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Cardiovascular and Thoracic

(Abstracts)

Contents

"The Airwayve Podcast": A Novel Anesthesia Educational Tool for Medical Students

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Introduction/Background: Medical students remain underexposed to anesthesiology before clerkship.(1) Few accessible introductory-level materials in anesthesia exist, and the COVID-19 pandemic has compounded this issue by restricting clinical access to the specialty.(2) We developed "The Airwayve Podcast" to provide fundamental teaching in anesthesia using succinct, student-generated episodes reviewed by senior students, residents and faculty. Episodes explore core topics in anesthesia, tips for learners and feature guest speakers to facilitate career exploration. For episodes and summaries, visit www.airwayvepodcast.com.
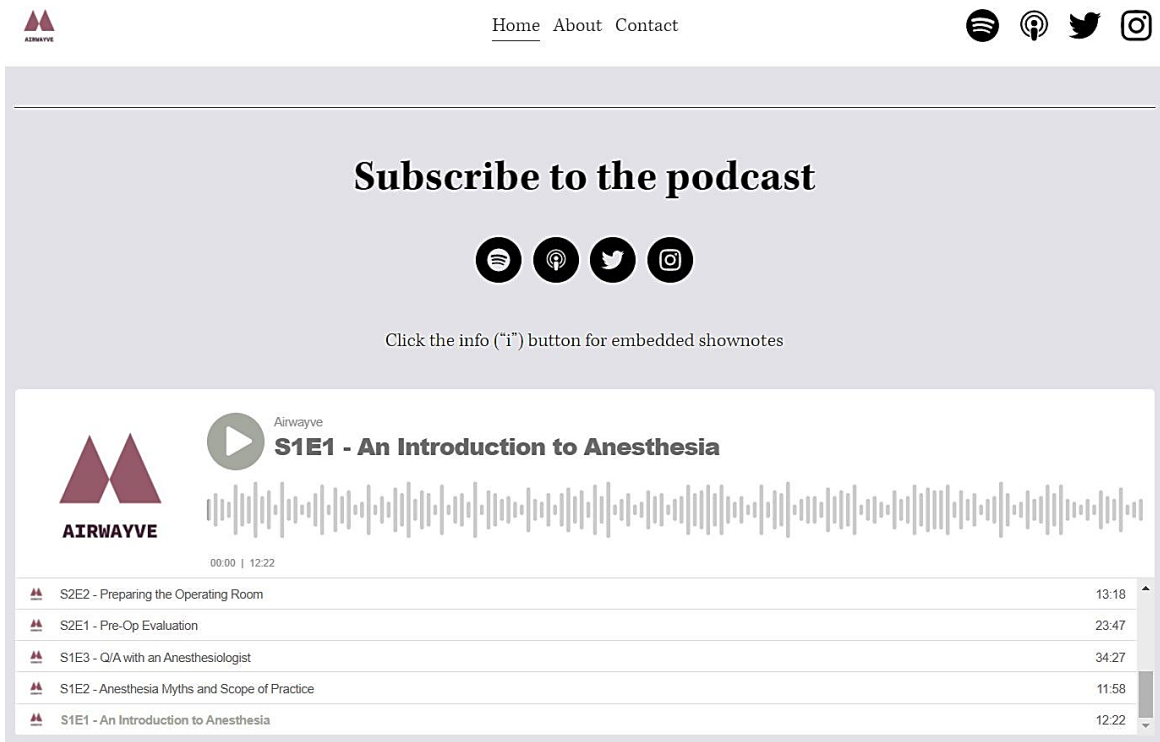
Methods: Ethics approval was not applicable because the study did not involve human or animal research. Six medical students, three residents and one faculty anesthesiologist have collaborated on the podcast. Each episode undergoes a three-step editorial process prior to recording and distribution via podcast apps. We administered a survey to capture students' perspectives regarding: preferences for the podcast as a learning and career exploration tool, podcast content, barriers to listening and preferences for future directions. Data were gathered via Likert-based assessments and multiple-choice options, which were represented as means and percentages.

