were employed. **Results:** Sixteen (16) staff members participated in interviews and 40 participated in small focus group discussions. Data analysis revealed workplace violence and personal health risks have been normalized as expected, acceptable features of everyday life at work in the ED given that patients are perceived to be sick people in need of help that ED staff are trained for and prepared to provide. In contrast, weapons and active shooters challenge the boundaries of professional responsibility and readiness to respond to Code Silver is perceived by staff as a fallacy. **Conclusion:** Knowledge from this study gives us crucial insight into important areas for targeted training and opportunities for knowledge translation on the topic of implementing Code Silver in EDs across the country. Future interventions must include how to overcome normalization of workplace violence in the ED setting and negotiating competing professional obligations during crisis situations. Attention to these are crucial if we are to truly keep our staff safe during these traumatic events.

Keywords: workplace violence, code silver, qualitative research

P026
Opioid use and dependence three months after an emergency department visit for acute pain

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Introduction: Most studies evaluating prescription opioid dependence or misuse are retrospective and are based on prescription filling rates from pharmaceutical databases. These studies cannot evaluate if opioids are really consumed nor differentiate if used for a new pain, chronic pain, or for misuse/dependence. The aim of this study was to assess the opioid consumption in emergency department (ED) patients three months after discharge with an opioid prescription. **Methods:** This prospective cohort study was conducted in the ED of a tertiary care centre with a convenience sample of patients aged 18 years and older, recruited 24/7, who consulted and were discharged for an acute pain condition (2 weeks). We excluded patients who: did not speak French or English, were using opioid medication prior to their ED visit, with an ED stay >48 hours, or suffering from cancer or chronic pain. Three months post-ED visit, participants were contacted by phone for a structured interview on their past two-week opioid use, their reasons for consuming them, and also answered the Rapid Opioid Dependence Screen (RODS) questionnaire. **Results:** In the 524 participants interviewed at three months (mean age ± SD: 51±16 years, 47% women), 44 (8.4%) patients consumed opioids in the previous two weeks. Among those, 72% consumed opioids for their initial pain, 19% for a new unrelated pain, and 9% for another reason. In this entire cohort, only five patients (1%) tested positive to opioid dependence from the RODS test. The low dependence incidence could be affected by a social desirability bias. **Conclusion:** This study suggests that opioid use at 3-month, for patients initially treated for acute pain, is associated with opioid dependency in 1% or possible misuse in only 9%. Additional prospective studies using multiple methods to measure opioids consumption, misuse, and dependence are needed.

Keywords: opioids, dependence, misuse

P027
A descriptive needs-based assessment of paramedic continuing education

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Introduction: Objective: To identify self-perceived knowledge deficits of paramedics, barriers to training and desired methods of self-directed continuing education. **Methods:** A written 58 question survey was delivered to all 1262 paramedics under the jurisdiction of a single base-hospital in Ontario, Canada. Respondents were asked to select deficit, no deficit or not applicable from a 37-point, anatomic systems-based list. They were then asked to identify from a 15-point list which educational modalities they would choose to address any knowledge deficits. Finally, they were asked which factors they took into consideration when choosing their self-directed continuing education. **Results:** Seven hundred forty-six of 1262 paramedics (59.11%) completed the surveys. Of these respondents, 82 (10.99%) were advanced care paramedics, while 664 (89.01%) were primary care paramedics. Of the 645 who responded with their primary geographical setting: 136 (21.09%) listed a primary urban practice, 126 (19.53%) listed a primary rural practice and 287 (44.50%) reported a split urban and rural practice. The most common perceived deficits (respondent number, percentage); were electrolyte disturbance (418, 56.03%), neonatal resuscitation (386, 51.74%), pediatric respiratory disorder (381, 51.07%), arrhythmia (377, 50.53%), and pediatric cardiac arrest (317, 42.49%). The top 5 educational opportunities they were most likely to choose included online module (464, 62.20%), in-class lecture (423, 56.70%), web-based review (403, 54.02%), webinar (301, 40.35%) and peer consult (237, 31.77%). The top 3 barriers to choosing continuing education were work scheduling (479, 64.21%), location/ease of attending (382, 51.21%), and cost (305, 40.88%). **Conclusion:** Paramedics in this base hospital system identified pediatric critical care situations, electrolyte abnormalities and cardiac arrhythmia as self-perceived deficits. The most commonly selected educational opportunities included online learning, in-person training and peer consult. These preferred modalities are consistent with the identified barriers of work scheduling, ease of attending and cost. Targeted educational needs based assessments can help ensure that appropriate topics are delivered in a fashion that help overcome identified barriers to self-directed learning.

