

(95% CI 59.8-88.7;  $p < 0.01$ ). Cramping (with bleeding) trended towards a higher rate of LOO (62.7%, 95% CI 54.2-71.1;  $p = 0.07$ ). SES was not a reliable predictor of LOO, with similar clinical outcome rates above and below the poverty line (57.5% [95% CI 46.7-68.3] vs 59% [95% CI 49.3-68.6] LOO). For anemic patients, the non-live birth rate was 100%, but the number with this variable was small ( $n = 5$ ). Return visits (58.3%, 95% CI 42.2-74.4), previous abortion (58.8%, 95% CI 49.7-67.8), no living children (60.2%, 95% CI 50.7-69.6) and past pregnancy (55.9%, 95% CI 46.6-65.1) were not associated with higher rates of LOO. **Conclusion:** Identification of a live IUP, anemia, and cramping have potential as predictors of obstetrical outcome in early pregnancy bleeding. This information may provide better guidance for clinical practice and investigations in the emergency department and the predictive value of these variables support more appropriate counseling to this patient population.

**Keywords:** clinical predictors, early pregnancy, vaginal bleeding

## LO02

### Direct laryngoscopy: is it becoming a lost art in resident education?

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**Introduction:** Intubation is one of the highest-risk procedures performed in the emergency department (ED) on a regular basis. The British Columbia Airway Registry for Emergencies (BCARE) Network collects data from every ED intubation at two tertiary care centres and one community centre and serves as a valuable quality improvement tool. We compared intubation techniques, success, and complication rates between emergency medicine physicians and trainees. **Methods:** We completed an observational study of all patients intubated in the ED by resident trainees or attending physicians over a period of 28 months from July 2017 to November 2019. Respiratory therapists (RTs) completed a standardized data collection form after every intubation and the data was used to analyze techniques, success, and complication rates. Form completion compliance was periodically reviewed by cross-referencing patient names in the BCARE network with the radiology database for chest x-rays that were performed after intubation in the hospital. **Results:** 642 intubations were performed by EM physicians: 66 by PGY1-2 residents, 141 by PGY3-5 residents, and 435 by staff physicians. Airway assessment prior to intubation was completed by PGY1-2 in 78.1% of cases, PGY3-5 in 67.9%, and staff in 62.6%. Direct laryngoscopy (DL) was chosen as first-choice technique 24.2% by PGY1-2, 24.8% by PGY3-5, and 30.1% by attending physicians. Bougie was used 2.7% of cases for all groups. First-pass success was 78.8% for PGY1-2, 86.5% for PGY3-5, and 85.7% for staff. Mean number of attempts were similar at 1.24, 1.18, and 1.20 for R1-2, R3-5, and staff, respectively. There were similar complication rates between all groups, on average 16.9%, with the most common being hypoxemia prior to induction, and desaturation following induction. There was a higher rate of staff performing second intubation attempts following junior residents (50.0%) than senior residents (26.3%). **Conclusion:** Trainees have a stronger preference to use video laryngoscopy (VL) than staff physicians as their first-line technique. Success rates were similar between senior residents and attending physicians, but significantly lower in junior residents, despite number of attempts being similar between the three groups. Complication rates were similar

among all 3 groups. This data may suggest that a stronger emphasis for DL use among trainees is important.

**Keywords:** education, intubation, resident

## LO03

### Prospective comparative evaluation of the ESC 1-hour and a 2-hour rapid diagnostic algorithm for myocardial infarction using high-sensitivity troponin-T

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**Introduction:** Rapid diagnostic algorithms using high-sensitivity cardiac troponin can rapidly diagnose or exclude acute myocardial infarction (MI). However, multiple algorithms have been proposed and it is unclear if some outperform others. The objective of this study was to prospectively compare the diagnostic performance of 1- and 2-hour algorithms in clinical practice in a Canadian population. **Methods:** Emergency department patients with chest pain had high-sensitivity cardiac troponin-T (hs-cTnT) collected on presentation and 1- and 2-hours later at a single academic tertiary hospital and regional percutaneous coronary intervention site over a 2-year period. The primary outcome was index MI, the secondary outcome was 30-day major adverse cardiac events (MACE). All outcomes were 2 physician adjudicated. **Results:** We enrolled 1,167 patients with hs-cTnT collected on ED presentation. Of these, 350 had a valid 1-hour and 550 had a 2-hour hs-cTnT sample. Index MI prevalence was ~11%. Sensitivity of the 1- and 2-hour algorithms for index MI was 97.3% (95% CI 85.8-99.9%) and 100% (95% CI 91.6-100%) and for 30-day MACE was 80.9% (95% CI 66.7-90.9%) and 83.3% (95% CI 73.2-90.8%), respectively. The 1-hour algorithm was 96.3% specific for index MI (95% CI 93.8-98.2%) whereas specificity for the 2-hour algorithm was 97.9% (95% CI 96.3-100%). Both algorithms classified about one-quarter of patients in an indeterminate observational zone with an ~11% MI prevalence. **Conclusion:** Both the 1- and 2-hour algorithms were highly sensitive and specific for MI, but were less sensitive for 30-day MACE. However, the 2-hour algorithm trended toward better performance, likely because its larger delta cutoffs reduce the risk of misclassification owing to analytic variability. These findings suggest algorithms using larger delta cutoffs may provide a greater margin of safety. Further comparative evaluation of rapid diagnostic algorithms using different cutoffs and characterization of patients in the observational zone is warranted.

**Keywords:** high-sensitivity troponin, myocardial infarction, rapid diagnostic algorithms

## LO04

### Decreasing emergency department length of stay for patients with acute atrial fibrillation and flutter: a cluster-randomized trial

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**Introduction:** CAEP recently developed the acute atrial fibrillation (AF) and flutter (AFL) [AAFF] Best Practices Checklist to promote