Results: Thirteen episodes published across two series ("Introduction to Anesthesia" and "General Anesthesia") have received over 1100 downloads worldwide since September 2020. Data from the podcast hosting software indicates that 73% of listeners access episodes from mobile devices and listeners most commonly access episodes via the free online player on the podcast website (20%) and Spotify (19%). The Airwayve Podcast has been faculty-endorsed and shared nationally across medical schools. Survey data from 21 participants indicate that the podcast has helped students explore anesthesiology as a career path (mean 4.5/5), exposed students to anesthesia for the first time (mean 4.1/5), was perceived as effective in teaching fundamental anesthesia concepts (mean 4.4/5), was perceived as an accessible learning tool (mean 4.7/5), and helped students understand the skills and content to be successful in anesthesia (mean 4.2/5). Clerks (self-identified; n=11) indicated that the podcast was useful for clinical anesthesia rotations (mean 4.2/5). The top three requested topics for future episodes were: episodes about general anesthesia (76.2%), episodes about career advice (71.4%), and episodes featuring guest speakers (66.7%). Nine participants (42.9%) indicated that a lack of time to listen to episodes was a barrier to using the podcast as a learning tool; however, the majority of respondents (n=11; 52.4%) did not identify any barriers to listening to the podcast.

Discussion: The Airwayve Podcast is the first faculty-endorsed anesthesia podcast geared towards medical students. Preliminary results suggest strong approval of the podcast as a learning and career exploration tool. Listeners' feedback may be leveraged to optimize the content of this educational tool to ultimately support medical students' learning in the current distance-learning environment posed by the COVID-19 pandemic.

REFERENCES:

1. Adudu OP, Le NH, Devito I, Campbell FA, Levine MF. Medical student impressions of anesthesiology and anesthesiologists. Can J Anaesth. 2010 Aug;57(8):792-3. doi: 10.1007/s12630-010-9334-0. Epub 2010 Jun 4. PMID: 20524102.
2. Niburski, K., Nguyen, DD., Ingelmo, P. et al. Impact of COVID-19 on Canadian anesthesia resident matching: challenges and opportunities for applicants. Can J Anesth/J Can Anesth (2020). https://doi.org/10.1007/s12630-020-01878-z

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Airwayve
S1E1 - An Introduction to Anesthesia

00:00 | 12:22

S2E2 - Preparing the Operating Room	13:18
S2E1 - Pre-Op Evaluation	23:47
S1E3 - Q/A with an Anesthesiologist	34:27
S1E2 - Anesthesia Myths and Scope of Practice	11:58
S1E1 - An Introduction to Anesthesia	12:22

Anesthesia Virtual Resuscitation Room: A Novel, Low-Cost Simulation Platform for Undergraduate Anesthesia Education

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Introduction/Background: Medical students remain underexposed to anesthesiology and often encounter the specialty later in their training.(1) This challenge has been exacerbated by reduced clinical hours during clerkship rotations and medical schools pivoting to virtual learning due to COVID-19.(2,3) These conditions necessitate finding novel avenues to promote exposure to anesthesia and teach fundamental concepts. Though high-fidelity simulations remain active, there is no virtual simulation platform that has been explored for the modern "distance learning" environment.

Methods: Ethics approval was not applicable because the study did not involve human or animal research. Using the Virtual Resus Room (VRR), an open-access, low-fidelity simulation platform developed on Google Drive, we created a virtual simulation for students aimed at various process- and content-oriented objectives:(4)

1. Discuss effective communication in the operating room
2. Learn anesthesiologists' roles in resuscitation scenarios
3. Perform a focused pre-operative assessment
4. Discuss components of a normal induction and modifications for emergency situations
5. Identify options for monitoring and vascular access

We modified a faculty-reviewed case of a ruptured ectopic pregnancy. This was facilitated by residents in the VRR for students who were recruited via convenience sampling. We administered pre- and post-event surveys to capture metrics including: interest in anesthesiology, comfort level in simulation settings and preferences for low-fidelity simulation as a learning tool. Quantitative data were gathered via Likert-based assessments, and qualitative data via free-text responses. Mean quantitative scores were compared via Wilcoxon signed-rank test, and qualitative data were analyzed to identify emergent themes.

