

Abstracts

Podium: Education

Monday, June 8 @ 13:30-15:30

Otolaryngology-Head and Neck Surgery Objectives for Undergraduate Medical Education – A National Consensus - Working Group, Canadian Society of Otolaryngology Undergraduate Medical Education

Abstract TBA

Surgical Exploration and Discovery Program: Inaugural Involvement of Otolaryngology – Head and Neck Surgery – B. Greene, L. Head, N. Gawad, S. Hamstra, L. McLean, Ottawa, ON

Learning Objectives

1. Participants will be introduced to the Surgical Exploration and Discovery Program (SEAD)
2. Participants will understand the potential benefits of implementing structured OTOHNS simulations and career information sessions in the undergraduate pre-clerkship curriculum

Objectives: There is significant variability in undergraduate Otolaryngology – Head and Neck Surgery (OTOHNS) curricula across Canadian medical schools. As part of an extracurricular program delivered jointly with other surgical specialties, the Surgical Exploration and Discovery (SEAD) program presents a new opportunity for medical students to experience OTOHNS. The purpose of this study is to review the participation and outcome of OTOHNS in the SEAD program. **Methods:** The SEAD program is a two-week, 80-hour, structured curriculum that exposes first-year medical students to nine surgical specialties across three domains: (1) operating room observer-ships, (2) career discussions with surgeons, and (3) simulation workshops. Participants completed questionnaires before and after the program to evaluate changes in career interests; self-assessment of knowledge and skills was also completed following each simulation. **Results:** SEAD participants showed significant improvement in knowledge and confidence in surgical skills specific to OTOHNS. OTOHNS was the most popular specialty, with highest interest at baseline. Eight of the 18 participants were interested in OTOHNS as a career; over the course of the program, two students gained interest and two lost interest in OTOHNS as a potential career path, demonstrating the potential for helping students refine their career choice. **Conclusion:** Participants were able to develop OTOHNS knowledge and surgical skills as well as refine their perspective on OTOHNS as a potential career option. These findings demonstrate the potential benefits of OTOHNS departments/divisions implementing simulation and career information sessions in the undergraduate preclerkship curriculum, either in the context of SEAD or as an independent initiative.

Confidence Level of Medical Students with Common Presenting Complaints after Otolaryngology Clerkship – M. E. Graham, M. Rigby, T. Brown, E. Massoud, Halifax, NS

Learning Objectives

1. By the end of this session, participants will be aware that there can be significant differences in the self-reported comfort level of medical students in managing common otolaryngologic problems between those who have, and those who have not, completed a rotation in our specialty.
2. By the end of this session, participants will be able to consider other potential methods for delivering effective learning content in Otolaryngology to those medical students who do not perform a rotation in our specialty during medical school.

Objectives: To assess medical students' level of comfort with managing common otolaryngology problems, and compare the comfort of those having completed a clerkship rotation in otolaryngology with those who had not. **Methods:** A panel of otolaryngology staff and residents developed a battery of 20 typical presenting complaints that may be initially managed by a primary care physician. A voluntary anonymous online survey was administered to medical students who had completed their core clerkship rotations, assessing level of comfort with clinical presentations, from 0 (no comfort) to 4 (very comfortable). The mean of the average scores for the battery of presenting complaints was compared between groups using one-way ANOVA. **Results:** 33 completed surveys underwent analysis (Response rate 29%). 15 students had not completed an otolaryngology rotation, 15 had completed one rotation and 3 had completed 2 or more rotations. The mean of

the average scores for students who had completed no rotation was 2.01, compared to 2.72 for students who had completed one rotation, and 3.42 for students who completed more than one rotation ($p < 0.001$). The mean score in the “no previous rotations” groups was lower than the minimum score among students who completed at least one otolaryngology rotation. **Conclusions:** Completing otolaryngology rotations incrementally increased medical students’ reported level of comfort with basic otolaryngology clinical conditions. As there is not capacity to accommodate all students in all specialties, we have a responsibility to improve our preparation of future primary care physicians, possibly through novel teaching modules administered during surgery clerkship.

