

serves as the gold standard reference for correct pharmacological therapies. It ties in closely with Choosing Wisely Canada (CWC) modeling good stewardship in antimicrobial prescriptions. The book focuses on passive didactic learning instead of active learning, which was shown to have a greater influence on prescribing behaviour. Educational video games, a form of active learning, have been shown to improve clinical skills in medical training. Contagion is a role-playing video game providing an active way of teaching antimicrobial components of the OB and CWC guidelines. **Method:** Phase I of Contagion was qualitatively tested on students and physicians at McMaster University for teaching effectiveness, applicability to real-life scenarios, and enjoyability. Post-game play 12 participants scored different aspects of the game on a Likert scale. **Curriculum, Tool, or Material:** The player is a rural physician treating infections in various communities. Each round, the player is given a crate of antibiotics. As communities are infected, the player is provided with clinical symptoms the patients present with. The player must identify the pathology and then correctly treat the communities. The player can treat empirically or order tests to identify the infectious organism. The player strategically navigates which communities to treat as there are limited actions per turn and the player must prevent communities from dying or infecting neighboring regions. Communities tend to build antibiotic resistance over time making first-line treatments unviable, thus careful strategizing and stewardship is essential. Active learning will occur when players are tasked with finding the correct answer to different presentations. After each turn, players will learn about the infecting organism, its phenotypes, and common infectious symptoms. This is considered passive learning. **Conclusion:** Contagion was well-received by physicians and medical students as an active learning tool to teach the OB and CWC guidelines. On preliminary user testing Contagion scored 5 in effectiveness in teaching treatments and 4.6 in teaching stewardship. An objective of this project is to perform large scale testing across schools to demonstrate the effectiveness of the learning components of the game. We hope to eventually create a tool that can be incorporated in continuing medical education for physicians.

Keywords: antibiotic stewardship, innovations in EM education, video-game based learning

MP25

Assessing the learning impact of the Northern City of Heroes public exhibit on bystander cardiopulmonary resuscitation response

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Innovation Concept: In Sudbury, ON 44% of out-of-hospital cardiac arrest (OHCA) patients receive bystander CPR (bCPR), and only 4.7% survive cardiac arrest. The Northern City of Heroes (NCH) community initiative was launched in April 2019 with a goal of improving survival from OHCA through hands-only bCPR in the municipality. One NCH initiative is an interactive exhibit at Science North, a science centre in Sudbury that hosts 250,000 visitors annually. The exhibit employs simulation trainers for CPR, accompanying signage and interactive elements. The goals of the exhibit are to activate bCPR, change and measure behaviours through exhibit interactions on how to deliver excellent CPR, and improve survival rates in OHCA patients. **Methods:** Data is being collected from

3000 visitors using self-reported surveying via SurveyGizmo to assess likelihood of performing bCPR, pre and post interacting with the exhibit. Visitor behaviour will be examined at the exhibit using video-recorded interactions and coding those behaviours using BORIS software. Behavioural data will be analyzed using the Visitor Engagement Framework (VEF) where initiation, transition and breakthrough learning-behaviours are coded and an exhibit Visitor Engagement Profile (VEP) is created. The VEF and VEP are tools used in informal learning settings to assess exhibit impacts on learning. **Curriculum, Tool, or Material:** The use of an easily-apprehensible, hands-on exhibit tool located in a public setting, such as a science centre, creates a platform for engaging large and diverse public audiences. This type of bCPR exhibit has not been implemented in other similar environments. The informal learning setting allows the science centre staff to engage in personalized interactions that can solidify the quality of learning and confidence in employing the new skills developed. **Conclusion:** The NCH exhibit and new strategies for embedding informal curriculum are powerful tools to reach diverse audiences, build knowledge and skills, and have a measurable impact on bCPR and OHCA survival rates. Data is being captured and tracked by Health Sciences North around the City of Greater Sudbury's bCPR and OHCA survival rates to monitor long-term impacts of the NCH community initiatives. Limitations of the study may be found in the focused demographics as well as the nature of self-reported learning. Future research directions include broader geographical surveying to assess improvements in community response to OHCA as a direct result of an interactive bCPR exhibit.

Keywords: bystander cardiopulmonary resuscitation, informal learning, innovations in EM education

MP26

The simulated newsroom: a novel educational intervention to teach advocacy skills to resident physicians

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Innovation Concept: Advocacy is a key competency of Canadian residency education, yet physicians seldom engage with supra-clinical advocacy efforts upon completion of training. Emergency medicine (EM) residency training may not equip graduates with the knowledge and skills required to engage as physician-advocates in their communities. Focused writing workshops may increase the confidence and ability of EM trainees to engage as health advocates. **Methods:** Following a literature review, simulated newsroom workshops were developed by two EM physicians with graduate-level journalism training and workplace experience. Participants were invited to participate in an audio-recorded focus-group and to submit their opinion editorial. Twelve participants registered for the workshops and six attended both sessions and the focus group; four submitted written work. Focus group transcripts and written work were qualitatively analysed to understand acceptability, feasibility, and how students might engage as future health advocates. **Curriculum, Tool, or Material:** The simulated newsroom consisted of participants acting as journalists and the expert facilitator acting as a news editor. The first workshop provided a framework for news judgement in a didactic session, followed by interactive exercises including: prioritization of news pitches, a simulated editorial meeting, and analysis of published news articles. The participants then drafted their own pitches for in situ feedback

