Background: Smoking is a modifiable risk factor for perioperative complications. Residents of various medical and surgical specialties have the opportunity to interact with the patients in the perioperative period and have an opportunity of a “teachable moment”. However, there is limited knowledge about the training for smoking cessation received by the Canadian residents in the different specialties of anaesthesiology, family medicine, internal medicine and surgery. This survey of Canadian Program directors aims to identify the format of the current and future curriculum of smoking cessation training for residents in the different specialties.

Methods: A national survey of Canadian program directors of anesthesia, family medicine, internal medicine and surgical specialties was conducted with an online survey tool after appropriate approval by Research Ethics Committee. The survey consisted of eight questions pertaining to the demographics, current and future curriculum.

Results: One hundred and twenty-nine Canadian postgraduate programs directors were invited by emails to participate in the online survey. Overall, the Program director response rate was 60% (76/126). Responders were from family medicine 36.5% (46/126), anaesthesiology 13% (17/126), internal medicine 9.5% (12/126) and surgical specialties 17% (21/126).

From the program directors responses regarding current resident curriculum, 62% (49/79) agreed that the curriculum trained residents in asking patients about tobacco use, 29% (23/79) in assessing the role of tobacco in causing perioperative complications and only 18% (14/79) responded that the curriculum provided training to assist patients to quit smoking in perioperative period.

Eighty two percent (63/77) of the program directors agreed that the future curriculum should include training residents to assist patients to quit smoking. Currently only 20% (15/74) of program directors said that they have a program at their institution to provide tobacco interventions to surgical patients.
**Discussion:** The survey highlights the gap in the current perioperative tobacco control curriculum in Canadian residency programs. At the same time, the attitudes of program directors were generally positive towards incorporating education about tobacco cessation in the perioperative period and tobacco control interventions in residency curriculum. Addressing the gap in education about this important public health problem will allow residents to be better equipped to be able to help patients quit smoking, which ultimately may have a significant effect on both short-term surgical outcomes and the long-term health of patients. This initiative had already been taken in paediatric speciality with positive results.  

**References:**


Introduction: Obtaining and maintaining the commitment of participants in a high fidelity (Hi-Fi) simulation is essential for a better learning experience. We investigated whether wearing name tags and place identification during Hi-Fi simulation leads to better residents’ commitment and situational awareness.

Methods: Six simulation sessions were scheduled with 25 anesthesia residents unaware of the exact topic of the study. Each session ran for 4 hours during which 2 Hi-Fi simulation scenarios (a massive amniotic fluid embolism case and a postoperative malignant hyperthermia) took place with the same participants. A randomization table was used to prospectively designate in what order the scenarios would be conducted. In the first scenario run (control scenario), participants wore no name tag and there was no indication as to the location where the scenario was supposed to take place. For the second scenario (intervention scenario) run during the session, trainees had to wear name tags stating their actual roles and a sign identifying the physical location in which the scenario was to take place was posted at the entrance of the simulator. At the end of each scenario, each participant completed a 6-question survey using a 7-point Likert scale in order to evaluate their role and location awareness at the beginning and during the case as well as their overall emotional engagement and commitment level (local 0-10 scale). Later, a specially trained auditor unaware of the scenarios’ sequence listened to the soundtrack (without the visual) of the videos in search of specific indicators related to participants poor situational awareness.

Results: The subjects’ assessment of their own awareness regarding their roles or location at the beginning and during the case was not influenced by the intervention (name tags and formal indentification of scenarios’ location). The emotional implication and the subjects’ perceived realism leading to learning engagement was not modified by the intervention either. The intervention had no effect on the residents’ learning engagement (Wilcoxon matched-pairs signed rank test, figure). Number of indicators suggesting poor situation awareness was not statistically different between groups (Chi-square test).
**Conclusion:** Our study suggests that wearing name tags during Hi-Fi simulation scenarios does not improve trainees’ perception of their own situational awareness or commitment. Nevertheless, the usefulness of name tags or formal participants identification should be discussed in terms of learners and scenarios characteristics as well as educational objectives.

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Introduction: The introduction of competency-based medical education will task educators with ensuring that trainees gain proficiency in managing a wide range of rare but critical clinical events. Despite widespread adoption of simulation, there is large variability in curriculum content and trainee assessment across training programs. The purpose of this project is to develop and implement a set of standardized high-fidelity simulation scenarios to be completed by every senior anesthesiology trainee during residency.

Methods: The local Research Ethics Board waived the need for ethics review for this project. In 2013, the Royal College Office of Health Systems Innovation and External Relations and Anesthesiology Specialty Committee assembled a task force of educators representing the 17 anesthesiology training programs in Canada. The CanNASC Task Force’s goals were to design, implement and continually evaluate a national, standardized simulation-based curriculum comprising: 1) rare, but important clinical situations that may never be experienced in residency, and 2) clinical situations that are critical to competency as an anesthesiologist. Curriculum development followed the principles described by Kern and were accomplished via monthly teleconferences and annual face-to-face meetings.