Results: Thirty-four medical students across all years of training registered for this simulation. Qualitatively, participants indicated a consistent preference for resident-led facilitation and believed that the virtual simulation stimulated learning, promoted exploration of anesthesiology and was appropriate for meeting the learning objectives. Compared to pre-event data, post-event assessments indicated higher mean scores for students' preparedness to discuss the roles of anesthesiologists and their preparedness to communicate, delegate and make clinical decisions in crisis settings. Post-event data also indicated that this simulation was a valuable experience to learn about anesthesiology (mean 4.62/5) and an effective medium for knowledge acquisition (mean 4.3/5). Participants indicated significant interest in participating in future simulation cases (mean 4.67/5) and interest in using VRR to supplement pre-clerkship/clerkship curricula (mean 4.7/5).

Discussion: To our knowledge, this was the first low-fidelity virtual simulation opportunity ever piloted in undergraduate anesthesia education. Preliminary results suggest a strong preference

among medical students for low-fidelity simulation as a learning tool and for more such opportunities to be implemented across undergraduate training. Our pilot simulation presents an opportunity to refine this platform based on participants' feedback and offer simulation exposure more accessibly and potentially at a lower cost than high-fidelity simulations. Future simulations can be targeted at learning objectives identified in undergraduate core clerkship curricula.

REFERENCES:

1. Adudu OP, Le NH, Devito I, Campbell FA, Levine MF. Medical student impressions of anesthesiology and anesthesiologists. Can J Anaesth. 2010 Aug;57(8):792-3. doi: 10.1007/s12630-010-9334-0. Epub 2010 Jun 4. PMID: 20524102.
2. Niburski, K., Nguyen, DD., Ingelmo, P. et al. Impact of COVID-19 on Canadian anesthesia resident matching: challenges and opportunities for applicants. Can J Anesth/J Can Anesth (2020). https://doi.org/10.1007/s12630-020-01878-z
3. Rose S. Medical Student Education in the Time of COVID-19. JAMA. 2020;323(21):2131–2132. doi:10.1001/jama.2020.5227
4. Foohey S. Virtual Resus Room [Internet]. EM Sim Cases. 2020 [cited 2021Feb4]. Available from: https://emsimcases.com/2020/06/16/virtual-resus-room/
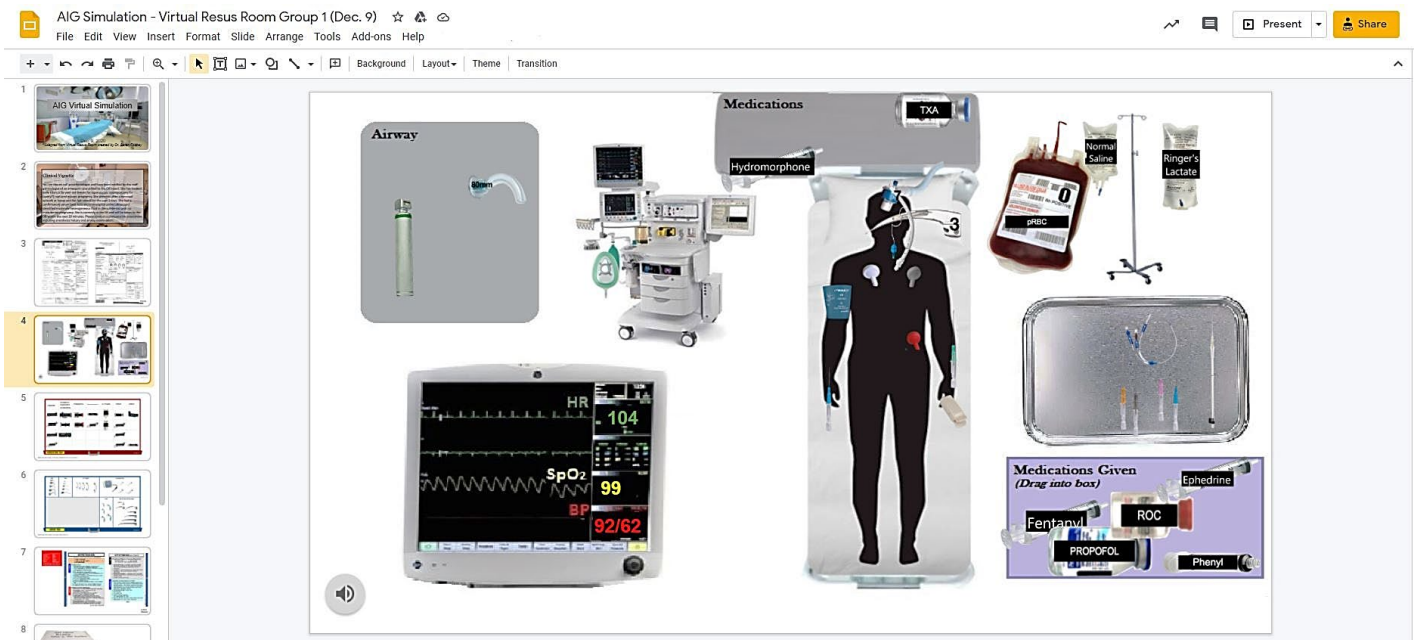
Anesthesiology Education in the 2020's: The Power and Challenges of Social Media

