increase topical anesthetic use for peripheral intravenous line (PIV) placement for hospitalized pediatric patients from a mean of 11% to 40% by June 2019.

Methods The project utilized the Model for Improvement. An institutional clinical pathway and PIV order set were developed. Pre-checked orders for anesthetics were added to order sets. Visual reminders for anesthetic and pathway use were placed on IV carts. Run charts were posted weekly on daily management system boards on each medical-surgical floor, and this data was shared at daily nursing huddles, to increase awareness of performance. Nurse managers provided individual feedback to nurses. Nursing scripting examples of how to discuss PIV placement and anesthetics with patients and families were placed on IV carts.

Results Topical anesthetic use for PIV placement increased from a mean of 11% to 34%. Comfort measures during PIV placement increased from a mean of 6% to 13%. PIV procedures with documentation of placement attempts increased from a mean of 47% to 60%.

Conclusions This project has highlighted the importance of pain prevention for needle procedures and initiated culture change. We have nearly reached our goal and PDSA cycles are ongoing to further increase topical anesthetic use.

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IMPROVING INTERVENTION USE FOR OPIOID OVERDOSE THROUGH EMERGENCY DEPARTMENT ELECTRONIC MEDICAL RECORD WORK-AIDS

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Background Emergency Department (ED) visits for opioid overdose continue to rise. Our global aim is to implement evidence-based harm reduction practices in our large, academic ED, such as facilitating naloxone prescribing through the electronic medical record (EMR) and disseminating resources for outpatient treatment.

Objectives Increase the provision of naloxone prescriptions and community resources to patients at high-risk of opioid overdose upon ED discharge.

Methods To increase naloxone prescribing and provision of community resources to high-risk patients, a model for improvement methodology, a multi-disciplinary team, and prioritization of high-reliability interventions were used. Key drivers and interventions included: didactic lectures to providers, collation of community resources, real-time patient identification through a best practice advisory (BPA) in the EMR, prescriber order sets, and defaulting desired patient education materials (figure 1). Rates of naloxone prescribing and BPA-triggered order set use were tracked over time on statistical control charts (p-charts).

Results The average proportion of high-risk patients who received naloxone prescriptions increased from a baseline of 1.9% to 6.6% after didactic education sessions, and 21.7% after implementation of EMR-based interventions (8 points above centerline, respectively) (figure 2). Since its implementation, 16% of fired BPAs resulted in naloxone order set activation (monthly range: 9–25%).

Conclusions Our findings support that some emergency department providers are willing to prescribe naloxone to patients at risk for opioid overdose, and that prescribing is influenced by highly reliable work-aids built into EMR systems. The spread of similar technology to other care settings may be key to wider provider engagement in mitigating morbidity from opioid overdose.

Abstract 11 Figure 1 Key driver diagram

Abstract 11 Figure 2 Proportion of high-risk opioid users discharged from ED with naloxone prescriptions

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REDUCING PERI-OPERATIVE OPIOIDS IN AMBULATORY SURGERY – A QUALITY IMPROVEMENT PROJECT USING REAL-WORLD DATA

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Background The risk for adolescents developing persistent opioid use following surgery is 5%. Despite using multimodal analgesia and extensive regional anesthesia, 85% of our patients received opioids during and after surgery.

Objectives 1. Reducing opioids during and after surgery. 2. Maintain pain scores and post-operative analgesia requirements. 3. Maintain other outcome measures. 4. Accelerate Plan-Do-Study-Act (PDSA) cycle times.

Methods Teams completed multiple PDSA cycles, driven by real-world outcomes data, to reduce perioperative opioid administration. Clinical and operational measures, visualized as

Statistical Process Control (SPC) charts, assessed the impact of different tests of change. Key interventions were derived from evidenced based medicine. SPC charts were used to determine real-world effectiveness.

Results From Jan 2018 to June 2019 our team achieved a 96% absolute reduction in perioperative opioid use for surgical patients (see figure 1). Post-operative opioid administration went from 14% to 2% (see figure 2A). Post-operative nausea and vomiting (PONV) rate is now <0.001% (see figure 2B). Recovery pain scores and length of stay were unchanged (see 2c and 2d). Improvement cycle times were reduced from 2 years to 2 months.

Conclusions 50 million Americans have surgery each year, 2 million of which develop persistent opioid use. The risk of persistent opioid use increases if patients are still taking opioids on day 5 postoperatively. Leveraging real-world data and SPC charts, PDSA cycles were significantly reduced. This reduction in opioid use creates a safer surgical journey and could help curb the opioid epidemic.