Results: The following has been achieved:
1) Needs assessment for curriculum content: Every Canadian resident, program director, simulation instructor, residency program committee member and education vice-chair was invited to participate in an online survey. 368 of 958 invitees responded (38.4%), resulting in 64 suggested scenario topics. Using a modified Delphi technique, the Task Force achieved consensus on important and technically feasible scenarios. These 7 scenarios are called CanNASC Simulation Milestones (Table 1).
2) Scenario development: All scenarios have learning objectives grounded in the National Curriculum for Canadian Anesthesiology Residency. Standardized scenario templates were created and 1 scenario has been developed and piloted.
3) Assessment strategy: A published Global Rating Scale (GRS) is the primary tool for assessment of competence; it will be informed by the use of scenario specific checklists (created via a modified Delphi technique) and the ANTS GRS.
4) Implementation strategy: Standardized scenario implementation guidelines, pre-brief / debrief documents and rater training videos, guide and commentary were generated. A national simulation resource survey was done to assess for implementation feasibility.
National implementation of a CanNASC Simulation Milestone scenario is currently underway.

Discussion: It is highly feasible to achieve consensus on the elements of a national simulation-based curriculum for anesthesiology trainees. Our process could be adapted by any specialty interested in implementing a simulation-based curriculum incorporating competency-based assessment on a national scale. Data collection on nationwide implementation of the CanNASC Simulation Milestones is underway with future plans for program evaluation and analyses of elements of standardization and performance across the country.

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Introduction: Academic output in anesthesiology has been quantified in the past, and concerns regarding a decline have arisen in multiple countries.1-6 Our previous analysis of the academic output of anesthesiology departments across Canada between 2000 and 2004 identified a potentially concerning decline in the number of randomized clinical trials (RCTs).6 Also concerning is a recent report by the Canadian Association of University Teachers7 which revealed that the Canadian Institutes of Health Research budget fell 7.5% between 2007 and 2013. Here, we analyzed research from Canadian anesthesiology departments published between 2000-2013 to assess long-term productivity trends and effects of funding decreases on publication numbers.

Methods: Publications from 2000-2013 which listed Canadian anesthesiology departments as the primary corresponding source were identified using MEDLINE and categorized into methodological study designs following abstract review by two independent reviewers. Pearson correlation coefficient analysis was performed on the number of total publications, publications by study design, and publications by each university. Average annual percent change (AAPC) and annual percent change (APC)8 were calculated using Joinpoint Regression9 for the total annual number of anesthesiology publications as well as total annual number of RCTs.

Results: Between 2000 and 2013, we identified 2,940 published articles authored by a member of an anesthesiology department of a Canadian university or affiliated hospital. There was a trend towards increased publications by Canadian anesthesiology departments (r = +0.91) between 2000 and 2013. There was a slightly positive trend (r = +0.17) in number of RCTs published from 2005-2013; however, RCTs as a percentage of total publications showed a declining trend between 2000 and 2013 (Figure 1). APC analysis showed an average annual increase of 5.2% [95% CI 3.8-6.5] in total publications from 2000-2013 (α = 0.05); however, no Joinpoints were found, indicating that no major year-to-year changes accounted for this increase.

Discussion: Our results reveal a steady increase in total publications and RCTs over the 14-year period analyzed. Our results also show a slight decline in the percentage of RCT publications among total publications. Nevertheless, these results are reassuring since they suggest that anesthesiology research productivity, at least in terms of publication numbers, increased even as federal funding for biomedical research
declined during the latter part of our period of analysis. However, it is difficult to assess whether the funding decline affected publication quality. A limitation of our study is that our methodology only allowed us to identify publications based on the corresponding author, which may overlook large, multi-centre studies involving Canadian anesthesiology departments.

Figure 1. Yearly numbers of total publications overall (white bars) and randomized controlled trials (RCTs) only (gray bars) for the period 2000-2013. Per-year percentage of total publications that were RCTs is represented by filled circles; the trendline shows the overall decrease in percentage of publications that were RCTs from 2000-2013.

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86191 - MASTERY LEARNING VERSUS TIME-BASED EDUCATION: BLS SKILL RETENTION

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Background: Teaching basic life support (BLS) to laypeople is integral to improving survival after out-of-hospital cardiac arrest. However, retention of these skills after BLS training is poor. The mastery learning (ML) based educational approach is shown to be valuable in other healthcare domain. We aimed to compare the effectiveness of two distinct learning strategies for the retention of BLS skills – a traditional time-based learning approach versus mastery learning.

Methods: This study is a single-blinded randomized controlled trial approved by our local hospital and university REB. Forty-nine laypeople without previous BLS training were recruited from the science faculty of our university and were randomized to either traditional time-based (TB) BLS course group or mastery learning-based (ML) group. Both groups received a six-station BLS training course including diagnosis of cardiac arrest, chest compression, ventilation, single-rescuer BLS, AED use and choking (adult CPR and AED only). In the ML group, subjects received feedback at each station and only passed on to the next station when they achieved a predetermined level of competence. In the TB group, the same six stations were taught in two hours, as is standard for BLS teaching. Subjects were assessed using a knowledge test and simulated scenario immediately after teaching (immediate post-test) and at four months (retention post-test). All scenarios were video recorded and assessed by two blinded, independent expert raters.

Results: 46 participants completed the study. Results are presented in Table 1. Videos are currently being rated by blinded, independent raters for assessment of skills at immediate post-test and retention post-test. Detailed study results will be available for the CAS conference.
Conclusion/discussion: The difference in course duration was not clinically relevant and the ML-based BLS course is not better than the traditional BLS course with regards to the knowledge retention in laypeople. However the results of the skill testing may lead to important changes in the way BLS training is designed and delivered internationally. Ultimately, the aim of such research should be to improve patient outcome, and it is likely that improved skill retention of BLS skills amongst laypeople will ultimately improve survival after out-of-hospital cardiac arrest.

References:
