

patients with cellulitis or erysipelas. Ceftriaxone was chosen for most patients receiving parenteral antibiotics, but it may not have been the most effective antibiotic in some cases. Overuse of antibiotics is common, and we believe medication choice should be justified based on disease severity, spectrum of activity, and regional antibiotic resistance patterns, among other factors. In conclusion, we found that emergency physicians could more closely align management plans with current guidelines to improve management of uncomplicated infection and reduce unnecessary administration of parenteral antibiotics.

**Keywords:** antibiotics, cellulitis, erysipelas

#### P088

##### **Emergency department utilization of point-of-care ultrasound in the assessment and management of shock**

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**Introduction:** Recent studies have shown that point of care ultrasound is a valuable tool in the assessment and management of shock in the Emergency Department (ED). Despite proven utility, data is limited on the current utilization and quality assurance of POCUS in ED management of shock. The aim of this study was to determine the rate of POCUS use, characterize data collection methods and determine rate of quality assurance in both the ED and Intensive Care Unit (ICU) of a tertiary care academic center. **Methods:** The study included all patients who visited the ED from Jan-Jun 2015 that were transferred to the ICU, and were in shock, as determined by sBP <90, diagnostic code or vasopressor use. Patient charts, as well as wirelessly archived ultrasound studies were reviewed to determine which patients had POCUS performed, and how the results were recorded. By reviewing formal worksheets archived online, it could be determined if a management change was recommended, if studies were over-read for quality assurance and if improvement was recommended to image acquisition or interpretation. **Results:** Both departments used POCUS in roughly half of patients presenting in shock (53% ED, 41% ICU) with no statistical difference in usage ( $\Delta 12$ , 95% CI -0.01 to 0.25;  $p = 0.06$ ). Most ED studies (87%), had some form of documentation either on paper or online, however few (9%) had a formal worksheet completed. In comparison 71% of ICU studies had a worksheet. There was no difference in the number of performed scans that were saved electronically (66% ED vs 71% ICU;  $\Delta 5\%$ , 95%CI -0.13 to 0.21;  $p = 0.60$ ). In the ICU the majority (77%) of the formal reports recommended a management change as a direct result of scan findings. Furthermore, of worksheets submitted for quality assurance (88%), over half the reviews (55%) suggested an improvement in image acquisition or interpretation. **Conclusion:** To our knowledge, our study is the first to demonstrate that POCUS is only utilized in about half of the shock cases in ED and ICU. Given that the majority of the formally reported studies in the ICU that were over-read for quality assurance found areas for potential improvement and given that the majority of ED studies were reported informally, it stands to reason that POCUS operators in the ED could benefit from a formalized quality assurance program. Future studies should explore potential barriers to implementation of such a program. **Keywords:** point of care ultrasound, shock, critical care

#### P089

##### **Does the use of ultrasound improve diagnosis during simulated trauma scenarios?**

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**Introduction:** Point of care ultrasound (US) is a key adjunct in the management of trauma patients, in the form of the extended focused assessment with sonography in trauma (E-FAST) scan. This study assessed the impact of adding an edus2 ultrasound simulator on the diagnostic capabilities of resident and attending physicians participating in simulated trauma scenarios. **Methods:** 12 residents and 20 attending physicians participated in 114 trauma simulations utilizing a Laerdal 3G mannequin. Participants generated a ranked differential diagnosis list after a standard assessment, and again after completing a simulated US scan for each scenario. We compared reports to determine if US improved diagnostic performance over a physical exam alone. Standard statistical tests ( $\chi^2$  and Student t tests) were performed. The research team was independent of the edus2 designers. **Results:** Primary diagnosis improved significantly from 53 (46%) to 97 (85%) correct diagnoses with the addition of simulated US ( $\chi^2 = 37.7$ , 1df;  $p = <0.0001$ ). Of the 61 scenarios where an incorrect top ranked diagnosis was given, 51 (84%) improved following US. Participants were assigned a score from 1 to 5 based on where the correct diagnosis was ranked, with a 5 indicating a correct primary diagnosis. Median scores significantly increased from 3.8 (IQR 3, 4.9) to 5 (IQR 4.7, 5;  $W = 219$ ,  $p < 0.0001$ ). Participants were significantly more confident in their diagnoses after using the US simulator, as shown by the increase in their mean confidence in the correct diagnosis from 53.1% (SD 22.8) to 83.5% (SD 19.1;  $t = 9.0$ ;  $p < 0.0001$ ). Additionally, participants significantly narrowed their differential diagnosis lists from an initial medium count of 3.5 (IQR 2.9, 4.4) possible diagnoses to 2.4 (IQR 1.9, 3;  $W = -378$ ,  $p < 0.0001$ ) following US. The performance of residents was compared to that of attending physicians for each of the above analyses. No differences in performance were detected. **Conclusion:** This study showed that the addition of ultrasound to simulated trauma scenarios improved the diagnostic capabilities of resident and attending physicians. Specifically, participants improved in diagnostic accuracy, diagnostic confidence, and diagnostic precision. Additionally, we have shown that the edus2 simulator can be integrated into high fidelity simulation in a way that improves diagnostic performance.

