

chiefs of 71 Ontario hospital EDs with an annual census of more than 30,000 ED patient visits in 2017 were invited to complete a 30-item, online questionnaire using modified Dillman methodology. These hospitals constitute greater than 85% of the annual ED visits in Ontario, creating a sample reflective of the services available to most women older than 18 years old seeking care for early pregnancy complications in the province. **Results:** Respondents from 63 EDs across Ontario completed the survey (response rate 88.7%). Of the EDs surveyed, 34 (54.0%) reported they did not have access to early pregnancy clinic services for women who presented to the ED with early pregnancy complications that were safe to discharge home. At these hospitals, it was found that patients were followed up in 14 (41.2%) EDs for the same complications including pregnancy of unknown location and threatened abortion. Respondents also stated that radiologist-interpreted ultrasound was only available to 22 (34.9%) of hospital sites 24 hours a day, 7 days per week for women with early pregnancy complications. Of hospital site respondents, 55 (87.3%) reported point-of-care ultrasound (POCUS) use in the ED for patients with early pregnancy complications, and 27 (49.1%) reported the ED had access to transvaginal ultrasound probes for POCUS assessment by emergency physicians. Additionally, the proportion of ED physicians who were certified as Canadian Emergency Ultrasound independent practitioners ranged from 10% to 100%. **Conclusion:** The results of this study highlight the reliance of some hospitals on the ED to provide ongoing follow-up care to patients experiencing complications of early pregnancy. The lack of clinical resources and specialized personnel in Ontario hospital EDs makes supporting these women longitudinally unrealistic, exposing them to undue risk and complications.

**Keywords:** early pregnancy complications, ectopic pregnancy, miscarriage

#### LO41

**Evaluating paramedic comfort, confidence, and cultural competency in providing care to trans populations in a provincial ambulance system**

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**Introduction:** Close to 2 million transgender (trans) individuals live in the United States and Canada. Trans communities frequently report emergency care avoidance and negative health care experiences. Of note, there is currently no research on the paramedic perspective of caring for trans populations. Our objective was to explore paramedic comfort, confidence, and cultural competency in providing emergency care to trans individuals. **Methods:** A cross-sectional, semi-structured electronic survey was administered by email to paramedics registered with the College of Paramedics of Nova Scotia (n = 1225) from April 9th to May 7th, 2018. The survey included previously validated questions from other medical settings. Three survey reminders were sent at weekly intervals following survey initiation. A 4-point Likert scale and qualitative open-ended questions were included to evaluate paramedic comfort, confidence, and cultural competency. Descriptive statistics were used to describe respondent characteristics. Open ended questions pertaining to paramedic needs were evaluated using constant comparative analyses consisting of open coding to identify themes. **Results:** Of the 387 paramedics who participated (response rate = 32%), 77.8% (n = 301) worked ground ambulance in a mixed rural/urban location (32.6%, n = 126)

within Nova Scotia (94.5%; n = 365). Most respondents were between the ages of 41-50 (29.5%; n = 114), with > 20 years' experience (25.1%; n = 97), and male sex assigned at birth (56.1%; n = 217). Over half (54.8%; n = 212) identified as cisgender men. The majority (66.1%; n = 256) reported caring for a patient who identified as trans. 74.7% (n = 289) have never had formal education on trans health. Only 4.1% (n = 16) felt very knowledgeable about providing optimal care to trans communities and 26.6% (n = 103) felt very comfortable in providing optimal care. Most (70%; n = 271) were interested in obtaining formal education. 41.9% (n = 162) reported observing transphobia in the work place. **Conclusion:** The frequency of trans patient contact by paramedics is perceived to be high. Although comfort and knowledge are relatively low and transphobia witnessed in the work place relatively high, there was strong interest and expressed need for education on trans related health.

**Keywords:** emergency medicine, paramedic, transgender

#### LO42

**Is point-of-care ultrasound a reliable predictor of outcome during atraumatic, non-shockable cardiac arrest? A systematic review and meta-analysis**

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**Introduction:** Point-of-Care Ultrasound (PoCUS) is being increasingly utilized during cardiac arrests for prognosis. Following the publication of recent studies, the goal of this study was to systematically review and analyze the literature to evaluate the accuracy of PoCUS in predicting return of spontaneous circulation (ROSC), survival to hospital admission (SHA), and survival to hospital discharge (SHD) in adult patients with non-traumatic, non-shockable out-of-hospital or emergency department cardiac arrest. **Methods:** A systematic review and meta-analysis was completed. A search of Medline, EMBASE, Cochrane, CINAHL, ClinicalTrials.gov and the World Health Organization Registry was completed from 1974 until August 24th 2018. Adult randomized controlled trials and observational studies were included. The QUADAS-2 tool was applied by two independent reviewers. Data analysis was completed according to PRISMA guidelines and with a random effects model for the meta-analysis. Heterogeneity was assessed using I-squared statistics.