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Background: From spreading humorous pictures to disseminating information about world crises in a matter of seconds, social media has made a strong mark on modern civilization. Its ubiquitous use makes it a prime platform for spreading educational material to medical trainees. We have used the social media platform Instagram to create an account focused on anesthesiology-related concepts, inspiring interest in the specialty, and assisting with career coaching for medical students.

Methods: Ethics approval was not applicable because the study did not involve human or animal research. The account is run by a faculty member in collaboration with residents and medical students. Our content is carefully screened to follow university guidelines and is always referenced with copyright laws respected. We have several thousand followers, most outside of Canada and the United States.

Results: To promote our content, we use international hashtags and track our content's success through various Instagram metrics (likes, follows, comments etc.) Being an open-source platform presents many challenges such as content theft prevention and handling of inappropriate commenting. We will be presenting some of the solutions we have used to solve these challenges.

Discussion: With our account growing in followers and popularity, we seek to expand the outreach through further engagement utilizing Instagram tools, collaborating with other academic centers, incorporating the platform into our school's undergraduate medical curriculum, and using different social media platforms.

Development and Implementation of a Resident Assessment Dashboard for Competency-Based Medical Education in Anesthesiology: A Mixed Methods Study

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Introduction: Competency-based medical education (CBME) demands frequent assessment of resident performance.[1,2] Challenges in accessing the high volume of assessments in CBME may impede resident use of self-regulated learning (SRL) skills,[3,4] including self-assessment and goal setting. We describe the use of an iterative design-based framework to create a resident assessment dashboard (RAD) whereby residents access results of multiple assessments on a consolidated platform. We incorporated faculty and resident stakeholder perspectives into the development of the RAD. Our aims were to enhance resident access to assessment data, and understand the potential utility of a RAD in the context of SRL theory.

Methods: Ethics approval was obtained from the local REB. We employed a mixed-methods approach to gain an in-depth understanding of resident and educator perspectives on the elements of the dashboard that facilitate the use of assessment information for performance improvement, and the anticipated uses of the RAD in the context of SRL theory. We first used an anonymous survey to investigate elements faculty and residents felt were important for a RAD. We then performed resident and faculty focus groups to deepen survey findings, and probe stakeholder perspectives on the utility of an RAD in SRL. Thematic analysis using a grounded theory approach was used to analyse focus group transcripts.