CEBO: Development of the Canadian Exam Bank in Otolaryngology for Undergraduate Medical Education – A. Gooi, Winnipeg, MB, C. Diamond, Vancouver, BC, T. Kandasamy, Toronto, ON, D. Tse, Ottawa, ON, K. Fung, London, ON, Canadian Society of Otolaryngology - Head & Neck Surgery, Undergraduate Medical Education Working Group

Learning Objectives

1. By the end of the presentation, the audience will be able to list the advantages of collaborative curricula.
2. By the end of the presentation, the audience will be able to explain the rationale for the Canadian Exam Bank in Otolaryngology.
3. By the end of the presentation, the audience will be able to describe the process of creating the national exam bank.

Objective: The multiple-choice question (MCQ) is one of the most common methods for assessment in medical school. Creating high-quality MCQs requires specialized training and a complex question-vetting process. Historically, each medical school produces in isolation its own set of MCQs, creating redundancy and inefficiencies in the national medical education system. This initiative aims to improve the quality and efficiency of developing MCQs for Otolaryngology-Head & Neck Surgery by founding a national exam bank.

Methods: As part of the initiatives by the Canadian Society of Otolaryngology-Head & Neck Surgery Undergraduate Medical Education Working Group, a committee for the Canadian Exam Bank in Otolaryngology (CEBO) was formed. Each medical school was requested to submit MCQs to the rough exam bank. Questions were vetted through web-conferencing. **Results:** The initiative produced an initial exam bank of 75 questions that had passed through multiple levels of review. These questions were tagged to data including objectives, clinical area, educational domain, and CanMEDS roles. **Conclusion:** CEBO is the first initiative of its kind to develop a national exam bank via a collaborative vetting process amongst medical schools. We believe this will help efficiently produce high-quality MCQs for undergraduate medical education in Otolaryngology-Head & Neck Surgery.

Teaching and Assessment of Communication Skills Amongst Otolaryngology Residents Using Simulated Scenarios – A. Fanous, P.L. Beaudoin, J. Rappaport, M. Young, Y. Park, Montreal, QC, S. Yoon, Chicago, IL, J. Manoukian, L. HP Nguyen, Montreal, QC

Learning Objectives

1. By the end of this presentation, the audience will have a better understanding about the complexity involved in teaching and assessing communication skills amongst Otolaryngology residents.
2. By the end of this presentation, the audience will be able to consider the difference between self-perceived and 360 degree evaluations of communication skills amongst Otolaryngology residents.

Background: Communication skills are of vital importance for physicians and are considered a CanMeds core competency. **Objective:** To compare self-perceived versus 360 degree evaluations of communication skills in the context of a longitudinal ethics curriculum designed specifically for Otolaryngology – Head and Neck Surgery (OTL-HNS) residents. **Methods:** For four consecutive years, OTL-HNS residents from a single institution participated in 12 simulation-based scenarios. Residents were evaluated using a non-validated, 5-point scale assessment tool that encompassed all aspects of communication. The different evaluators were OTL-HNS attendings, observing residents, standardized patients and an outside observer. Participants also completed a self-assessment for each simulated scenario. **Results:** Eighteen residents completed four modules from 2008 to 2011. Reliability of the scenarios was found to be high, ranging from 0.78 to 0.91. There

were no differences in the mean ratings by gender or PGY level. Overall, English speaking residents performed significantly better ($p < 0.05$). Results from the random-intercept regression indicate that, on average, a learner's mean rating at baseline was 3.53/5 and increased by 0.36 points per year ($p < 0.05$). The rate of improvement for non-English speakers was significantly better than English speakers over time, by 0.42 points per year ($p < 0.05$). Self-ratings (Mean=3.70, SD=0.89) were marginally lower than other ratings (Mean=4.00, SD=0.66), ($p > 0.05$). **Conclusion:** To our knowledge, this is the first study exploring an innovative way of teaching and assessing communication skills via simulation-based scenarios applicable to OTL-HNS surgeons. The residents' communication skills, which were independent of gender or PGY level, were found to improve over time.

Assessing Clinical Reasoning of Otolaryngology–Head and Neck Surgery Residents with Script Concordance Test: A National Acceptability Study – A.-A. Leclerc, L. HP Nguyen, T. Ayad, S. Lubarsky, B. Charlin, Montreal, QC

Learning Objectives

1. To become familiar with the script concordance test (SCT) as an assessment tool.
2. To compare the acceptability of SCTs between OTL-HNS residents and faculty.
3. To understand how SCTs can be integrated into evaluations in OTL-HNS and what are the obstacles to this integration.

Objectives: Script concordance test (SCT) is an objective assessment method of complex clinical reasoning, specifically of the ability to interpret medical information under conditions of uncertainty. Many studies have supported its validity as a tool to assess higher levels of learning, but little is known regarding its acceptability to major stakeholders. Thus, the objective of our study is to compare the acceptability of SCT administered at a national level between Otolaryngology – Head and Neck Surgery (OTL-HNS) residents and a reference group of experts. **Methods:** In 2013, SCT formative questions, as well as an exit survey (based on a 5-point Likert scale), were included in the national in-training exam administered to all OTL-HNS residents (PGY2-5) across Canada. Participation in the study was voluntary. The same SCT questions and survey were then sent to a group of content experts from four universities. **Results:** For 70% of faculty and residents, the study was their first exposure to SCTs. Overall, residents found it difficult to adapt to SCTs, thought the clinical scenarios were not clear and believed that SCTs were not useful for assessing clinical reasoning. In contrast, the vast majority of experts felt that SCTs reflected real-life clinical situations, and would recommend SCT as an evaluation method in OTL-HNS. **Conclusions:** There exists a great difference in the acceptability of SCT as an assessment tool for clinical reasoning by OTL-HNS residents and by expert faculty. Further studies are needed to understand and help bridge this gap.

A Prospective Crossover Study of Small Group Tutorials vs. Interactive Large Group Sessions in Otolaryngology – Head & Neck Surgery Medical Education – S. Nelko, A. Gooi, Winnipeg, MB

Learning Objectives

1. By the end of the presentation, the audience will be able to describe the potential for interactive large group session.
2. By the end of the presentation, the audience will be able to list the results of the study regarding student attitudes towards large interactive group session versus small group tutorials.
3. By the end of the presentation, the audience will be able to discuss the potential roles of small group tutorials and large interactive group sessions for future medical education.

Objectives: Compared to traditional didactic lectures, the advantages of small group sessions include increased student participation and active learning. With the advent of audience response systems, however, there exist the potential for similar interaction to be achieved more efficiently in a large group setting. This study aims to determine student attitudes towards interactive large group sessions compared to small group sessions. **Methods:** A prospective crossover study design was used with first-year medicine students divided into 2 groups. Each group was exposed to the small group and large interactive group tutorials. **Results:** The participation rate was 95% ($n=107$). Overall, students felt they actively participated more in small group sessions (3.77 vs 3.02, $p < 0.001$) and were more satisfied with small group sessions (3.594 vs 3.10, $p < 0.008$). Challenges to interactive large group sessions included instructor learning curve and dependence

on reliable educational technology. **Conclusions:** The results of this study suggest that medical students prefer small group sessions to large interactive group sessions. As instructors become more comfortable with newer teaching techniques and educational technology becomes more ubiquitous, there may still exist a role for interactive large group sessions for medical education in the future.

Assessment of the quality of reporting of randomized controlled trials in the OTL-HNS literature – Y.Q. Huang, K. Traore, B. Ibrahim, M. Sewitch, L. HP Nguyen, Montreal, QC

Learning Objectives

1. Discuss and review the CONSORT guidelines on the reporting of randomized controlled trials (RCTs).
2. Appreciate the importance of rigorous reporting of RCTs methodology and results and its impact on evidence-based practice.
3. Explore the strengths and weakness of RCTs reporting in the ENT literature.

