was primarily physician dependent. **Conclusion:** Primary barriers to decision rule integration are timing of application, hesitation surrounding patient input, and uncertainty over data. Physicians often make decisions prior to order entry. Mobile copies of decision rules should be available to better facilitate compliance. Concerns over patient influence on ordering are common. Patient-friendly materials on clinical decision rules should be available to better facilitate shared decision making while still promoting decision rules. While overuse is agreed upon, many prefer to see and track their own ordering data before supporting a physician-targeted intervention. Data reports to physicians may help affirm physician-associated overuse, and reinforce their role in responsible resource utilization.
Keywords: clinical decision making, resource utilization, imaging

P135
Canadian emergency medicine residents' training and competency in end-of-life care: a needs assessment
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Introduction: Emergency Physicians (EPs) face growing numbers of palliative care patients presenting to the emergency department (ED). Formal training for EM residents across Canada in this area is not well described. We sought to describe the training Canadian emergency medicine (EM) residents receive in end of life care issues, their attitudes toward it, self-reported knowledge and skills, and the importance they place on further training in this domain. **Methods:** We conducted an electronic survey across Canada. We collected demographic data, previous education in palliative care, attitudes toward end of life care, and a self-assessment of competency and desires for further training in the main components of palliative care pertinent to EM. We used simple descriptive statistics, a Mann-Whitney test to assess whether previous formal training in palliative care affected current comfort level, and a combination of self-reported knowledge and importance levels placed on key areas. **Results:** We received 112 responses from 17 different Universities in Canada, with 42% from the CCFP training stream, and 58% from the FRCP stream. Fifty-four percent of respondents had not completed a palliative care rotation during residency or fellowship, which was overwhelming accounted for by FRCP residents (13%, vs. 82% among CCFPs). Having completed formal training in palliative care was significantly associated with general comfort in managing terminally ill patients ($p < 0.0001$). Sixty percent of subjects felt a lack of knowledge and skills was their main limiting factor in providing ideal care for terminally ill patients in the ED. The skills deemed highest priority with lowest comfort level among residents included discussing withdrawing and withholding care, prognosticating, pharmacology and other symptom control. Preferred methods of receiving palliative care teaching included simulation, bedside teaching and small groups. **Conclusion:** The care of acute illness among palliative care patients is substantially underrepresented in the Canadian EM curriculum, particularly for FRCP trainees. Formal training is associated with increased comfort in caring for patients at the end of their life. High yield teaching interventions could be directed toward knowledge of withdrawing, prognosticating and symptom control. Simulation, bedside teaching and small groups are the preferred method for receiving such teaching.
Keywords: palliative care, end-of-life care, education

P136
A quality improvement initiative to optimize appropriate testing for venous thromboembolism in the emergency department
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Introduction: Venous thromboembolism (VTE) is a common diagnostic consideration among patients presenting to the emergency department (ED) and often requires the use of diagnostic testing. A normal d-dimer (DD) blood test can exclude VTE and eliminate the need for costly imaging and the associated contrast medium and radiation exposure. The purpose of this quality improvement initiative was to increase the use of DD testing for patients with a low and intermediate clinical pretest probability of VTE, increase the use of ventilation perfusion scans (VQ) as an alternative to CT pulmonary angiogram (CTPA) and decrease the use of CTPA and venous doppler ultrasound (VDUS) at St. Michael's hospital. **Methods:** A multi-specialty team developed an ED specific algorithm set for appropriate VTE testing that were posted on the ED online portal along with a poster in each zone of the ED after an ED launch campaign with request for feedback. A run chart was used to track DD, CTPA, VQ and VDUS utilization. Two-sided T-test comparison was conducted to compare pre- and post-implementation utilization. **Results:** Physician feedback was positive regarding the use of: DD in VTE intermediate risk patients and the VTE algorithm set. Feedback was negative for DD turnaround time. We found a significant increase in DD use (77 tests per month to 93; $p = 0.013$), but no significant change in the use of CTPA (27.3 per month to 30; $p = 0.38$), VDUS, or VQ. Number of monthly ED visits remained constant. **Conclusion:** This intervention increased DD utilization, but measuring appropriateness will require prospective collection of clinical pre-test probability. Integrated risk stratification and decision aids into computer physician order entry may be necessary to track and improve appropriateness.
Keywords: quality improvement, venous thromboembolism, utilization

P137
Emergency department discharge information sheets - a prescription for success?
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Introduction / Innovation Concept: Effective communication between health providers and patients is central to patient safety, health education and patient empowerment. Previous studies in the Calgary Zone demonstrated that less than fifty percent of emergency department patients thought discharge handouts communicated health information well and even fewer thought the handout information would aid them in care at home. A partnership between the Department of Information Design, Mount Royal University and the Department of Emergency Medicine, University of Calgary, seeks to provide an innovative solution to this problem. **Methods:** The Calgary Zone Department of Emergency Medicine has partnered with the Mount Royal University Department of Information Design community service learning course. Information design students will work to develop infographics based on the "Choosing Wisely Alberta" Campaign Topics, with content expertise provided by the Department of Emergency Medicine. **Curriculum, Tool, or Material:** The five "Choosing Wisely Alberta" topics are: CT scans for adults with head injuries, CT scans to find Blood Clots in the lung, Imaging Tests for Headaches, Imaging tests for lower back pain, Treating Sinusitis. The target audience for the project will involve staff physicians, patients, public and government. Student involvement will direct their individual projects to these target audiences and will consider important issues such as non-English speaking patients, patients with low health-

https://doi.org/10.1017/cem.2016.311 Published online by Cambridge University Press

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

P138

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

P139

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.