Results: The RAD design proceeded iteratively, incorporating the results of each analysis into subsequent versions. Quantitative survey analysis revealed that 92% (24/26) of residents and 92% (17/19) of faculty felt that timely access to assessment results was important, and 77% (20/26) of residents felt that comparing their performance to anonymized peer assessment data was an important RAD feature. Thematic analysis of focus groups revealed that residents and faculty viewed the RAD as a tool to help residents accurately assess their performance, target their learning efforts, plan their learning strategy, and monitor for progress. Faculty and resident perspectives diverged on issues relating to confidentiality. Where residents were concerned that use of the RAD could threaten assessor anonymity resulting in reduced faculty engagement with assessment, faculty expressed concern that it could compromise peer assessment information privacy for trainees. Access to anonymized peer assessment data for comparison was viewed as important by a subset of residents to help them accurately self-assess. Although the RAD displayed a mix of summative and formative assessment data, in line with SRL theory, residents viewed the RAD primarily as a formative assessment tool.

Discussion: In our study, resident and faculty stakeholder co-development of a RAD permitted the inclusion of varied viewpoints in the iterative design and development of a tool to improve resident engagement with assessment. The anticipated uses of the RAD overlapped with processes inherent to SRL. Use of a RAD may enhance resident engagement with learning and assessment.

REFERENCES:

1. Iobst WF, Sherbino J, Cate OT, et al. Competency-based medical education in postgraduate medical education. Med Teach 2010; 32: 651-6.
2. Lockyer J, Carraccio C, Chan MK, et al. Core principles of assessment in competency-based medical education. Med Teach 2017; 39: 609-16.
3. van Houten-Schat MA, Berkhout JJ, van Dijk N, et al. Self-regulated learning in the clinical context: a systematic review. Med Educ 2018; 52: 1008-15.
4. Zimmerman BJ. Self-efficacy: an essential motive to learn. Contemp Educ Psychol 2000; 25: 82-91.

Does Leniency Bias Persist in Workplace-Based Assessments that Use Entrustment-Supervision Scales?

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Introduction/Background: Workplace-based assessments (WBA) play a crucial role in the assessment system of competency-based medical education programs. Entrustment-supervision scales frame assessors' decisions around the degree of supervision a trainee requires for safe patient care, reflecting the trainee's progression toward independent practice.[1] Basing WBAs on entrustment-supervision scales may encourage assessors to use the entire scale and to overcome the central tendency and leniency biases associated with proficiency scales.[2] We aimed to examine whether entrustment-supervision scales resolved leniency bias in a WBA used for postgraduate anesthesiology training.

Methods: Ethics approval was obtained from our local REB.
One of our program's WBAs for perioperative care, the Anesthesia Clinical Encounter Assessment (ACEA), includes a global rating scale (GRS) assessing 8 clinical competencies and overall independence. Supervisors rate residents on a 5-point entrustment-supervision scale, with descriptive anchors for each point (i.e., from '*Intervention*': required frequent direction or significant involvement from staff for this case; to '*Consultancy level*': could teach or supervise others for this case). We extracted ACEA data for anesthesia residents from July 2017 to January 2020. We analyzed data from assessors who completed at least ten assessments, for the frequency of low scores (i.e., '*Intervention*' or '*Direction*') and high scores (i.e., '*Autonomous*' or '*Consultancy level*') on the GRS items and the overall independence rating.

Results: We analyzed 7871 assessments for 137 residents, completed by 214 assessors. Across all residents, 10.75% (23/214) of assessors never assigned low scores for any GRS items and 27.10% (58/214) for the overall independence rating. In their first year of training, residents received a mean of 38.86 (±13.85) assessments. On at least one ACEA, 94.64% (53/57) of first year residents were rated as '*Autonomous*' or '*Consultancy level*' for overall independence, and 24.79% (±15.35) of overall independence ratings for PGY1s were assigned as '*Autonomous*' or '*Consultancy level*.' Additionally, 2.63% (2/76) assessors never assigned low scores to PGY1s for any GRS items and 11.84% (9/76) for the overall independence rating.