from peers and facilitators. Two-weeks later, participants brought their completed articles for peer and expert review before submitting their final article. **Conclusion:** The innovation bolstered resident physician confidence in advocacy through the popular press, and provided demonstrable skills in opinion writing. Participants felt challenged to develop compelling narratives and differentiate this form of advocacy communication from academic writing or prior media training. Participants valued the workshop as a voluntary component of residency education led by peer experts. Through their writing, residents demonstrated an understanding of structural factors that impact patient health and health systems. Future engagement as physician advocates may be tempered by fears of professional repercussions for public engagement; the impact of physician advocacy on population health outcomes is not yet known.

Keywords: advocacy, innovations in EM education

MP27

Using a massive online needs assessment to guide the evolution of the EM Sim Cases website

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Innovation Concept: EM Sim Cases is an innovative, open-access website that was created in 2015 to publish medical simulation resources including standardized, peer-reviewed simulation cases. Herein we describe our interim analysis. **Methods:** We performed a massive online needs assessment using a methodology previously described by Chan et. al. to determine how we can shape EM Sim Cases to meet the needs of learners and educators who use it. We engaged with simulation experts from the Emergency Medicine Simulation Education Research Collaborative to design a Google Forms survey using best practices in survey design. We distributed the survey to our target community of practice via Twitter, email, and a blog post published on emsimcases.com. **Curriculum, Tool, or Material:** We received 81 responses from simulation educators representing 8 medical specialties and 13 countries. Most survey respondents identified themselves as staff physicians (n = 44) and specialized in emergency medicine (n = 39). They had 0-21+ years of experience. 37% of respondents (n = 30) stated that material from EM Sim Cases makes up 25% or more of their simulation curriculum. Several respondents noted that using this content made them feel more confident and more current. Respondents praised EM Sim Cases for a well-organized case format, the proper level of detail, consistency between case designs, and the wide variety of cases. Suggested improvements included an opportunity to directly comment on cases and more cases in pediatric, rural, and advanced airway management situations. Suggestions were made to improve the navigability of the website. Respondents wanted to see additional blog content on debriefing strategies and self-made task/skill trainers. **Conclusion:** EM Sim Cases is a novel, free open-access simulation resource. Using a massive online needs assessment we were able to determine future directions including case topics, website reorganization, and educational material. We were also able to capture how impactful a resource like this can be to clinical and educational practice outside of the simulation setting.

Keywords: innovations in EM education, needs assessment, simulation

MP28

Development and validation of a novel three-dimensional printed thorax model simulator for the simulation-based training of tube thoracostomy

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Innovation Concept: High-acuity, low-occurrence (HALO) procedures require skilled performance as they treat life-threatening conditions and are associated with significant morbidity when performed incorrectly. Simulation has proven useful for deliberate practice in a low stake setting. Tube thoracostomy is amenable to this approach. Commercially available trainers exist but often have limited realism and are prohibitively expensive particularly to non-academic centers. Three-dimensional (3D) printing produces models suitable for simulation, but no current simulator has been developed and validated for tube thoracostomy. The aim of this study was to develop such, a 3D-printed low-fidelity simulator validated for the simulation-based instruction of tube thoracostomy. **Methods:** The development of the simulator followed an iterative design cycle with collaboration between a design team and an emergency medicine expert. Its validity (face and content) was tested through hands-on practice and surveys completed by 15 acute-care practitioners. Participants performed the procedure on the simulator and then provided feedback through a mixed quantitative/qualitative product evaluation survey on appearance, realism (face validity) and value in procedural training (content validity). Mean values for overall appearance and content validity as a training tool were 4/5 and 4.3/5 respectively. All respondents felt the model was a useful adjunct. All but one stated it was a good replacement for pre-existing trainers. **Curriculum, Tool, or Material:** The model was initially printed in three parts using an Ultimaker 3 and Axiom Airwolf Dual 3D-printer. The ribcage was created using polylactic acid with polyvinyl alcohol support material. Printed sections were bonded using glue at interfaces requiring no flexibility. Flexible joints were made of varying amounts of thermoplastic polyurethane and thermoplastic elastomer. Skin overlay for the whole model was created with a cut out area for replaceable sections that subjects would incise to insert the chest tube. Skin was casted using platinum cured silicone in a 3D-printed mold. Total cost of all materials was roughly 80 CAD. **Conclusion:** The simulator was found to be a useful adjunct for the simulation-based practice of tube thoracostomy. As well, users found the model anatomically realistic and avoided high-cost and ethical issues. Further research will focus on optimization based on feedback and development into a multi-functional simulator for other HALO procedures.

Keywords: simulation-based training, three-dimensional printing, innovations in EM education

MP29

Using the Calgary audit and feedback framework to get the most out of physician practice reports

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Innovation Concept: The Calgary Audit and Feedback Framework (CAFF) is an innovative tool developed by the Physician Learning Program (PLP). By addressing four key factors –relationships, question choice, data visualization, and facilitation – CAFF addresses common barriers to physicians receiving their practice data. The goal of this study is to assess whether CAFF-facilitated physician