Keywords: paramedic, prehospital, education

P028
Self-directed learning in advanced care paramedics: perceived deficits and completed activities

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Introduction: In Ontario, Advanced Care Paramedics (ACPs) are required to perform a minimum of 24 educational credits per year of Continuing Medical Education (CME). Of these 24 credits, 12 are chosen by the paramedic, while 12 credits are mandated by the Base Hospital. The combined mandatory and optional CME frame is used so paramedics can target their personal needs appropriately, while ensuring new medical directives and global knowledge deficits identified by Quality Assurance (QA) means can be addressed by the Base Hospital. Objective: To determine if there is a difference between what ACPs identify as their knowledge deficits and what CME they complete. **Methods:** Methods: Request for participation in a written survey was delivered to all ACPs in an Ontario Base Hospital, prior to the CME cycle for the year. Respondents were asked to identify deficits from a 37-point, organ systems-based list, with free-text option for any deficits not itemized. Following the annual cycle, CME credits were evaluated by the Regional Base Hospital education coordinator, and Base Hospital medical directors for content. The deficits identified prior to the CME cycle were then compared to the CME attended for each respondent. In

order to best represent the individual ACP response to their perceived deficits, a percentage of deficits identified and addressed was chosen. Respondents were not aware that their responses would be compared to the credits obtained for the year, to minimize bias in CME selection. **Results:** Of the 140 ACPs in the region, 42 (30%) completed the survey. From the 37-point list, the median number of perceived deficits identified was 7.00 (IQR 3.00-10.00). The median number of CME events that addressed perceived deficits was 2.00 (IQR 1.00-3.00). The median number of perceived deficits addressed by either paramedic-chosen or mandatory CME were identical at 1.00 (IQR 0.00-2.00). The percentage of perceived deficits identified and addressed via CME was 35.07% (range 0-100%). Paramedic-chosen CME covered 22.48% (range 0-100%) of perceived deficits, while mandatory CME covered 20.14% (range 0-100%) of perceived deficits. **Conclusion:** In the current system, only 35.07% of perceived deficits were addressed through mandatory and paramedic-chosen CME. Further information regarding barriers to paramedics obtaining CME that meets their perceived deficits needs to be elucidated.
Keywords: paramedic, prehospital, education

P029

A descriptive analysis of defibrillation vector change for prehospital refractory ventricular fibrillation

