Alberta Health Services | University of Alberta | Covenant Health

Edmonton Zone Medicine Quality Council
Partnerships in Action
Strategic Clinical Improvement Committee

Improving Timely Treatment of Adult Sickle Cell Anemia Patients Presenting with Vaso-Occlusive Pain Episodes at the University of Alberta Hospital Emergency Department

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DEFINE OPPORTUNITY

BACKGROUND

- Vaso-occlusive pain episodes (VOE) due to tissue ischemia and inflammation are the most common clinical manifestation of sickle cell disease (SCD) and constitute a primary reason for recurrent Emergency Department (ED) visits and/or hospitalizations for individuals with SCD.
- Current national and international guidelines recommend:
  - Administration of first dose of analgesia within 30 minutes of ED triage and/or 60 minutes of ED presentation.
  - Frequent monitoring and assessment of vital signs, pain scores, and sedation scale (RAAS), every 30 minutes for the first 2 hours, then every 1 hour if stable.
  - Escalation of opioid treatment (dose, route, frequency) if pain not optimally controlled (pain score > 6).

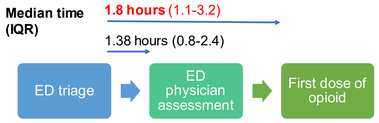
Benefits of Timely Management of VOE:
- ↓ Rates of admission/readmission to hospital
- ↑ Pain support
- ↑ Patient satisfaction
- Earlier identification of serious underlying disease/complications

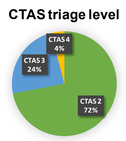
PROBLEM

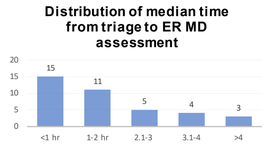
- The University of Alberta Hospital (UAH) is not meeting the recommendations outlined by national and international guidelines for treating individuals with SCD who present to the ED with VOE.
- While the pediatric ED at the UAH has a standardized sickle cell VOE protocol, the adult ED does not.
- Delays in appropriate management can lead to long-term morbidities and mortality.

BASELINE

- Based on an audit of 56 sickle pain crises presentations at UAH ED from 2000-2017 (n=26 patients):







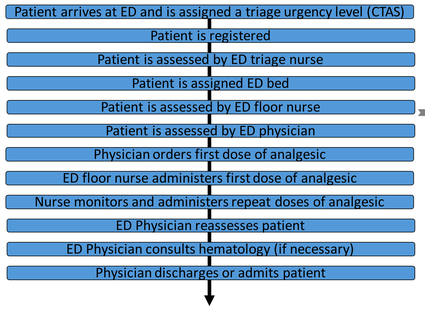
AIM

By December 2020:
- 20% reduction in the time from ED triage to first dose of analgesia, and in keeping with national and international guidelines, within 30 minutes of ED triage and/or 60 minutes of ED presentation.
- 20% improvement in patient satisfaction and experience in those who present to the UAH ED with sickle cell VOE, as measured by a pre-devised patient survey.

BUILD UNDERSTANDING

PROCESS ASSESSMENT

- A brief literature review and QI tools were completed to assist with identifying root causes and areas of opportunity.



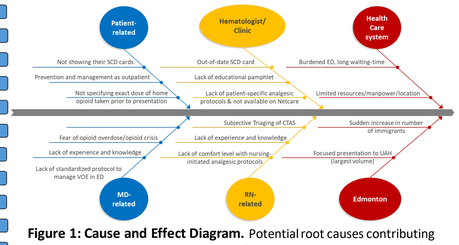


Figure 1: Cause and Effect Diagram. Potential root causes contributing to delays in appropriate management of VOE in the UAH ED were identified and categorized into patient-related, MD-related, Hematologist/Clinic, RN-related, Health Care System, and Edmonton specific issues.

