-centre Trial of the Reliability, Validity and Utility of a Questionnaire to Evaluate Medical Students' Ethical Sensitivity - A Work in Progress</b></p> <p><i>Lynne Lohfeld, Lisa Schwartz, Kevin Eva, McMaster University; Jill Morrison, John Goldie, University of Glasgow</i></p>
---------------------	---

Although ethics is a prime concern in medical education, there is no gold standard to assess medical student's ethical sensitivity. We will report on findings from an ongoing project to test the psychometric properties of the "Ethics in Health Care Questionnaire". For each of the 12 vignettes presenting ethical dilemmas, subjects select the best pre-listed course of action and explain why in writing. The multiple choice items are scored by trained raters for resonance with guidelines and the open-ended answers are subjected to content analysis.

We will present findings on how we developed the instrument, and test-retest reliability results using students in Glasgow and Hamilton. We will also describe the next steps to test the instrument's inter-rater, inter-scenario, test-retest and overall reliability, and predictive value of scores compared to relevant items on Ontario and Scotland licensing exams.

<b>R&amp;D-0037</b>	<p><b>PBL in Undergraduate Medical Education: A Qualitative Study of the Views of Canadian Residents</b></p> <p><i>Lynne Lohfeld, Alan Neville, Geoff Norman, McMaster University</i></p>
---------------------	---

Recent innovations made to the undergraduate medical school curriculum at McMaster University were based, in part, on an environmental scan that included data from interviews with 17 medical residents at McMaster University. Analysis of findings from the individual interviews highlighted recommendations about problem-based learning (PBL) and tutors, tutorial problems, students, and undergraduate curricula. Participants thought that tutors should be content experts and also able to facilitate groups; that tutorial problems should be realistic, up-to-date, and include more than the medical aspects of a case. Students should be prepared, willing to participate in peer teaching and group learning. PBL programs should incorporate elements of traditional medical programs while retaining the hallmark feature of student-generated learning.

Medical residents are an underutilized source of information about undergraduate medical programs. Qualitative studies can provide detailed insights useful for guiding faculty development and curriculum improvement efforts.

<b>R&amp;D-0038</b>	<p><b>Creation of a Patient-Centered Curriculum by a Consensus-based Process – the UWO Experience. J Howard, C Kenyon, B Garcia. The Schulich School of Medicine, UWO</b></p> <p><i>John Howard, Cathy Kenyon, Berta Garcia, University of Western Ontario</i></p>
---------------------	--

A major curriculum renewal process in the 1990's led to the introduction of a patient-centered curriculum in 1997. The Schulich School of Medicine is about to undergo another curriculum re-assessment and refinement. Key components of the 1997 curriculum renewal process were that of creating a curriculum based on the ideas of faculty, students and community members, a

series of step-wise decisions rather than the acceptance or rejection of a whole curriculum and with an initial overall of vision of the curriculum without any early specific intentions.

The initial process defined the vision of the curriculum as a patient-centered curriculum that was student focused in delivery and accountable to our community. Based on this vision a total of Subject-Development Groups (SDG's) were formed with the participation of 270 faculty, students and community members. These SDG's were charged with delivering a section of instruction in both the first and second year. A series of general meetings made sure that there was minimal duplication and consistency between the groups.

The successes of the process were many – the development of Canada's first patient-centered curriculum, integration of teaching between all the basic sciences and clinical sciences, a 20 percent reduction in the total pre-clerkship lecture time even with the inclusion of added material and support of the curriculum that was built from the first day.

The challenges that remain include maintaining the vitality of the SDG groups beyond the renewal process, maintaining both long-range strategic and short term operational planning, maintaining a fluid curriculum that responds to new needs and developing and incorporating novel learning and evaluation methods in the curriculum.

Curriculum reform using a consensus-based process can effectively bring about positive changes in a medical curriculum. However, ongoing efforts must support continual modification that is responsive to new directions.

<b>R&amp;D-0039</b>	<b>New Clinical Skills Program to Enhance Learning and Integration in a PBL Curriculum.</b> <i>Bernard Martineau, Guy Waddell, Sylvie Bourque, René Hivon, Université de Sherbrooke</i>
---------------------	--

Following literature review and program evaluation of our curriculum, we noted that procedural knowledge was taught in parallel to declarative knowledge in a way that students were having difficulty integrating these components into clinical practice. We have addressed this problem by integrating clinical skills teaching in our PBL curriculum.

Methods :. The new program was launched in september 2003 for 150 first year medical students. The program has five different components: 1) training for 25 mentors and 18 tutors for each of the PBL modules, 2) disciplinary history taking and physical examination taught by PBL tutors, 3) transdisciplinary clinical reasoning and patient communication course taught by the same mentor over two years, 4) regular encounters with patients and 5) evaluation by new OSCE.

Results : We have noted a high level of satisfaction from every participant. Similar results were obtained on the five dimensions evaluated (planning, tutor/mentor performance, evaluation and feedback, specific activities and general appreciation).

Conclusion : Clinical skills integration in a PBL program is a promising strategy to meet the high standards required for physicians. Our program seems to help foster: 1) procedural knowledge by demonstration, practice and immediate feedback, 2) integration between declarative (PBL) and procedural knowledge as well 3) elaboration of conditional knowledge.

<b>R&amp;D-0040</b>	<p><b>Determining of Variables related to Research Utilization in the Nursing: a Correlative Investigation</b>  <i>Mohammad Reza Amini, Islamic azad university; Nozar nakhaei, Kerman Medical University</i></p>
---------------------	---

For over three decades Research utilization has been discussed In the Nursing Literature With growing enthusiasm and amid Increasing call for The use of Research Finding .But in spit of this? There is a Research Practice gap Remain a Persistent issue For The Nursing Profession. Many Researchers have explored The Variables to Research Uptake in order to overcome them and Identify Strategies to Facilitate Research Utilization. However, Systematic evaluation of Variables related to Utilization is lacking. The purpose of This Study Was to determine Variables Which Were related to Utilization of Research in The Clinical Practice 141 Random Nurses From Five Hospital of Kerman city Were Surveyed to elicit their opinions regarding the Variables of Research Utilization by 20 item Validated questionnaire.(Cham Pion and Funk Scale). The Concepts of attitude availability and barriers used as main Variable for This Study. Results indicated that availability, and hand on with computer was related to Research Utilization. The greatest barriers to Research use reported Included, Time constraints, Inadequate Presentation of Research Finding and accessibility to its. The Facilitators to Research Utilization were recommended Included develops more time to Review and Implement Research Finding, Availability of more relevant research and colleague support. Results From this Study can be used to develop Strategies to Increase Research Utilizations.