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Introduction: Patients in ventricular fibrillation (VF) who do not respond to standard Advanced Cardiac Life Support treatments are deemed to be in refractory VF (rVF). The ideal prehospital treatment for patients with rVF remains unknown. Double sequential external defibrillation (DSED) has been proposed as a viable option for patients in rVF. Although the mechanism by which DSED terminates rVF remains unknown, one theory is that the change in defibrillation vector that occurs may contribute. The objective of this study was to describe clinical outcomes for patients presenting in rVF during out-of-hospital cardiac arrest (OOHCA) for those who underwent vector change defibrillation, compared to those who received standard treatment. **Methods:** This was a retrospective chart review of adult (18 years) patients presenting in rVF during OOHCA over 15 months beginning in March 2016. Patients who underwent vector change defibrillation had a change in pad position (anterior-anterior to anterior-posterior) after 3 or more consecutive shocks. Termination of rVF was defined as the absence of VF after a vector change or standard shock during the next rhythm analysis. **Results:** There were 372 OOHCA, with 25 (6.7%) patients meeting our definition of rVF. Of these, 16 (64.0%) patients (median age 62 years, 81.3% male) had vector change after a median (IQR) of 3 (3.0-4.0) paramedic defibrillation attempts. Median (IQR) time to vector change defibrillation was 8.8 (7.1-11.1) minutes. Eight (50%) patients had termination of rVF after the first vector change shock, 6 (37.5%) had prehospital return of spontaneous circulation (ROSC) and 5 (31.3%) patients survived to hospital discharge. Of the 9 rVF patients who did not have vector change, median age was 63 years and 88.9% were male. The median (IQR) number of defibrillations within this group was 5 (4.5-7.0). No patients converted after the 4th defibrillation. Prehospital ROSC was achieved in 3 (33.3%) patients and 5 (55.5%) patients were transported while in rVF . Three patients (33.3%) survived to hospital discharge. **Conclusion:** This is preliminary evidence that vector change defibrillation in patients with rVF may result in VF termination. A randomized controlled trial is warranted to test whether or not vector change has a role in the termination of rVF.
Keywords: ventricular fibrillation, prehospital, vector change

P030

Role of scribes in emergency care in the Saskatoon health region

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Introduction: Increasingly, hospitals are adopting electronic charting systems. Recent literature suggests that physicians are spending roughly 2:1 hours on charting as compared to actual patient care raising questions as to whether manual electronic charting is the best use of scarce physician resources. To counter these effects, some hospitals have introduced scribes into their departments. A medical scribe is a person, or paraprofessional, who specializes in charting physician-patient encounters in real time. In this pilot study, we assessed the impact of having a scribe on the mental and physical fatigue, patient and healthcare-team engagement, and overall work satisfaction of emergency physicians at an urban emergency department (St. Paul's Hospital, Saskatoon). **Methods:** Three research participants (emergency physicians) were recruited to the study. Each participant completed a typing test to determine typing skills. The student researcher then provided scribe services for each participant for two shifts. The scribe charted physician-patient interactions in real time and also completed order sets, wrote orders, imaging requisitions, and prescriptions. Physicians completed surveys after each shift with the scribe as well as after 2 shifts without a scribe (for a total of 12 shifts in the study, 6 with the intervention). Physicians were asked to rate their mental and physical fatigue, enjoyment of work, and impact on patient/team engagement on a 10-point Likert scale. Results from the questionnaires were analyzed to determine individual and group mean responses. Given the small sample size, no further statistical calculations were completed. **Results:** Typing test results (in words per minute) were as follows: Scribe 93, Physician A 64, Physician B 40, Physician C 25. In terms of both mental and physical fatigue post shift, all 3 participants recorded being less fatigued after working shifts with a scribe. Mean group scores were as follows: mental fatigue decreased by 33%, physical fatigue decreased by 23%. Physicians work enjoyment improved by 10%. Team and patient interaction did not seem impacted by the intervention. **Conclusion:** It appears that regardless of typing skills, all physician participants noted a measurable benefit from having a scribe on shift. This suggests that off-loading documentation to the scribe has a positive effect on mental and physical endurance. These results warrant further investigations.
Keywords: quality improvement and patient safety, scribes in emergency care

P031

An online video analysis study of out of hospital cardiac arrest: patterns in presentation and opportunities for machine learning

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Introduction: Cameras are a common in public spaces. London England is estimated to have 500,000 and Beijing China over 800,000. Smartphone penetration exceeds 60% of the population in 20 countries worldwide. Hundreds of sudden cardiac arrests are captured on video annually. This study searches publically available cardiac arrest videos with two objectives i) describe sudden cardiac arrest behaviour and ii) explore potential opportunities for machine learning. **Methods:** The search terms: "sudden death," "heart attack," "cardiac arrest" and "public death" were used. English sources included: Youtube.com, Dailymotion, vimeo.com, vidamax.com, LiveLeak.com and documentingreality.com. Whereas, iqiyi.com, youku.com, le.com, fun.tv,