**Keywords:** point of care ultrasound (PoCUS), trauma, simulation

#### P090

##### **Electronic invitations received from predatory journals and fraudulent conferences: a 6-month young researcher experience**

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**Introduction:** Predatory publishing is a poorly studied emerging threat to scientists. Junior researchers are preferred targets as they are under academic pressure to publish but face high rejection rates by many medical journals. **Methods:** All electronic invitations received from predatory publishers and fraudulent conferences were collected over a 6-month period (28<sup>th</sup> April to 27<sup>th</sup> October 2016) following the first publication of a junior researcher as a corresponding author. Beall's list was used to identify predatory publishers and James McCrostie's criteria to assess if a conference should be considered as predatory. The content of electronic invitations was analyzed and is presented with descriptive statistics. **Results:** A total of 162 electronic invitations were received during the study period. Seventy-nine were invitations to submit a manuscript. Few invitations disclosed information related to publication fees (9, 11.4%) or mentioned any publication guidelines (21, 26.6%). Most invitations reported accepting all types of manuscripts (73, 92.4%) or emphasized on a deadline to submit (62, 78.4%). These invitations

came from 22 different publishers lead by OMICS with 27 invitations (34.2%). Seventy-two invitations to be a speaker (55, 73.4%) or attend (17, 23.6%) a predatory conference were received. These conferences were held most frequently in the USA (25, 34.7%), United Kingdom (15, 20.8%) or United Arab Emirates (8, 11.1%) with only eight mentioning registration fees (11.1%). Forty-one conferences (57.0%) were unrelated to the author's affiliations or research interests. Finally, five invitations to be a journal's guest editor, five invitations to become a member of a journal editorial board and one invitation to contribute to the creation of a new journal were received. **Conclusion:** Young researchers are frequently exposed to predatory publishers and fraudulent conferences. An electronic invitation was received almost daily following the first publication as a corresponding author. Academic institutions worldwide need to acknowledge and educate young researchers of this emerging problem.