AREAS OF OPPORTUNITY

- Time from ED triage → registration
- Assignment of appropriate triage urgency level (CTAS 2)
- Time from triage → first dose of analgesic
- More frequent assessment of pain using appropriate tools

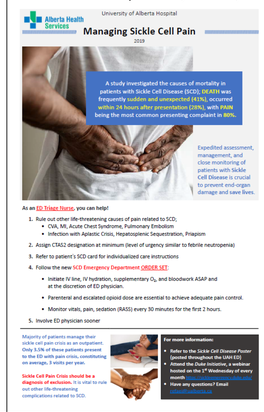
MANAGE CHANGE

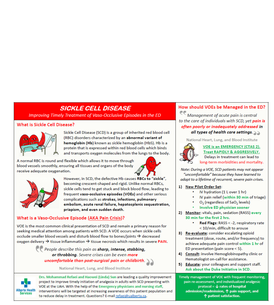
COLLABORATION & COMMUNICATION STRATEGIES

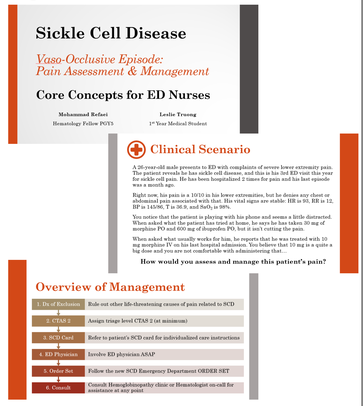
- Multidisciplinary team of physicians, medical students, nurses, clinical nurse educators (CNE), and QI specialists.
- Two stakeholder meetings were conducted in September and December of 2018 to create process maps and identify root causes for prolonged time from triage to analgesia (figure 1).
- Periodic meetings held with frontline stakeholders from the hemoglobinopathy clinic, hematology, ED physicians, CNEs, and ED triage RNs.
- Collaboration from a patient representative was elicited to learn about how to improve the patient experience.

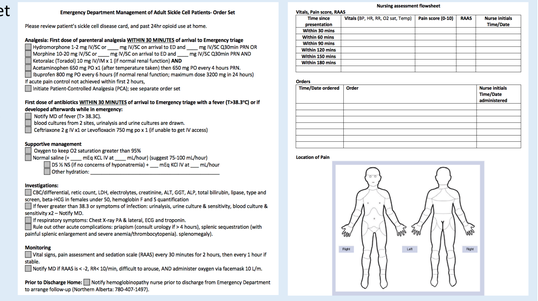
ACT TO IMPROVE

	GAP	INTERVENTION
PATIENT-RELATED	Ineffective use of patient SCD cards	• Update SCD card with patient-specific home analgesia regimen • Remind patients to retain digital copy of SCD card on cell phone and to share it with ED medical staff ASAP • Exploration of appropriate apps to support patient medical history capture
	Insufficient patient education	• Patient-specific instructions for prevention and management of VOEs in both a paper and online format
MD/RN-RELATED	Subjective triaging of sickle cell VOE	• Educational posters, emails, and teaching sessions targeted at CNEs, ED triage nurses, and ED RNs
	Lack of standardized protocol	• Development and trial of standardized order set for management of VOE which includes preset orders and monitoring parameters for ED nurses and physicians *(electronic version loaded onto Comprehensive Clinical Practice Guideline Library (ccPGL) and paper copies available at the ED triage desk)*









RESULTS

- Due to the time, staff, and location constraints associated with the implementation of Connect Care and renovations at the UAH, a full PDSA cycle was not completed and has been delayed until Fall 2020. No results to report currently.

NEXT STEPS

- Incorporation of patient-specific instructions and standardized order set into Connect Care is planned for Fall 2020.
- Administer patient and ED provider satisfaction surveys to monitor experiences with the interventions and to identify further areas of opportunity.
- Monthly patient chart audits and adjustments to PDSA cycle based on assessment of interventions' impacts for 1 year following PDSA start date.
- Share interventions at ED physician divisional meetings and RN educational sessions to ensure that sustained awareness is maintained.
- Explore future possibility of upfront analgesia administration by RNs (upon verbal confirmation from MD).

SHARE LEARNING

LESSONS LEARNED

- Orientation module for new ED nurse hires lacks emphasis on pain management, appropriate triaging, the time sensitive nature of VOE presentations, and the RAAS scale which is used in the SCD VOE standardized order set. Updated orientation package has been made available to CNEs for teaching purposes.
- Common misunderstanding that SCD only affects people of African descent. Updated orientation package addresses this knowledge gap.
- Best way to share learning to ED staff include presenting at morning huddles and hosting short, consecutive in-service sessions (10-15 min).

WHY THIS QI MATTERS

TO PATIENTS:
Reduce patient morbidities & dissatisfaction from poorly managed VOE in ED.

TO MD/RNs:
Streamline flow of patients through ED to foster cooperation from patients and hematologists.

TO HEALTHCARE SYSTEM:
Optimize scarce resources and reduce the need for hospital admission/readmission of SCD patients with VOE. Decrease the burden on ED and reduce overall wait times.

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