literacy (marginalized populations) and "super-users" of emergency departments, health policy (government and not-for-profit), physicians (emergency and primary care) and other health care workers. Infographics will be available for presentation at CAEP 2016. **Conclusion:** Information graphics will be used to facilitate clinician-patient discussions for empowered decision making, facilitate clinician-learner decisions based on evidence based guidelines, and improve knowledge translation for health system administrators and policy makers regarding appropriate emergency department resource allocation.

Keywords: innovations in EM education, knowledge translation, patient centered

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The Family Medicine Obstetrical Ultrasound (FaMOUS) course: a model for training office-based family physicians in first trimester point of care ultrasound

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Introduction / Innovation Concept: In Canada, family physicians (FPs) provide the majority of 1st trimester pregnancy care and are often first to evaluate complications, including threatened and spontaneous abortion and ectopic pregnancy. To receive a same day urgent US, most patients will be sent to the emergency department (ED). With increasing availability and affordability of point of care ultrasound (PoCUS), FPs are starting to use US in their offices, potentially diverting some ED visits for patients with reassuring US findings. To date, no formal certification process exists for FPs who wish to use PoCUS for 1st trimester indications. **Methods:** The objective of this educational initiative was to implement and evaluate a novel, 2-day didactic and hands-on certification process for FPs utilizing office-based PoCUS to identify intrauterine pregnancy and fetal cardiac activity. The FaMOUS course was modeled after the Canadian Emergency Ultrasound Society Emergency Department Echo (CEUS EDE) curriculum and adapted with permission for FPs. **Curriculum, Tool, or Material:** The curriculum consisted of a deliberate practice mastery model utilizing on-line materials, seminars and hands-on training. Prior to the 2-day course, FPs completed an e-learning module comprised of core competency material specific to obstetrical practice. Learners were required to score 100% on a post-module exam to participate in the 2-day course. Attendees participated in a 4-hour training session to learn US image generation and interpretation. This was followed by 10 hours of hands-on training with CEUS instructor supervision to complete the certification process (50 determinate scans). Thirteen FPs from 3 family practice units successfully completed the certification process. Cumulative knowledge and skill levels were assessed throughout the 2-day workshop through feedback from CEUS supervisors to confirm key concepts were learned. All 13 participants agreed to utilize PoCUS in their clinical assessments of patients with 1st trimester complaints using handheld PoCUS equipment provided to the sites. FPs will be surveyed at 3 month intervals for 12 months following the FaMOUS course to assess provider confidence, satisfaction and perceived impact on clinical decision-making. **Conclusion:** The FaMOUS certification course is a standardized curriculum by which FPs can learn PoCUS safely to improve quality and timeliness of care for patients experiencing 1st trimester complaints. If PoCUS is adopted by FPs, lengthy ED visits may be decreased for this patient population.

Keywords: innovations in EM education, point-of-care ultrasound (PoCUS), pregnancy

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Procedural sedation by advanced care paramedics for emergency GI endoscopy

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Introduction: Acute upper gastrointestinal (UGI) bleeding is a relatively common emergency resulting in death in 6 to 8% of cases. UGI endoscopy is the intervention of choice which requires procedural sedation and analgesia (PSA). The Halifax Infirmary emergency department (ED) performs 1000 PSAs annually, performed by advanced care paramedics (ACPs). This has been shown safe for other indications for PSA, such as orthopedic procedures. Considering that UGI endoscopy involves upper airway manipulation, and patients are at an increased risk of massive bleeding, this procedure would be expected to be more complex and have an increased risk of adverse events (AEs). This study aims to compare PSA for UGI endoscopy performed by ACPs to that for orthopedic procedures for AEs, airway intervention and medication use. **Methods:** This study is a retrospective review of an ACP-performed ED PSA quality control database. A dataset was built matching 64 UGI endoscopy PSAs to 192 orthopedic PSAs by propensity scores calculated using age, gender and ASA classification. Outcomes assessed were hypotension (SBP $<$ 100, or 15% decrease from baseline), hypoxia (SaO_2 $<$ 90), apnea ($>$ 30sec), vomiting, arrhythmias and death in the ED. The need for airway intervention and medication use was assessed. **Results:** The UGI endoscopy group was 4.60 times more likely to suffer hypotension than the orthopedic group (OR = 4.6, CI:2.2-9.6), and a fifth as likely to require airway repositioning (OR = 0.2, CI:0.1-0.5). One endoscopy patient required endotracheal intubation. No patient died in either group. Compared to the orthopedic group, the UGI endoscopy group was one-third as likely to receive fentanyl (OR = 0.3, CI:0.2-0.6). When fentanyl was administered, endoscopy patients received an average 26.7 mcg less than orthopedic patients. The endoscopy group was 15.4 times more likely to receive ketamine (OR = 15.4, CI:4.7-66.5), and received 34.4 mg less on average. Four endoscopy patients received phenylephrine compared to none in the orthopedic group. There were no other differences. **Conclusion:** ED PSA for UGI endoscopy appears to differ significantly from that performed for orthopedic procedures. It was associated with more frequent hypotension and increased use of ketamine as a sedative. Patients undergoing UGI endoscopy were less likely to receive fentanyl and require airway repositioning. Only patients in the endoscopy group required intubation or a vasopressor agent.

Keywords: procedural sedation and analgesia (PSA), paramedicine, endoscopy

P140

Emergency department decision-making for incapacitated and unrepresented patients: a comprehensive review of the literature

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Introduction: Incapacitated patients who lack substitute decision-makers (SDM) are commonly encountered in the emergency department (ED). The number of these patients will rise dramatically as the Baby Boomers age. We can expect an influx of elderly patients who lack decisional capacity due to dementia and other illnesses, and who present without family. It is estimated that 3 to 4 percent of U.S. nursing home residents have no SDM or advance directives. Medical decision-making for this cohort poses an ethical challenge, particularly in the ED setting.