Background: Randomized controlled trials (RCTs) are the gold standard for evaluating health care interventions. The Consolidated Standards for Reporting Trials (CONSORT) initiative offers a widely accepted, standardized evidence-based framework for the reporting of RCTs. **Objectives:** To assess the extent to which the recent Otolaryngology – Head and Neck Surgery (OTL-HNS) literature complies with the CONSORT guidelines, and identify the CONSORT items most in need of improvement. **Methods:** A systematic review of RCTs on human subjects published in MEDLINE between 2010-2014 in the top 10 OTL-HNS journals was performed. Journals were chosen based on both their impact factor and a survey of journal preferences in multiple academic OTL-HNS centers. Full articles were reviewed and a Modified CONSORT Score (MCS) was calculated for each study based on the percentage of 24 CONSORT items addressed. The Consort checklist was modified to keep the most critical and relevant items with least redundancy. **Results:** 198 RCT were identified of which 146 have been scored up to now. MCS scores ranged from 30.4% to 87.5% (median =64.4%). Six percent of trials described the individual responsible for enrolling and assigning subjects and method of randomization. Twenty four percent (24.3%) specified the type of randomization employed; 31.9% reported the estimated effect size and precision; 43.1% of trials reported a sample size calculation. Thirty three percent of trials mentioned external validity or applicability of the findings. **Conclusion:** Important gaps were revealed in the quality of reporting of recently published RCTs in the OTL-HNS literature. Details on subject recruitment and the process of randomization were the least reported.

Face and Content Validity of a Novel, Web-based Otoscopy Simulator for Medical Education – B. Wickens, J. Lewis, London, ON, D. Morris, Halifax, NS, M. Husein, H. Ladak, S. Agrawal, London, ON

Learning Objectives

1. Discuss simulation in the context of Otolaryngology - Head and Neck Surgery education.
2. Demonstrate a novel, web-based otoscopy simulator for use in medical education.
3. Use expert evaluation to assess the simulator's face and content validity.

Background: Despite the fact that otoscopy is a widely used and taught diagnostic tool during medical training, errors in diagnosis are common. Physical otoscopy simulators have high fidelity, but they can be expensive and only a limited number of students can use them at a given time. **Objectives:** 1) To develop a purely web-based otoscopy simulator that can easily be distributed to students over the internet. 2) To perform face and content validity on the simulator by surveying experts in otoscopy. **Methods:** An otoscopy simulator, OtoTrain™, was developed at Western University using web-based programming and Unity 3D. Eleven experts from academic institutions in North America were recruited to test the simulator and respond to an online questionnaire. A 7-point Likert scale was used to answer questions related to face validity (realism of the simulator), content validity (expert evaluation of subject matter and test items), and applicability to medical training. **Results:** The mean responses for the face validity, content validity, and applicability to medical training portions of the questionnaire were all ≤ 3 , falling between the “Agree”, “Mostly Agree”, and “Strongly Agree” categories. The responses suggest good face and content validity of the simulator. Open-ended questions revealed that the primary drawbacks of the simulator were the lack of a haptic arm for force feedback, a need for increased focus on pneumatic otoscopy, and few rare disorders shown on otoscopy. **Conclusion:** OtoTrain™ is a novel, web-based otoscopy simulator that can be easily distributed and used by

students on a variety of platforms. Initial face and content validity was encouraging, and a skills transference study is planned following further modifications and improvements to the simulator.

Assessment of a Neck Palpation Simulation Model in Medical Education – S. Sivarajah, G. Campbell, K. Roth, J. Glicksman, W. Chow, K. Fung, London, ON

1. By the end of this session, learners will be able to engage in an informed discussion on the pros and cons of simulator based training, in comparison to traditional medical education.
2. Learners will also be familiarized with the assessment tools in the current literature for evaluating competency, and the development of task-specific technical skills.

Objectives We designed a high-fidelity neck model to improve the acquisition of technical skills related to the assessment of lymphadenopathy. This prospective randomised study evaluates the model as a tool for learning the procedure, while comparing it to the traditional standardized patient (SP) method. **Methods** First year medical students with no prior procedure training, were block randomized to receive training using either using SPs (n=15), or the simulator (n=14). Otolaryngologists blinded to the intervention evaluated the subjects in both groups before and after training, using validated instruments- a global rating scale (GRS), and task-based checklist (TBC). **Results** The post-test mean GRS scores were significantly higher in the SP group (\bar{x} =29.75) than the model group (\bar{x} =23) (p=0.03). There were no significant differences in mean post-test TBC scores between groups (p=0.19). **Conclusions** In comparing the two learning modalities, the SP group was found to have significantly higher combined GRS scores, indicating better overall performance. However, both groups were similar in palpating and accurately describing the enlarged lymph node's characteristics. Although these results indicate that the traditional approach to teaching is superior, feedback from the study participants suggested that the model group was at a relative disadvantage, due to the properties of the model itself. Therefore, a modified neck model was created. This is the first reported study of a high-fidelity lymphadenopathy simulator evaluated with task-specific assessment tools. This neck model can be incorporated into undergraduate medical curricula, facilitating medical students' training, while they are assessing for lymphadenopathy.

