

measured using protocol failure (presentation to ED within 48 hours of appropriate diversion) and patient morbidity rates (hospital admission within 48 hours of diversion). Data was analysed qualitatively and quantitatively using proportions. **Results:** EMS responded to 695 calls with psychiatric complaints. Of the 650 taken directly to the ED, 18 met diversion criteria; these were missed protocol opportunities (3%). 45 patients were diverted. There was protocol noncompliance in 36 cases (80%), but 34 were due to incomplete recording of vital signs. There were direct protocol violations in only 2 cases (4%). There was protocol failure in 3 cases (33%), and patient morbidity in 8 cases (18%). No patients died within 48 hours of diversion. **Conclusion:** EMS providers were highly compliant with the protocol when transporting patients directly to the ED. There were high levels of protocol non-compliance in diverting patients to CI, though this is largely attributed to incomplete recording of vital signs; direct protocol violations were low. The protocol provides moderate levels of safety in diverted patients. Broader implementation of a diversion protocol could reduce the volume of mental health patients seen in the ED, and improve quality of care received by this patient population.

**Keywords:** prehospital care, diversion, mental health

#### P019

##### **Prehospital diversion of intoxicated patients to a detoxification facility vs the emergency department: safety and compliance of an EMS direct transport protocol**

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**Introduction:** Prehospital transport of patients to an alternative destination (diversion) has been proposed as part of a solution to overcrowding in emergency departments (ED). We evaluated compliance and safety of an EMS bypass protocol allowing paramedics to transport intoxicated patients directly to an alternate facility [Withdrawal Management Services (WMS)], bypassing the ED. Patients were eligible for diversion if they were  $\geq 18$  years old, classified as CTAS level III-IV, scored  $< 4$  on the Prehospital Early Warning (PHEW) score, and did not have any vital sign parameters in a danger zone (as per PHEW score criteria). **Methods:** A retrospective analysis was conducted on intoxicated patients presenting to Sudbury EMS. Data was abstracted from EMS reports, hospital medical records, and discharge forms from WMS. Protocol compliance was measured using missed protocol opportunities (patients eligible for diversion but taken directly to the ED) and protocol noncompliance rates; protocol safety was measured using protocol failure (presentation to ED within 48 hours of appropriate diversion) and patient morbidity rates (hospital admission within 48 hours of diversion). Data was analysed qualitatively and quantitatively using proportions. **Results:** EMS responded to 681 calls for intoxication. Of the 568 taken directly to the ED, 65 met diversion criteria; these were missed protocol opportunities (11%). 113 patients were diverted. There was protocol noncompliance in 41 cases (36%), but 35 were due to incomplete recording of vital signs. There were direct protocol violations in only 6 cases (5%). There was protocol failure in 16 cases (22%), and patient morbidity in 1 case (1%). No patients died within 48 hours of diversion. **Conclusion:** EMS providers were fairly compliant with the protocol when transporting patients directly to the ED. There was some protocol non-compliance with patients diverted to WMS, though this is largely attributed to incomplete recording of vital signs; direct protocol violations were low. The protocol provides high levels of safety for patients diverted to WMS. Broader implementation of the protocol could reduce the volume of intoxicated patients seen in the ED, and improve quality of care received by this population.

**Keywords:** prehospital care, diversion, alcohol intoxication

#### P020

##### **Ultrasound-guided peripheral intravenous access in the emergency department: A randomized controlled trial comparing single and dual-operator technique**

