

Introduction: Electronic health record (EHR) implementation can be associated with a slowdown in performance and delayed return to pre go-live productivity. The objective of this study is to describe the impact of a go-live strategy including diversion, public advertising of the go-live, and extra physician staffing to mitigate productivity loss. **Methods:** Lions Gate Hospital (LGH), an urban community hospital and rural referral centre with 250 beds and 65,000 annual ED visits went live with Cerner HER (Cerner Corporation, Kansas, MO) on April 28, 2018. The implementation included complete electronic ordering and electronic physician documentation. We compared patients seen per hour, time to physician (TTMD), ED length of stay (EDLOS), patients per hour left without being seen (LWBS), and admission rate (AR) for the 6 weeks prior to implementation (Pre), 2 weeks during (Imp), and 6 weeks after (Post) for LGH and a control hospital (Richmond Hospital – comparable in size/acuity) for the same periods. Medians were compared using the Mann-Whitney test for patients/hour, EDLOS and TTMD, and chi-square for AR and LWBS. **Results:** Patients/hour seen went from 2.1/hour in the pre phase, but dropped to 1.7/hr in the 2 week period following implementation ($P < 0.05$). During weeks 2-8 post implementation, 2,3 patients per hour were seen ($P = 0.38$ compared to Pre phase). At the control hospital, patients per hour were comparable across all time periods ($P_s > 0.3$). Median time to physician was 54, 56, and 54 minutes at LGH for the Pre, Imp, and Post time periods ($P_s > 0.3$). Median EDLOS was 184, 196, and 184 minutes in the pre, Imp, and post phases (P Imp versus pre = 0.11; Pre versus post = 0.54). LWBS rate was 1.3%, 2.9, and 2.4% (P_s for Imp and Post versus pre < 0.05) at LGH, but the pattern was similar for the control hospital (2.9%, 4.1% and 4.0% $P_s < 0.05$). There was no significant change in ambulance arrivals or admission rate at either hospital ($P_s > 0.2$). **Conclusion:** A deliberate implementation strategy that focuses on ED physician upstaffing and visit diversion can smooth the impact of the implementation of an EHR so that patient care is not impacted significantly. Return to normal productivity occurred by 8 weeks post go-live. We demonstrate a strategy that may support easier implementation at other sites.

Keywords: physician productivity, electronic health record, patient volumes

MP04

rEDirect: safety and compliance of an emergency department diversion protocol for mental health and addictions patients

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Introduction: Transportation of patients better served at an alternative destinations (diversion) is part of a proposed solution to emergency department (ED) overcrowding. We evaluated the pilot implementation of the “Mental Health and Addiction Triage and Transport Protocol”. This is the first Canadian diversion protocol that allows paramedics to transport intoxicated or mental health patients to an alternative facility, bypassing the ED. Our aim was to implement a safe diversion protocol to allow patients to access more appropriate service without transportation to the emergency department. **Methods:** A retrospective analysis was conducted on patients presenting to EMS with intoxication or psychiatric issues. Study outcomes were protocol compliance, determined through missed protocol opportunities, noncompliance, and protocol failure (presentation to ED within 48 hours of appropriate diversion); and protocol safety, determined through patient morbidity (hospital admission

within 48 hours of diversion) and mortality. Data was abstracted from EMS reports, hospital records, and discharge forms from alternative facilities. Data was analyzed qualitatively and quantitatively. **Results:** From June 1st, 2015 to May 31st, 2016 Greater Sudbury Paramedic Services responded to 1376 calls for mental health or intoxicated patients. 241 (17.5%) met diversion criteria, 158 (12.9%) patients were diverted and 83 (4.6%) met diversion criteria but were transported to the ED. Of the diverted patients 9 (5.6%) represented to the ED <48rs later and were admitted. Of the 158 diversions, 113 (72%) were transported to Withdrawal Management Services (WMS) and 45 (28%) were taken to Crisis Intervention (CI). There was protocol noncompliance in 77 cases, 69 (89.6%) were due to incomplete recording of vital signs; 6 (10.3%) were direct protocol violations of being transferred with vital signs outside the acceptable range. **Conclusion:** The Mental Health and Addiction Triage and Transport Protocol has the potential to safely divert 1 in 6 mental health or addiction patients to an alternative facility.

Keywords: emergency medical service, mental health, quality improvement and patient safety

MP05

Diagnostic accuracy of point of care ultrasound in undifferentiated hypotension presenting to the emergency department: a systematic review

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Introduction: Undifferentiated hypotension remains one of the most life-threatening presentations to emergency departments (ED) around the world. An accurate and rapid initial assessment is essential, as shock carries a high mortality with multiple unique etiologies and management plans. Point of care ultrasound (PoCUS) has emerged as a promising tool to improve these diagnostic and management challenges, yet its reliability in this setting remains unclear. **Methods:** We performed a systematic review of Medline, EMBASE, CINAHL, Cochrane, and clinicaltrials.gov databases from inception to June 8, 2018. Databases were reviewed by two independent researchers and all languages were included. The methodological quality of included studies were evaluated using the Quality Assessment of Diagnostic Accuracy Studies (QUADAS-2) tool. Our primary outcome was diagnostic accuracy of PoCUS in hypotension, with secondary outcomes including patient outcomes and changes to management. **Results:** Our literature search revealed 5345 articles after duplicates were removed, leaving 235 articles for full article review. Following full article review, 9 studies remained and were included in the systematic review. There were 2 randomized control trials, 6 prospective cohort trials, and 1 retrospective cohort trial. For our primary outcome of diagnostic accuracy, eight studies were included; we extracted Kappa values ranging from 0.70 to 0.971, pooled sensitivity ranging from 69% to 88%, and pooled specificity ranging from 88% to 96%. Four studies reported on management change including results reporting shorter time to disposition, change in diagnostic test ordering (18% to 31%), change in consultation (13.6%), change in admission location (12%) and change in management plan (25% to 40%). Only one study reported on patient outcomes, which revealed no survival or length of stay benefit. **Conclusion:** When assessing for the diagnostic accuracy of PoCUS in the setting of undifferentiated hypotension presenting to the emergency department, we found fair consistency between PoCUS and final diagnosis with high Kappa values, fair to good pooled sensitivities, and good to excellent specificities.