

collaborate with community and government partners to ensure programs meet patient needs; 3) address provider attitudes and knowledge gaps through dedicated training; and 4) establish guidelines to identify patients who are at risk of opioid overdose, and engage at-risk patients to maximize THN acceptance. **Conclusion:** ED-based THN programs must be tailored to local community needs and available hospital resources. Innovative implementation strategies are needed to promote ED provider engagement, and reduce barriers to patient acceptance of THN in the ED. This scoping review highlights key considerations for ED-THN implementation that can guide EDs to establish new programs, or refine existing programs to maximize their effectiveness.

**Keywords:** naloxone, opioid overdose, scoping review

### LO25

#### Characteristics of frequent users of emergency departments in Alberta and Ontario, Canada: an administrative data study

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**Introduction:** Frequent users of emergency departments (EDs) are a diverse group of patients with a disproportionate number of ED presentations. This study aimed to compare sociodemographic and clinical characteristics of adult high system users (HSUs) and control groups in two provinces. **Methods:** Cohorts of HSUs were created for Alberta and Ontario by identifying the patients with the top 10% of ED presentations in the National Ambulatory Care Reporting System during April 2015 to March 2016. Random samples of patients not in the HSU groups were selected in each province as controls (4:1 ratio). Sociodemographic and presentation data (e.g., Canadian Triage and Acuity Scale [CTAS], disposition) were extracted and compared using separate logistic regression models. **Results:** In Alberta, 101,250 HSU patients made 686,918 ED presentations (median [med] = 5 interquartile range [IQR] 4,7 presentations per patient), compared with 401,923 controls who made 560,765 ED presentations (med = 1 IQR 1,2 per patient). HSUs were more likely to be female (odds ratio (OR) = 1.20 95% confidence interval (CI) 1.18,1.22), older (OR = 1.03 per 5y 95% CI 1.03,1.03), live closer to hospital (OR = 1.02 per 100km 95% CI 1.00,1.03), and be from the lowest income quintile (OR = 1.39 95% CI 1.37,1.42) than controls. In Ontario, 478,424 HSUs made 2,222,487 ED presentations (med = 4 IQR 3,5 per patient) and 1,714,037 controls made 2,114,070 ED presentations (med = 1 IQR 1,1 per patient). Ontario HSUs were also more likely to be female (OR = 1.13 95% CI 1.12,1.14), older (OR = 1.03 per 5y 95% CI 1.03,1.03), and from the lowest income quintile (OR = 1.41 95% CI 1.40,1.42) than controls, but were less likely to live closer to hospital (OR = 0.93 per 100km 95% CI 0.92, 0.93). Higher acuity was seen in Ontario (CTAS 1/2 vs. others OR = 1.05 95% CI 1.04,1.06) but not for Alberta (CTAS 1/2 vs others OR = 0.75, 95% CI 0.74,0.76). Discharges were less likely in the HSUs compared to controls (Alberta OR = 0.89 95% CI 0.88,0.90; Ontario OR = 0.65 95% CI 0.65,0.66). HSUs were more likely to leave without being seen (Alberta OR = 1.10 95% CI 1.07,1.13; Ontario OR = 1.37 95% CI 1.35,1.40) and against medical advice (Alberta OR = 1.47 95% CI 1.41,1.53; Ontario OR = 1.67 95% CI 1.63,1.71). **Conclusion:** HSUs were more likely to be female, older, and poorer than controls. Ontario HSUs had higher acuity than the other groups. Disposition

differed for HSUs and controls. Further study is required to identify ways to safely reduce ED utilization by HSUs.

**Keywords:** administrative data, frequent users

### LO26

#### The mean abnormal response rates of laboratory tests ordered in the emergency department: shooting percentage insights from a multicentre study

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**Introduction:** There is ongoing concern about the burden placed on healthcare systems by lab tests. Although these concerns are widespread, it is difficult to quantify the extent of the problem. One approach involves use of a metric known as the Mean Abnormal Response Rate (MARR), which is the proportion of tests ordered that return an abnormal result; a higher MARR value indicates higher yield. The primary objective of this study was to calculate MARRs for tests ordered between April 2014 and March 2019 at the four adult emergency departments (EDs) covering a metropolitan population of 1.3 million. Secondary objectives included identifying tests with highest and lowest MARRs; comparison of MARRs for nurse- and physician-initiated orders; correlation of the number of tests per order requisition to MARR; and correlation of physician experience to MARR. **Methods:** In total, 40 laboratory tests met inclusion criteria for this study. Administrative data on these tests as ordered at the four EDs were obtained and analyzed. Multi-component test results, such as from CBC, were consolidated such that an abnormal result for any component was coded as an abnormal result for the entire test. Repeat tests ordered within a single patient visit were excluded. Physician experience was quantified for 209 ED physicians as number of years since licensure. Analyses were descriptive where appropriate for whole-population data. Risk of bias was attenuated by the focus on administrative data. **Results:** The population dataset comprised 33,757,004 test results on 415,665 unique patients. Of these results, 30.3% were the outcomes of nurse-initiated orders. The 5-year MARRs for the four hospitals were 38.3%, 40.0%, 40.7% and 40.9%. The highest per-test MARRs were for BNP (80.5%) and CBC (62.6%), while the lowest were for glucose (7.9%) and sodium (11.6%). MARRs were higher for nurse-initiated orders than for physician-initiated orders (44.7% vs. 38.1%), likely due to the greater order frequency of high-yield CBC in nurse-initiated orders (38.6% vs. 18.1%). The number of tests per order requisition was inversely associated with MARR ( $r = -0.90$ ,  $p < 0.001$ ). Finally, the number of years since licensure was modestly but significantly associated with MARR ( $r = 0.28$ ,  $p < 0.001$ ). **Conclusion:** This is the first and largest study to apply the MARR in an ED setting. As a metric, MARR effectively identifies differences in test ordering practices on per-test and per-hospital bases, which could be useful for data-informed practice optimization.

**Keywords:** informatics, laboratory test, mean abnormal response rate

### LO27

#### Relevance of Choosing Wisely Canada non-emergency medicine specialty lists to emergency medicine practice

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**Introduction:** The Choosing Wisely Canada (CWC) initiative is dedicated towards optimizing patient care and reduce unnecessary