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**Introduction:** Intravenous (IV) cannulation is a common and important procedure in the emergency department (ED). Ultrasound-guided IV (UGIV) insertion has been shown to be more effective than the blind approach for patients with difficult IV access. The optimal technique for UGIV insertion has not been determined. The objective of this study is to compare the first-attempt cannulation success rate between a single-operator technique (provider holds the ultrasound probe while simultaneously placing the IV), with dual-operator technique (whereby a second provider holds the probe) in ED patients with predicted difficult access. **Methods:** We conducted a randomized controlled trial using a convenience sample of adult ED patients. Participating ED nurses received a one-hour UGIV training session on including didactic and practical training on simulated arms. Patients were enrolled if they met any of three criteria for difficult access: (1) history of difficult access, (2) no visible or palpable veins, or (3) two failed blind attempts. High-acuity patients or those unable to consent or comply with the procedure were excluded. Eligible patients were randomized to single or dual-operator technique and a maximum of two UGIV attempts were allowed. The primary outcome was first-attempt success rate. Additional outcomes included overall success rate, number of attempts, time to successful cannulation (needle insertion to flashback), patient pain scores, operator 'ease of use' scores, and complications 30 minutes after insertion including IV failure. Other variables collected included patient demographics, presenting complaint, indication for ultrasound use, relevant medical history, and location/depth of the target vessel. Fisher's exact test was used to compare success rates between groups. **Results:** Data collection was ongoing at the time of submission, but is expected to be completed by May 01, 2017. **Conclusion:** This is the first randomized-controlled trial comparing single and dual-operator ultrasound technique for difficult IV insertion in ED patients. The results from this study will provide evidence to guide education, and ensure best practice of UGIV insertion in the ED.

**Keywords:** ultrasound, vascular access, nurse education

#### P021

##### **A 'Pawitive' addition to the ER patient experience: A pilot evaluation of the St. John Ambulance therapy dog program in a Canadian hospital**

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**Introduction:** Animal-assisted interventions (AAI) have been applied in numerous clinical settings to help reduce pain, stress, and anxiety. This qualitative study sets out to evaluate the St. John Ambulance Therapy Dog program in the emergency department of the Royal University Hospital. **Methods:** An observer identified patients interested in visiting with a Therapy Dog during their emergency department stay and obtained consent. Participants were asked to indicate on a pictographic scale their physical and mental states before and after the visit. The Therapy Dog team, consisting of a dog and handler, visited the patient for 5-10 minutes. During this time an observer took notes. Participants were asked at the conclusion of the visit to answer questions regarding their overall experience with the Therapy Dog team.

**Results:** 117 patients participated in this study. Pre- and post AAI pictographic faces [c1] scale results showed an average improvement of 1.2. Before AAI, patients most commonly reported feeling pain, anxiety, tiredness, sadness, boredom, weakness, and a desire to go home. Immediately after the AAI, they most commonly reported feeling happiness, relaxation, better, calmness, and good. Observers noted positive participant and family changes during the AAI, including tone of voice, body language, facial expression (e.g., smiling), and openness. Patients often made efforts to make physical contact for the majority of the visit, often despite pain and immobility. There was also frequent sharing of stories about patients' pets, which seemed to serve as a comfort within the emergency department environment. **Conclusion:** Animal-assisted interventions with a therapy dog team in an emergency department is a 'pawsitive' addition to the patient experience. An important next step is to measure whether the positive impact continued post visit.

