Division of Hematology/Adult Red Cell Disorder Program of British Columbia (RCDP of BC)

# Real Pain, Real Urgency: Changing the ED Experience for Sickle Cell Patients

Divya Soni, Soojee Sim, Nina Sandhu, Stephanie Garland, Anthony Wong, Navreet Grewal, Hayley Merkeley

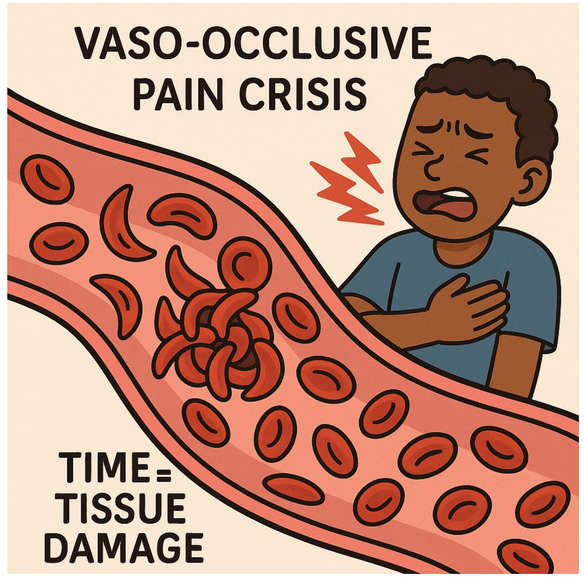
## Background

St. Paul's (SPH) is home to the provincial **Sickle Cell Disease (SCD)** program. SCD is a serious, inherited blood disorder marked by sudden, **excruciating episodes of pain known as vaso-occlusive crises (VOC)**. These painful events are the leading cause of emergency department (ED) visits for people living with SCD. Despite clear national guidelines recommending rapid pain management—including the **administration of parenteral analgesia within 30 minutes of triage and prioritization as CTAS level II or higher**—patients too often face delays that intensify suffering and increase the risk of life-threatening complications. **Timely, compassionate care in the ED is not just best practice—it's a lifeline!**

## Methods: Turning Insight into Action

The RCDP team set out to bridge the gap between evidence and ED practice for sickle cell disease (SCD).

- We extracted ED visit data from SCD patients treated at SPH (Nov 2019–Mar 2024) and VGH (Nov 2022–Mar 2024) through Power Chart.
- For each VOC presentation, we tracked key quality indicators: **CTAS triage level**, **time to first parenteral analgesia**, **use of the SCD VOC Power Plan.**
- These measures provided a baseline snapshot of current ED care and identified gaps against best practices.
- To address these gaps, we conducted a literature review of **individualized pain plan models**. We then:
- Developed **custom outpatient pain plans** (Figure 1) to reduce ED reliance
- Created **inpatient pain plans** mapped to the existing **SCD Power Plan** to enable fast, tailored VOC treatment in the ED




## Results: Gaps in Urgency, Delays in Relief

**146 patient charts** were reviewed, identifying **297 ED visits** for **VOC—94%** of which occurred at **SPH**.

### Triage & Time to Treatment

- Only **26.2%** of patients were triaged at **CTAS Level II or higher**
- **Median time to first parenteral analgesia: 57.5 minutes**
  - Just **14.8%** received analgesia within **30 minutes**
  - **40%** waited **over 2 hours** for their first dose

### Use of VOC Power Plans

- Power Plans were used in only **46%** of visits
- Of those, **just 6.2%** were initiated by ED providers

### Pain Management Escalation

- **Acute Pain Service involvement: 34.2%** of cases
- **Average time to Patient Controlled Analgesia (PCA) initiation: 24.8 hours**

### Specialty Referral & Outcomes

- Hematology consulted in **67%** of visits
- **50%** resulted in admission; **51%** required **re-hospitalization within 30 days**
- Median inpatient stay: **1 day**
- **10%** of presentations involved **complicated VOC** (e.g., Acute chest syndrome, Transient ischemia attack)
- **Opioid-related adverse effects:** Rare (**1.7%**); **Naloxone use:** Extremely rare (**0.33%**)

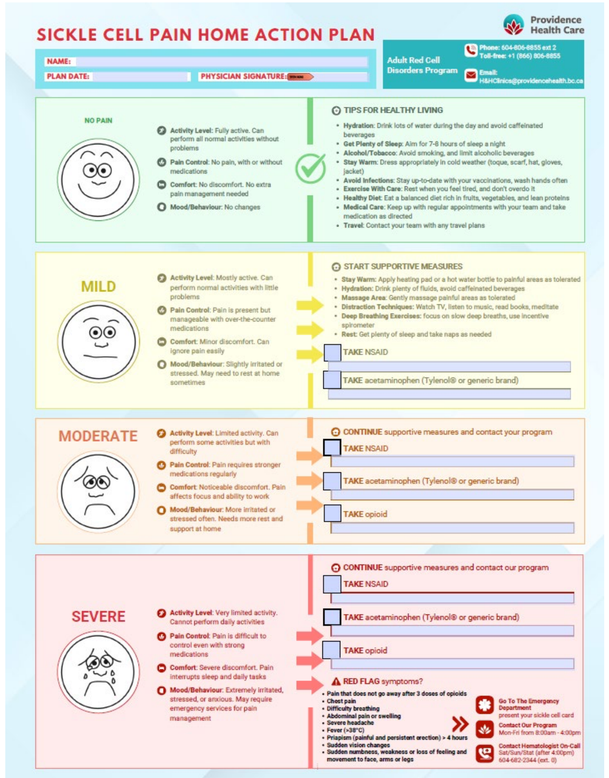



**Figure 1. Example of an outpatient pain plan**

## Bottom Line

Timely, guideline-driven care for VOC is inconsistent—**delays in triage and treatment** are common, **care plans underutilized**, and **re-hospitalizations high.** These findings highlight a critical need for streamlined, standardized ED care pathways for SCD.

## Next Steps: Turning Data Into Action

This first-of-its-kind review of emergency care for patients with SCD in BC has shed light on critical care gaps—and where we go next is clear.

**1. Prioritize Pain Early**
Ensure patients presenting with VOC receive **CTAS Level II triage** to fast-track life-saving pain management.

**2. Accelerate Analgesia Delivery**
Implement strategies to **reduce time to first parenteral dose**—including rapid access to PCA—to align with care standards.

**3. Empower Providers with the VOC PowerPlan**
Promote **awareness and use of the VOC PowerPlan** in EDs to streamline and personalize treatment.

**4. Strengthen Outpatient Support**
High re-presentation rates highlight the need for **robust outpatient pain plans**—with the goal of reducing preventable ED visits.

The next phase will focus on evaluating the effectiveness and long-term sustainability of these strategies as part of ongoing PDSA quality improvement cycles.

Reference / Bibliography

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