**Keywords:** predatory journal, predatory conference, young researcher

#### P091

##### Evaluation of pain management in medical transfer of trauma patients by air

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**Introduction:** Medical transport services are essential in the regionalization of trauma care. Given the limited number of designated trauma centers, transport times can be prolonged, with patient care managed by paramedics for the duration of their transfer. Pain management is a paramount component, but oligoanalgesia can occur. The primary objective of this study was to evaluate pain management practices during transport of trauma patients by air. **Methods:** We conducted a 12-month review of ORNGE electronic paramedic records. ORNGE is the exclusive provider of air and land transport in Ontario, Canada. Cases from 1 January 2015 to 31 December 2015 were screened. Patients were identified according to inclusion ( $\geq 18$  years old requiring transportation to designated trauma center) and exclusion criteria (GCS  $< 14$ ; intubation; accompanied by a nurse or physician). Information was collected in a standardized, piloted data form used by a single trained data extractor. Demographics, injury description, and transportation parameters were recorded. Outcomes included pain assessment according to changes on a 10-point numeric rating scale (NRS), patterns of analgesia administration, and analgesia-related adverse events (AEs). Results were reported as mean, (standard deviation), [range], or percentage. **Results:** Of 600 potential records, 372 patients met our inclusion criteria with the following characteristics: age 47.0 [19-92] years; 70.4% male; 97.0% blunt injury. Duration of transport was 82.4 (46.3) minutes. Pain was initially assessed in 90.0% of patients. Overall, NRS at baseline was 4.9 (2.8). Of the 62.4% who received analgesia, NRS at baseline was 5.9 (2.5). Fentanyl was most commonly administered (78.5%) at 44.3 [25-60] mcg. NRS after the first dose of analgesia decreased by 1.1 (1.6) points. A total of 73.7% of patients received further analgesia, equal to 2.4 [1-19] additional doses. While 23.4% of patients had no change in NRS after the first dose of analgesia, subsequent doses resulted in no change in NRS in over 65% [65.4-71.3] of patients. A total of 43 AEs (6.7%) were recorded after 638 doses of analgesia, and the most common AE was nausea (39.5%). **Conclusion:** The majority of patients were assessed for pain. Although the first analgesia administration had minimal effect on NRS, subsequent doses appeared to have even less of an impact. AEs were infrequent.

**Keywords:** transport, analgesia, pain

#### P092

##### Exercise prescription in the emergency department: patient perceptions

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**Introduction:** The positive health outcomes of exercise have been well-studied, and exercise prescription has been shown to reduce morbidity in several chronic health conditions. However, patient attitudes around the prescription of exercise in the emergency department (ED) have not been explored. The aim of our pilot study is to explore patients' willingness and perceptions of exercise being discussed and prescribed in the ED. **Methods:** This study is a survey of patients who had been previously selected for exercise prescription in a pilot study conducted at a tertiary care ED. This intervention group were given a standardized provincial written prescription to perform moderate exercise for 150 minutes per week. Participants answered a discharge questionnaire and were followed up by a telephone interview 2 months later. A structured interview of opinions around exercise prescription was conducted. Questions included a combination of non-closed style interview questions and Likert scale. Patients rated prescription detail, helpfulness and likelihood on a Likert scale from 1-5 (1 being strongly disagree and 5 being strongly agree). Median values (+/-IQRs) are presented, along with dominant themes. **Results:** 17 people consented to exercise prescription and follow up surveys. 2 were excluded due to hospital admission. 15 participants were enrolled and completed the discharge survey. Two-month follow up survey response rate was 80%. Patients rated the detail given in their prescription as 5 (+/-1). Helpfulness of prescription was rated as 4 (+/-2). Likelihood to continue exercising based on the prescription was rated as 4 (+/-2). 11/12 participants felt that exercise should be discussed in the Emergency Department either routinely or on a case-by-case basis. 1 participant felt it should not be discussed at all. **Conclusion:** Our study demonstrates that most patients are open to exercise being discussed during their Emergency Department visit, and that the prescription format was well-received by study participants.

**Keywords:** exercise prescription, health promotion, behaviour

#### P093

##### Sound check: quality in point of care ultrasound in rural and regional Saskatchewan through participatory action research

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**Introduction:** In the rural setting, Point-of-Care Ultrasound (POCUS) can dramatically impact rural acute care. In Saskatchewan, many rural clinicians have undertaken POCUS training, but widespread integration into rural emergency care remains elusive. We aimed to explore the obstacles limiting adoption and their possible solutions to inform the development of a robust and innovative rural POCUS program in Saskatchewan. **Methods:** We conducted a mixed methods Participatory Action Research (PAR) study using surveys and focus groups. Our rural co-investigators identified 4 key realms relating to rural POCUS use: equipment, access to training, quality assurance (QA), and research. These guided the design of an online survey sent out to rural clinicians throughout Saskatchewan. Results of the survey informed the development of three approaches (centralized, hub-and-spoke, and decentralized) to training, QA, and research which were discussed at focus group sessions held at Saskatchewan's Emergency Medicine Annual Conference (Regina, SK, 2016). The focus groups were facilitated by the study