

Keywords: nausea and vomiting, cannabinoid hyperemesis syndrome, cannabis

P061

Mobile digital access to a web-enhanced network (mDAWN): mHealth for type-2 diabetes self-management and implications for emergency medicine

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Introduction: Diabetes mellitus affects over 2.7 million Canadians, with 90% being Type-2 diabetes (CDA 2010). Complications of diabetes are major causes for emergency department (ED) visits, adversely affecting patients' health and costing the health system. Improving diabetes self-management can lead to avoidance of ED visits and revisits after discharge. Recent developments in mobile Health (mHealth), such as home health monitoring with sensors, social media, and text messaging, have shown promise in supporting patients in chronic disease self-management. This project tested the feasibility of these tools to support self-management for people with type-2 diabetes. **Methods:** Forty-three people with type-2 diabetes took part in a three month program that provided: health information via text messages, online access to curated resources and a facilitated discussion board, and access to wireless monitoring devices. Participants were outfitted with a wireless blood pressure monitor and weight scale, standard blood glucose monitor, and online access to their physiological data. Data collected included pre and post-self-reported health measures, tracking of physiological changes, website and discussion board use, cost survey, and interviews. **Results:** Participants reported significantly less health distress and an increase in diabetes empowerment. HbA1c levels decreased from an average of 7.41 to 6.77. Average weight and blood glucose also decreased over the study period. Interview and cost survey findings revealed most participants felt mDAWN provided good value; 78% expressed interest in continuing all or parts of the program. Interview findings revealed that participants developed self-management routines, and experienced increased self-awareness of, and ownership over, their health achievements. **Conclusion:** mHealth tools provided participants with their own physiologic information, connection with peers, and evidence informed advice. Participants highly valued this combination and improved their self-management and health outcomes. Equipping patients with similar tools for self-management post ED discharge holds great promise for decreasing revisits and improving health outcomes. This study has stimulated a clinical trial now underway to evaluate the effectiveness of home monitoring to facilitate the transition of patients between acute care and community settings.

Keywords: technology, diabetes, monitoring

P062

Impact of pharmacist-led medication review in the emergency department on downstream health services utilization

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Introduction: Adverse drug events are a leading cause of Emergency Department (ED) visits and unplanned admissions. Up to 50% are misdiagnosed in the ED and on hospital wards leading to treatment delays. Our main objective was to evaluate the effect of pharmacist-led medication review in high-risk ED patients on the number of days in-hospital. Our hypothesis was that early pharmacist-led medication review may reduce the number of days spent in-hospital. **Methods:** We

evaluated a quality improvement program that was implemented in three British Columbian EDs. During a 12-month period, nurses identified consecutive patients at high-risk for adverse drug events using a clinical decision rule integrated into triage algorithms. Clinical pharmacist research assistants enrolled consecutive eligible high-risk patients, and systematically allocated them to medication review or control. In the intervention group, pharmacists collected best possible medication histories, reviewed medications for appropriateness and adverse drug events, and communicated review results to patients and physicians. In the control group, nurses collected best-possible medication histories, and physicians referred patients to the ED pharmacist as needed. Ongoing care was determined by physicians who were not blinded to group allocation, but were unaware of the evaluation. We assessed outcomes using administrative health databases. The primary outcome was the number of days spent in-hospital over 30 days. We used inverse propensity score weighted regression modeling to assess the relationship between medication review and health outcomes. The sample size was limited by the duration of the quality improvement program. **Results:** Among 10,807 patients 6,416 received medication review in the ED and 4,391 usual care. The groups were balanced in terms of baseline characteristics. The median number of hospital days was 0.48 days (95% confidence interval [CI] 0.00-0.96) less in the medication review group compared to usual care ($p = 0.058$). The difference was 0.60 days (95% CI 0.06-1.17; $p = 0.03$) less among patients under 80 years old. There was no effect on ED revisits, number of admissions and readmissions, or mortality. **Conclusion:** Medication review was associated with a trend in reduced hospital-bed utilization. While limited by lack of randomization, our evaluation suggests that ED pharmacists may impact subsequent resource utilization.

Keywords: adverse drug event, patient safety, medication review

P063

Is triage score a valid measure of emergency department case mix?

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Introduction: In the Canadian province of Alberta, (pop. 4,227,879), the publicly-funded health care system uses the five level Canadian Triage and Acuity Scale (CTAS), to prioritize emergency department (ED) patients. Health system decision makers and policy makers currently use CTAS as an isolated metric to describe ED patient case-mix and to compare EDs. **Methods:** Using the National Ambulatory Care Reporting System dataset, we reviewed the distribution of patient CTAS scores and the proportion of inpatient admissions by CTAS level for the 16 highest volume Alberta hospital EDs during FY 2013/2014. **Results:** Collectively, the EDs received 1,027,976 patients, with 1%, 18%, 44%, 30% and 7% classified as CTAS 1-5, respectively. The proportions by CTAS level ranged from 0.2% to 2.8% in CTAS 1; 3.3% to 33.3% in CTAS 2; 29.1% to 54.1% in CTAS 3; 16.7% to 49.0% in CTAS 4; and 3.1% to 12.3% in CTAS 5. Admission proportions by CTAS level ranged from 43.9% to 75.2% in CTAS 1; 18.9% to 42.1% in CTAS 2; 5.4% to 24.7% in CTAS 3; 0.8% to 9.3% in CTAS 4; and 0.1% to 9.1% in CTAS 5. **Conclusion:** Inter-hospital differences in CTAS acuity distributions reflect triage variability and real differences in case-mix. Wide variation in admission proportions by CTAS level reflects differing admission thresholds between sites, but also suggest intra-level differences in patient severity, comorbidity and complexity. Triage levels cannot be used as an isolated metric to describe and