Consumer Action Cameras for Surgical Education: Lessons Learned through Innovation in Medical Education – D. Pahwa, A. Gooi, Winnipeg, MB

1. By the end of presentation, the attendee will be able to list the main advantages of a consumer action camera over surgical video cameras for teaching procedures with difficult perspectives;
2. By the end of presentation, the attendee will be able to observe consumer action cameras in use during the presentation demonstrating its benefit in surgical procedures and presentation settings;
3. By the end of presentation, the attendee will be able to consider application of consumer action cameras in their own surgical training programs to improve access to the operating surgeon's perspective.

Background: Often in surgical procedures with narrow and deep surgical fields only the operating surgeon has an adequate view of the surgical steps. Medical surgical cameras are available but quite expensive. The increasing popularity and options for consumer action cameras & point of view cameras open the possibility for more trainees to view the operating surgeon's perspective. **Objectives:** To improve the education and demonstration of surgical techniques for procedures with suboptimal visual perspectives for trainees. **Methods:** A popular consumer action camera (GoPro Hero3+ Black Edition) was used to record surgical procedures in Otolaryngology with a narrow and deep surgical field, such as a tonsillectomy and adenoidectomy. **Results:** The consumer action camera provided several advantages for surgical training. It gave trainees the operative surgeon's point-of-view for a perspective that would be otherwise impossible to ascertain. They allow learners the opportunity to review the surgical steps before and after the operation. Additionally, during the surgical procedure, an intuitive "surgeon's view" for trainees and other operating room staff becomes available. Some of these advantages are shared with medical surgical cameras, but the consumer action camera can provide additional benefits such as: wireless function, remote control, low cost, higher resolution, and live video streaming. **Conclusion:** Overall, we found consumer action cameras to be functionally comparable, less costly, and – despite some limitations – in some ways a better alternative to surgical video cameras

Development and Validation of an Assessment Tool for Medical Education Websites in Otolaryngology - Head & Neck Surgery – N. Yang, M. Mascarella, Montreal, QC, K. Fung, London, ON, M. Young, N. Posel, M. Smith, L. HP Nguyen, Montreal, QC

1. Become familiar with the developed assessment tool for medical education websites in otolaryngology
2. Understand the evidence supporting the validation of the assessment tool
3. Have an overview of the currently available medical education websites in otolaryngology

Objectives: Recent literature has shown an increase in online learning resources for undergraduate and post-graduate medical education. In this study, we develop and provide validity evidence for an assessment tool to evaluate the quality of educational websites in Otolaryngology - Head and Neck Surgery (OTL-HNS) geared towards medical students and residents. **Methods:** An assessment tool was developed based on: criteria related to content (credibility of authorship, frequency of revision, content accuracy), and design (interactivity, visual presentation, navigability, speed and recommended credible hyperlinks). A web-search of open access OTL-HNS medical education websites was conducted; OTL-HNS websites were included when free of charge, of English language and specifically geared towards medical students or residents. Online textbooks, journals and databases were excluded. All retained websites were then evaluated by two independent raters, and scores were then compared to recommendations from a content expert (considered as gold standard given the lack of pre-existing assessment tool for medical education websites). **Results:** A total of 334 websites were reviewed and 43 retained based on inclusion and exclusion criteria for in-depth analysis and scoring. The assessment tool (max score= 56) showed a step-wise score differential in recommending websites; a score of 37.5/56 for “would recommend” websites, 35.1/56 for “would maybe recommend” websites and 24.7/56 (%) for “would not recommend” websites ($p<0.01$). Statistical analysis revealed inter-rater and intra-rater reliabilities of greater than 0.7. **Conclusion:** An assessment tool was developed, found to be reliable, and was capable of differentiating the quality of educational websites for medical students and residents in OTL-HNS.

Formal Mentorship in the Surgical Residency Training Program: Early Results from a Interventional Study – H. Zhang, Edmonton, AB

Abstract TBA