Methods: A comprehensive review of the literature was conducted surrounding decision-making for incapacitated and unrepresented patients in the hospital setting. Articles were identified using MEDLINE (1946-October 2015) and Embase (1974-October 2015). The reference lists of relevant articles were hand searched. Articles describing decision-making processes that have been proposed, tested or applied in practice were chosen for full review. The aim of this review was to outline recognized medical decision-making processes for incapacitated and unrepresented patients, and to identify areas for future research. **Results:** The search yielded 20 articles addressing decision-making for incapacitated and unrepresented patients in the hospital setting. All of these articles focus on the intensive care unit and other hospital wards; no literature on the ED setting was found. Five types of formal consulting bodies exist to assist physicians in applying the best interest standard for this patient cohort: internal hospital ethics committees, external ethics committees, public guardians, court-appointed guardians, or judges. The majority of decisions for these patients, however, are made informally by a single physician or by a healthcare team, although it is well recognized that this approach lacks appropriate safeguards. There is no consensus surrounding the optimal approach to decision-making in these cases, and as such there is significant inconsistency in how medical decisions are made for these patients. **Conclusion:** There are several articles describing decision-making processes for incapacitated and unrepresented patients, none of which focus on the ED. These processes are not practical for use in the ED. Further inquiry is needed into the most ethical and respectful method of decision-making for this patient cohort in the ED.

Keywords: ethics, geriatrics

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Limited variation in diagnostic imaging use among emergency department physicians

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Introduction: Use of diagnostic imaging in the emergency department (ED) has significantly increased over time. The decision to use a certain type of imaging, if any at all, is not always clear. Accordingly, concerns of appropriateness are justified. A starting point to assess imaging appropriateness is to measure variation in its use. It has been suggested that where large variation exists, there may be inappropriate use. **Methods:** We retrospectively studied consecutive ED visits at North York General Hospital between April 1, 2009 and March 31, 2013 (n = 316,251), and developed a two-level hierarchical logistic regression model to quantify inter-physician variation in imaging use (high-cost imaging: computed tomography (CT), magnetic resonance (MR), nuclear medicine; low-cost: plain radiography, ultrasound) in the ED after adjusting for patient-, visit- and physician-level factors. **Results:** Plain radiography or ultrasound examinations were performed during 36.3% of ED visits; CT, MR, or nuclear medicine examinations were performed during 10.6% of ED visits; 4.1% of ED visits had both high- and low-cost imaging. After adjusting for patient-, visit- and physician-specific factors, only 2.4% and 2.2% of the variation regarding whether or not an ED visit resulted in at least one high-cost and low-cost imaging test, respectively, was attributable to individual physician practice patterns. Physicians who had a tendency to obtain more low-cost imaging also obtained more high-cost imaging, and those who obtained less low-cost imaging also obtained less high-cost imaging. **Conclusion:** Only a small portion of the variation in imaging use was attributed to differences in ED physician ordering patterns, however, these findings may still help promote discussion among clinicians, and improve imaging utilization.

Keywords: variation, case-mix adjustment, hierarchical logistic regression

P142

The anticoagulated trauma patient: a Canadian experience in the era of direct oral anticoagulants

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Introduction: The anticoagulated trauma patient is a particularly vulnerable population. Our current practice is guided by experience with patients taking vitamin K dependent antagonists (VKA, like warfarin). It is currently unknown how the increasing use of direct oral anticoagulants (DOACs) will change our trauma population. We collected data about this new subset of patients to compare their clinical characteristics to patients on pre-injury VKA therapy. **Methods:** Retrospective review of anticoagulated trauma patients presenting to Toronto's two adult trauma centres, Saint Michael's Hospital and Sunnybrook Health Sciences Centre, from June 2014-June 2015 was undertaken. Patients were recruited through the institutions' trauma registries and were eligible if they suffered a traumatic injury and taking an oral anticoagulant pre-injury. Clinical and demographic data were extracted by a trained reviewer and analysed with descriptive statistics. **Results:** Our study recruited 85 patients, 33% were taking DOACs and 67% VKAs. Trauma patients on DOACs & VKAs respectively had similar baseline characteristics such as age (75.9 vs 77.4), initial injury severity score (ISS (16.9 vs 20.6)) and concomitant antiplatelet use (7.1% vs 5.4%). Both groups' most common mechanism for injury was falls and the most common indication for anticoagulation was atrial fibrillation. Patients on DOACs tended to have lower average INR (1.25 vs 2.3) and serum creatinine (94.9 vs 127.4). **Conclusion:** Patients on DOACs pre-injury now account for a significant proportion of orally anticoagulated trauma patients. Patients on DOACs tended to have less derangement of basic hematological parameters complicating diagnosis and management of coagulopathy.

Keywords: direct oral anticoagulants, bleeding

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Retrospective review of microbiology results in adult patients presenting to the emergency department with acute epididymitis

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Introduction: North American practice guidelines for empiric antibiotic selection in the treatment of epididymitis are based on very small studies. These guidelines recommend antibiotic selection based on age. This study's objective was to determine if culture results in a Canadian emergency department population with acute epididymitis support these guidelines. **Methods:** We conducted an electronic health records review ED patients with a discharge diagnosis of epididymitis. All patients who presented to two emergency department sites of the Ottawa Hospital from 2012 through 2014 were included. Data collected were patient age, urine culture results, results of urine or urethral swab nucleic acid amplification test (NAAT) for gonorrhea or chlamydia, and results of scrotal ultrasound. Ultrasound radiology reports were independently reviewed by two authors and classified as positive, negative, or indeterminate. **Results:** We identified 379 cases of epididymitis. There were

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