Discussion: As entrustment-supervision scales reference the level of supervision required for safe and high-quality care, it would be expected that a first-year resident's readiness to be trusted with clinical responsibility would start off requiring '*Intervention*' (i.e., frequent direction and/or staff involvement). Nevertheless, assessors rated junior residents in our anesthesiology program as ready for independent practice nearly 25% of the time, which suggests that leniency bias in resident assessment persists even with entrustment-supervision scales. Leniency bias can impede tracking of a resident's progress, preclude identification of learners in difficulty, and restrict the coaching and corrective feedback that trainees receive.[3] These findings highlight the need for further research to determine the promoters of leniency bias with entrustment-supervision scales and approaches to mitigate its consequences in a competency-based assessment system.

REFERENCES:

1. ten Cate O, Schwartz A, Chen HC. Assessing Trainees and Making Entrustment Decisions: On the Nature and Use of Entrustment-Supervision Scales. *Acad Med*. 2020;95(11):1662-1669.
2. Rekman J, Gofton W, Dudek N, Gofton T, Hamstra SJ. Entrustability Scales: Outlining Their Usefulness for Competency-Based Clinical Assessment. *Acad Med*. 2016;91(2):186-190.
3. Weller JM, Jones A, Merry AF, Jolly B, Saunders D. Investigation of trainee and specialist reactions to the mini-Clinical Evaluation Exercise in anaesthesia: implications for implementation. *Br J Anaesth*. 2009;103(4):524-530. doi:10.1093/bja/aep211

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Education About Sexual and Gender Minorities Within Canadian Anesthesia Residency Programs: Where Do We Stand?

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Introduction: Patients of marginalized groups require specific and individualized care, which results in better outcomes. Improving outcomes for sexual and gender minorities (SGM) has been identified as a priority area for research and education.[1] However, there is a paucity of studies regarding SGM-related health issues in anesthesia, especially within postgraduate anesthesia training. A previous study found only 19% of obstetric anesthesia fellowship programs have formalized SGM curricular content.[2] The objective of this study was to perform a national scan of SGM curricular content within Canadian postgraduate anesthesia training.

Methods: Ethics approval was obtained from the local REB. A survey was developed guided by the modified Delphi method and the CHERRIES checklist. The survey was validated by an expert panel comprising of individuals who are part of curriculum development, who work with SGM/2SLGBTQIA+ individuals and/or identify as part of the SGM community. The final survey was built on Research Electronic Data Capture software and distributed through the program administrators to current residents undergoing postgraduate anesthesia training and faculty identified as part of the programs' residency-training-committee or its equivalent. Using a modified Dillman approach, the survey was distributed to each program a maximum of three times between November 2020 and January 2021. All data was analyzed and presented via descriptive statistics.

Results: All 17 anesthesia residency programs across Canada received the survey and were represented to various degrees in the collected data. Responses from 159 residents (25%; 159/632) and 48 faculty (18%; 48/269) for a total of 207 responses (23%; 207/901) were compiled. Only 2 faculty members (4%, 2/48) and 18 residents (11%, 18/159) stated they had SGM curricular content (such as didactic lectures, simulated encounters, etc.). Additionally, when stratified by province, fewer than 20% of all respondents stated that their program had formal SGM curricular content. Twenty-three percent of resident participants felt their residency program trained them to provide competent care to SGM individuals and 55% wanted more SGM curriculum in their training. The largest barrier amongst resident respondents was perceived lack of need (65%). Fifty-six percent of the faculty surveyed wanted more SGM content in their curricula with the greatest barrier being perceived lack of need (72.1%).

Discussion: Despite a majority of residents and faculty stating that there is an ongoing need for SGM curricular content in anesthesia postgraduate training, there appears to be a lack of formal teaching in place nationally. The response rate (23%) was in keeping with typical survey response rates,[3] and may have been further negatively affected by the ongoing COVID-19 pandemic. As competence-by-design is restructuring curricula and training, now is an opportune time to integrate SGM content into anesthesia residency training.

REFERENCES:

1. Klein DA, Paradise SL, Goodwin ET. Caring for transgender and gender-diverse persons: What clinicians should know. Am Fam Physician. 2018;98(11):645–53.
2. MacCormick H, George RB. Sexual and gender minorities educational content within obstetric anesthesia fellowship programs: a survey. Can J Anesth [Internet]. 2020;67(5):532–40. Available from: https://doi.org/10.1007/s12630-019-01562-x
3. Fincham JE. Response rates and responsiveness for surveys, standards, and the Journal. Am J Pharm Educ. 2008;72(2):43.

