

years old. **Conclusion:** The higher smoking prevalence demonstrated in ED patients highlights the need for a targeted intervention program that is feasible for the fast-paced environment. Quit attempts have been demonstrated to be more efficacious with repeated interventions, which could be achieved by training ED staff to conduct brief motivational interviews and faxing referrals to a smokers' quit line for follow-up. Furthermore, pediatric ED's could be a valuable location for cigarette smoking screening, as the majority began smoking in their adolescence.

**Keywords:** cigarette smoking, primary prevention, smoking cessation

### LO38

#### Assessment of pain and provision of non-pharmacologic analgesia to children by prehospital providers in Southwestern Ontario: a cross-sectional study

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**Introduction:** There is abundant evidence that in children, assessment and pharmacologic treatment of pain by prehospital providers is suboptimal. Most paediatric calls are performed by primary care paramedics who are unable to administer pharmacologic analgesia to children but can administer non-pharmacologic therapies. We sought to describe the proportion of children provided non-pharmacologic analgesia by prehospital providers. **Methods:** We reviewed all ambulance call reports (ACR) of children age 0-17 years with an acutely painful condition (headache, abdominal pain, possible fracture, head/ears/eyes/nose/throat pain, back pain, and unclassified pain) who were transported to the Children's Hospital, London Health Sciences Centre between 2008 and 2017. We excluded ACRs lacking data pertaining to the primary outcome. Data collection was recorded by two blinded assessors using a study-specific Excel™ sheet. The primary outcome was the proportion of children offered non-pharmacologic analgesia. We performed a hierarchical stepwise logistic regression on the primary outcome using covariates defined a priori: age, sex, visible deformity, documentation of pain score, and complaint. **Results:** Of 19782 ACRs, we report the preliminary results of 500 ACRs reviewed from Jan 1 to Feb 22, 2016. Of the 403 ACRs eligible for analysis, the median (IQR) age was 13 (8) years and 174 (43.2%) were females. 309/403 (76.7%) calls involved primary (as opposed to advanced) care paramedics. Pain assessments were performed in 171/403 (42.4%) calls, most commonly the 0-10 verbal numeric rating scale [128/171 (74.8%)] and the median (IQR) score was 7 (4) (n = 128). Non-pharmacologic analgesia was offered in 72/403 (17.9%) of calls, most commonly ice (37/72, 51%) and splint (29/72, 40%). In the multivariate model, significant predictors of non-pharmacologic analgesia included older age (OR 1.1; 95% CI: 1.1, 1.2; p = 0.01) and visible deformity (OR 8.2; 95% CI: 2.5, 30.2; p = 0.001). Sex (p = 0.62), documentation of pain score (p = 0.81), and complaint (p = 0.05) were not significant predictors. **Conclusion:** In this preliminary analysis, the provision of non-pharmacologic analgesia to children in Southwestern Ontario by prehospital providers was suboptimal despite moderate to severe levels of pain. Less than half of patients had pain assessments documented. There is a clear need for education surrounding pain assessment and non-pharmacologic analgesic options in children among prehospital providers.

**Keywords:** pain, pediatrics, prehospital

### LO39

#### Systematic review of emergency department practice change interventions for improving asthma outcomes

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**Introduction:** Emergency departments (ED) play a vital role in asthma care for patients of all ages. Our objective was to review and synthesize all practice change interventions in ED settings that focused on improving the health outcomes of adults and children with asthma. **Methods:** This study was a systematic review adhering to the methods outlined by the Effective Practice and Organization of Care (EPOC) Cochrane Review Group. We developed a search strategy with a library scientist for the following databases: AMED, CINAHL, Embase, ERIC, MEDLINE, HealthStar, CENTRAL, DARE and Cochrane's EPOC and Airways registers. We also hand searched the Journal of Asthma, Pediatrics and Chest. Two reviewers independently reviewed titles, abstracts and full text using predetermined criteria. Data were extracted by two independent reviewers who used a structured abstraction form and assessed risk of bias. All discrepancies were resolved by consensus. **Results:** Our search strategy yielded 8,878 titles and abstracts for review. A total of 214 studies underwent full text screening and we extracted data from 27 studies. Risk of bias was judged as low in 10 studies, moderate in 8 studies and high in 9 studies. A range of interventions were employed, with education (n = 14) and reminders (n = 8) being the most prevalent. In pediatric settings, most studies targeted changing the behaviour of parents (n = 11). Four studies targeted health care providers and four studies targeted both providers and parents. We identified a major deficit in the use of behaviour change theory to guide intervention design. The most common primary outcomes of interest were unscheduled return visits (n = 14), primary care follow-up (n = 9), quality of life (n = 5) and ED length of stay (n = 4). We were not able to perform a meta-analysis due to heterogeneity in interventions and outcomes. **Conclusion:** Although we found a range of interventions used to improve asthma care in EDs, there was significant variation in reported primary outcomes. Both unscheduled return visits and primary care follow-ups, the most common primary outcomes, varied in the timeframe and manner in which they were collected. Most interventions were educational and based on an assumption that education would change behaviour. Future research in this area would benefit from standardized outcome measures and intervention designs based upon models of behaviour change model.

**Keywords:** asthma, practice change

### LO40

#### Services for emergency department patients experiencing early pregnancy complications: a survey of Ontario hospitals

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**Introduction:** Women experiencing complications of early pregnancy frequently seek care in the emergency department (ED), as most have not yet established care with an obstetrical provider. The primary objective of this study was to explore the services available (ED management, ultrasound access, and follow-up care) for ED patients experiencing early pregnancy loss or threatened early pregnancy loss in Ontario hospitals. **Methods:** The emergency medicine

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