**Keywords:** animal-assisted interventions, therapy dog, emergency department

#### P022

##### **Physician reporting of medically unfit drivers: barriers and incentives**

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**Introduction:** Most medically unfit drivers are not reported to licensing authorities. In BC, physicians are only obligated to report unfit drivers who continue to drive after being warned to stop. This study investigates barriers to and incentives for physician reporting of medically unfit drivers. **Methods:** We used an online survey to study physician-reported barriers to reporting medically unfit drivers and their idea of incentives that would improve reporting. Email invitations to participate in the survey were sent to all physicians in BC through *DoctorsofBC* and to all emergency physicians (EPs) in the UBC Department of Emergency Medicine. **Results:** We received responses from 242 physicians (47% EPs, 40% GPs, 13% others). The most common barrier to reporting was not knowing which unfit drivers continue to drive (79% of respondents). Other barriers included lack of time (51%), lack of knowledge of the process, guidelines, or legal requirement for reporting (51%, 50%, 45% respectively), fearing loss of rapport with patients (48%), pressure from patients not to report (34%), lack of remuneration (27%), and pressure from family members not to report (25%). EPs were significantly less likely than other physicians to cite loss of rapport, pressure from patients, or pressure from family as barriers, but more likely to cite not being aware of drivers who continue to drive after being warned, lack of knowledge (regarding legal requirements to report, guidelines for determining fitness, and the reporting process), and lack of time. Factors that would increase reporting unfit drivers included better understanding of criteria for fitness to drive (70%), more information regarding how to report (67%), more information on when to report (65%), and compensation (43%). Free text comments from respondents identified other barriers/incentives. Reporting might be simplified by telephone hotlines or allowing physician designates to report. Physicians feared legal liability and suggested the need for better medico-legal protection. Loss of patient rapport might be minimized by public education. Failure of response from licensing authorities to a report (long wait times, lack of feedback to physician) was seen as a barrier to reporting. **Conclusion:** We identified barriers to physician reporting of medically unfit drivers and incentives that might increase reporting. This information could inform programs aiming to improve reporting of unfit drivers.

**Keywords:** driver fitness, motor vehicle crashes

#### P023

##### **Emergency department data provides a realistic count of pedestrian injuries**

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**Introduction:** Walking as a form of active transportation is promoted by health professions and environmentalists alike. While the health benefits are indisputable, active transportation is not without risk. Pedestrians are vulnerable road users who often suffer serious injuries especially when involved with collisions with motor-vehicles. While pedestrian injuries involving motor-vehicles are captured in road trauma surveillance systems based on police crash reports, non-collision injuries in this population may be caused by poorly designed infrastructure but are seldom counted as road trauma. This gap hinders road improvement efforts aiming to increase safety for all road users. This study aims to address this knowledge gap. Our objective is to study the profile and circumstances of injuries in pedestrians presenting to ED. **Methods:** This was a cross-sectional historical chart review study. All injured patients attending our ED are electronically flagged according to mechanism of injury. We reviewed the medical charts of all ED visits flagged as "Pedestrian" or "Fall" to identify all injured pedestrians (defined in this study as anyone walking on a public roadway or getting on/off public transportation). All pedestrian injuries occurred in 2015 were included for chart review. **Results:** In 2015, a total of 6192 ED presentations were flagged as pedestrian (n = 436) or fall (n = 5756), and 1108 of these met our inclusion criteria. Of these, 181 (16%) were admitted to hospital. Older pedestrians ( $\geq 70$  yrs) had a higher hospital admission rate (78/303; 27%) compared to younger ones (<70 yrs: 103/805; 13%). Collision with motor vehicles (MVCs) resulted in only 25% of pedestrian injuries while fall (or tripping) accounted for about 72%. MVC related injuries were more common in younger pedestrians (29% vs 13%) whereas fall related injuries occurred more in older pedestrians (85% vs 67%). The most commonly sustained injuries among the fallers were abrasions followed by fractures. **Conclusion:** Police crash reports (which capture only MVC related pedestrian injuries) or hospital admission data (which miss those who are treated and released from ED) do not capture all cases of pedestrian injury. ED visit data provides a more realistic count of pedestrian injuries. More pedestrian injuries are caused by falls than by MVCs and policymakers should pay more attention to fall prevention strategies for older pedestrians outside their home environment. **Keywords:** pedestrian, road trauma

#### P024

##### **Physician reporting of medically unfit drivers: knowledge, attitudes, and practice**

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**Introduction:** Medical conditions that impair perception, cognition or motor skills may make people unfit to drive. Reporting unfit drivers to licensing authorities is seen by many as a public health obligation. This study investigates physician knowledge, attitudes and practice around the management of medically unfit drivers. **Methods:** We used an online survey to explore physician knowledge of fitness to drive issues and their attitudes and practice with regard to counselling and reporting unfit drivers. Email invitations to participate in the survey were sent to all physicians in BC through *DoctorsofBC* and to all emergency physicians (EPs) in the UBC Department of Emergency Medicine.