Front of Neck Access (FONA): A Survey of Teaching Curriculums Among Canadian Anesthesiology Residency Programs

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Introduction: Front of Neck Access (FONA) is an emergency procedure that involves securing an airway through the anterior neck to facilitate alveolar oxygenation [1]. It is a last resort intervention in the cannot intubate, cannot oxygenate (CICO) scenario. The way FONA is taught during residency training is important, especially given that education and training have been implicated as significant causal factors in major airway complications [2].

Among various FONA techniques, scalpel-bougie-tube is the preferred method described in the most recent Difficult Airway Society guidelines. However, Canadian anesthesiologists have demonstrated a preference for needle techniques [3], despite its proven lower success rate [4, 5]. Given this discrepancy, we sought to determine if Canadian anesthesia residents are taught FONA techniques based on the most recent guidelines or anesthesiologist preference.

Methods: An 11-item questionnaire was developed to survey Canadian anesthesiology residency curriculums based on two domains: (1) preferred techniques of FONA taught to residents in adult and pediatric anesthesia, and (2) the duration, timing, and methods of teaching. Local ethics board approval was obtained.

Program directors of all 17 Canadian residency programs were contacted to inquire about survey completion. Surveys were distributed via email link and completed voluntarily by program director or residency curricular leads from January - June 2020. Three reminder emails were sent encouraging survey completion. Results were analyzed descriptively, using counts and percentages.

Results: Of 17 surveys distributed to Canadian anesthesia residency programs, 14 (82%) were returned.

In adult anesthesia, cricothyroidotomy by scalpel-bougie method was most commonly selected (n=10, 71%) as the preferred method of FONA taught to residents for the CICO scenario; cricorthyroidotomy by scalpel open-surgical methods (n=3, 21%) and wire-guided (seldinger) method (n=1, 7%) were also selected. In pediatric anesthesia, deferring to tracheostomy by surgeon was most commonly selected as the preferred method for FONA (n=6, 43%); cricothyroidotomy by a variety of other techniques were also selected.

Discussion: Based on a nationwide survey from 2014, Canadian anesthesiologists have previously demonstrated a preference for intravenous catheter and wire-guided techniques for FONA [3]. In contrast, the results of this survey demonstrate that most Canadian residency programs in anesthesiology (13/14, 93% of respondents) prefer to teach open surgical methods including scalpel-bougie technique for adult FONA.

It is notable and perhaps reassuring that the majority of residency programs are favouring scalpel techniques, given its superior speed and success rate in the emergency setting [1,4,5]. Nevertheless, this preference is not unanimous, with one program selecting a preference for wire-guided methods. This finding may speak to the known preference for non-surgical

techniques among Canadian anesthesiologists that still permeates to teaching at the resident level. Alternatively, it may speak to the ongoing debate that still remains regarding optimal FONA technique [1].

In pediatric FONA, the results of our survey were more varied, which may parallel the equivocal evidence in the literature.

REFERENCES:

[1] Price TM, et al. Emergency front of neck access in airway management. BJA Education. 2019 June;19(8):246-253
[2] Baker PA, et al. Education in airway management. Anaesthesia. 2011 Nov;66(s2):101-111
[3] Wong DT, et al. A survey of Canadian anesthesiologists' preferences in difficult intubation and "cannot intubate, cannot ventilate" situations. Can J Anaesth. 2014 Aug;61(8):717-26
[4] 4th National Audit Project of The Royal College of Anaesthetists and The Difficult Airway Society. Major complications of airway management in the United Kingdom. Mar 2011.
[5] Lockey D, et al. Observational study of the success rates of intubation and failed intubation airway rescue techniques in 7256 attempted intubations of trauma patients by pre-hospital physicians. Br J Anaesth. 2014 Aug;113(2):220-5