**Results:** Ten studies (1,485 participants) were included. Cardiac activity on PoCUS had a pooled sensitivity of 59.9% (95% confidence interval 36.5%-79.4%) and specificity of 91.5% (80.8%-96.5%) for ROSC; 74.7% (58.3%-86.2%) and 80.5% (71.7%-87.4%) for SHA; and 69.4% (45.5%-86.0%) and 74.6% (59.8%-85.3%) for SHD. The sensitivity of cardiac activity on PoCUS for predicting ROSC was 24.7% (6.8%-59.4%) in the asystole subgroup compared with 77% (59.4%-88.5%) within the PEA subgroup. Cardiac activity on PoCUS, compared to an absence had an odd ratio of 15.9 (5.9-42.5) for ROSC, 9.8 (4.9-19.4) for SHA and 5.7 (2.1-15.6) for SHD. Positive likelihood ratio (LR) was 6.65 (3.16-14.0) and negative LR was 0.27 (0.12-0.61) for ROSC. **Conclusion:** Cardiac activity on PoCUS was associated with improved odds for ROSC, SHA, and SHD among adults with non-traumatic asystole and PEA. We report lower sensitivity and higher negative likelihood ratio, but with greater heterogeneity compared to previous systematic reviews. PoCUS may

provide valuable information in the management of non-traumatic PEA or asystole, but should not be viewed as the sole predictor in determining outcomes in these patients.

**Keywords:** cardiac arrest, focused echocardiography, point-of-care ultrasound

#### LO43

##### **Simulation curricular content in postgraduate emergency medicine: a multicenter delphi study**

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**Introduction:** There is increasing evidence to support the integration of simulation into medical training; however, no national emergency medicine (EM) simulation curriculum currently exists. Using Delphi methodology, we aimed to identify and establish content validity evidence for EM curricular content best suited for simulation-based training to inform national postgraduate EM training. **Methods:** A national panel of experts in EM simulation-related education iteratively rated potential curricular topics, on a 4-point scale, to determine those best suited for simulation-based training. After each round, responses were analyzed and topics scoring  $<2/4$  were removed. Remaining topics were resent to the panel for further ratings until consensus was achieved, defined as Cronbach  $\alpha \geq 0.95$ . At conclusion of the Delphi process, topics that were rated  $\geq 3.5/4$  were considered core curricular topics, while those rated 3.0-3.5 were considered extended curricular topics. **Results:** Forty-four experts from 13 Canadian centres participated. Two hundred and eighty potential curricular topics, in 29 domains, were generated from a systematic review of the literature, analysis of relevant educational documents and a survey of Delphi panelists. Three rounds of Delphi surveys were completed before consensus was achieved, with response rates ranging from 93-100%. Twenty-eight topics, in 8 domains, reached consensus as core curricular topics. An additional 35 topics, in 14 domains, reached consensus as extended curricular topics. **Conclusion:** Delphi methodology allowed for achievement of expert consensus and content validation of EM curricular content best suited for simulation-based training. These results provide a foundation for improved integration of simulation into postgraduate EM training and can be used to inform a national simulation curriculum to supplement clinical training and optimize learning.

**Keywords:** curriculum development, postgraduate education, simulation

#### LO44

##### **Simulation in the continuing professional development of Canadian academic emergency physicians: a national survey**

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**Introduction:** Capitalizing on the success of Simulation-Based Education (SBE) in residency-training programs, simulation has been gradually integrated into Continued Professional Development (CPD) programs for Emergency Physicians (EPs) in Canada. This study sought to characterize how Canadian academic emergency medicine (EM) departments have implemented SBE for CPD.

**Methods:** We conducted two national surveys: 1) the National Faculty Simulation Status Assessment Survey, administered by telephone to the simulation directors (or equivalent) at 20 Canadian academic EM sites and 2) the Faculty Simulation Needs Assessment Survey administered online to all full-time EPs across 9 Canadian academic EM sites. **Results:** The response rates for the National Status and Needs Assessment Surveys were 100% (20/20), and 40% (252/635), respectively. The majority (60%) of Canadian academic EM sites reported utilizing SBE for CPD, though only 30% reported dedicated funding support. EPs reported participating in a median of 3 hours per year of SBE (IQR 1-6 hours). Reported incentivization offered in the form of continued medical education credits varied between simulation directors (67%) and EPs (44%). Simulation directors identified several significant barriers to SBE including a lack of faculty time, fear of peer judgment, and faculty inexperience. In contrast, EP-identified barriers included time commitments outside of shift, lack of opportunities, and lack of departmental. The three most common topics of interest for SBE by EPs were performance of rare procedures, pediatric resuscitation, and neonatal resuscitation. Interprofessional involvement in SBE CPD was valued by both simulation directors and EPs, with most EPs (79%) indicating it is useful. **Conclusion:** Most Canadian EPs and simulation directors recognize the value of SBE for CPD, yet it is only utilized, infrequently, by 67% of Canadian academic EM departments for this purpose. This may be explained, in part, by poor incentivization for participation. Simulation directors and EPs noted different barriers to SBE implementation for CPD suggesting the need for dialogue to improve utilization. As SBE for CPD is incorporated more frequently, and at more sites, content should be guided by local needs assessments with an emphasis on interprofessional participation.

**Keywords:** continuing professional development, emergency medicine, simulation

#### LO45

##### **Simulation-based research in emergency medicine in Canada: priorities and perspectives**

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**Introduction:** Simulation has assumed an integral role in the Canadian healthcare system with applications in quality improvement, systems development, and medical education. High quality simulation-based research (SBR) is required to ensure the effective and efficient use of this tool. This study sought to establish national SBR priorities and describe the barriers and facilitators of SBR in Emergency Medicine (EM) in Canada. **Methods:** Simulation leads (SLs) from all fourteen Canadian Departments or Divisions of EM associated with an adult FRCP-EM training program were invited to participate in three surveys and a final consensus meeting. The first survey documented active EM SBR projects. Rounds two and three established and ranked priorities for SBR and identified the perceived barriers and facilitators to SBR at each site. Surveys were completed by SLs at each participating institution, and priority research themes were reviewed by senior faculty for broad input and review. **Results:** Twenty SLs representing all 14 invited institutions