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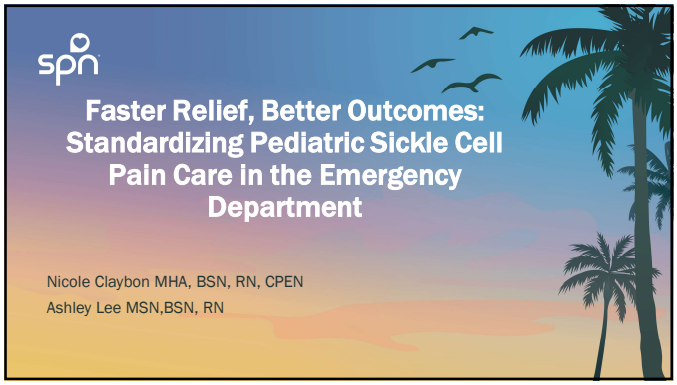
Faster Relief, Better Outcomes: Standardizing Pediatric Sickle Cell Pain Care in the Emergency Department
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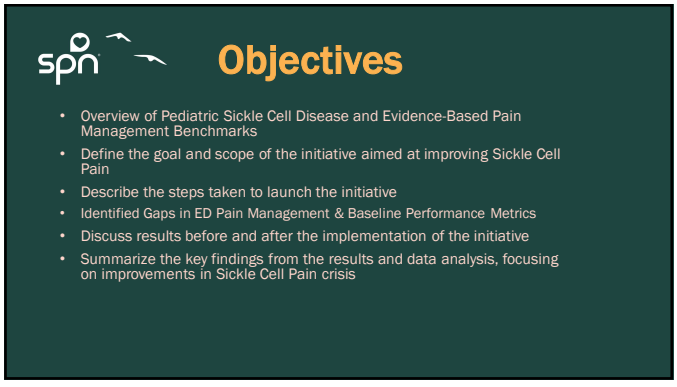
Objectives
Overview of Pediatric Sickle Cell Disease and Evidence-Based Pain Management Benchmarks
Define the goal and scope of the initiative aimed at improving Sickle Cell Pain
Describe the steps taken to launch the initiative
Identified Gaps in ED Pain Management & Baseline Performance Metrics
Discuss results before and after the implementation of the initiative
Summarize the key findings from the results and data analysis, focusing on improvements in Sickle Cell Pain crisis

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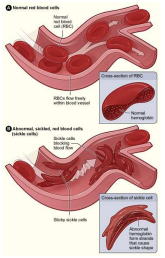
Pathophysiology of Sickle Cell Pain

Cause of Pain: In sickle cell disease (SCD), red blood cells become rigid and shaped like crescents or "sickles." These cells can clump together and block blood flow in small vessels, leading to Vaso-occlusion. This lack of oxygen causes severe pain in bones, joints, chest, and abdomen.

Triggers that Worsen Pain:

- Infection or fever increases sickling.
- Dehydration thickens the blood and worsens clumping.
- Cold exposure or stress causes blood vessels to constrict, raising risk of blockage.
- Hypoxia (low oxygen) from things like high altitude or asthma can also precipitate crises



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Why Awareness Matters

- ~100,000 people in the U.S. live with sickle cell disease
- Vaso-occlusive crises are the most frequent cause of ED visits in this population
- Most common inherited blood disorder in the U.S.
- National evidence shows children often wait more than 90 minutes for their first pain medication, exceeding the benchmark of 30 minutes

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Identified Gaps in ED Pain Management

- Promptly initiate interventions following the organization's Sickle Cell protocols
- Improve collaboration within the multidisciplinary team to achieve administering pain meds within 30 minutes
- Identify knowledge gaps and deficiency trends.
- Provide education to staff, utilizing engaging activities, to improve patient care and outcomes.

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Purpose of this Initiative

- Improve patience experience
- Reduce delays in pain management for pediatric SCD patients
- Decrease admissions
- Improve outcomes for patients through timely identification and intervention
- Increase staff engagement and compliance to standardize sickle cell pain protocols
- Meet the benchmark of initiating appropriate pain management within 30 min of arrival

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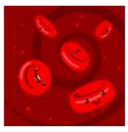
Timeliness Goals



💡 If no IV w/in 15 min → Give **IN fentanyl per order**

Step	Target Time
Door to Room	< 15 minutes
Door to Orders	< 20 minutes
IV Placement	≤ 20 minutes
Door to First Dose	≤ 30 minutes
Pain Reassessment	Every 15–30 min

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Sickle Cell Pain Improvement Initiative

- **Direct Rooming:** Assign ESI 2 & room immediately
- **First Pain Med <30 min** (NHLBI, 2014)
- **Verbal Order Set:** Morphine 0.1 mg/kg IV q20min x3 + adjuncts
- **Pain Reassessments:** Every 20 min (wake if asleep)
- **IV Access & Escalation:** Prioritize IV; if delayed, use **IN fentanyl**
- IV Access Algorithm – Streamlined process and escalations to minimize delays in venous access.
- **Communication:** Notify provider after 2nd morphine dose; escalate to charge nurse & attending
- **Reminder:** Nurses should also prompt providers to order **Hycet/Norco + Motrin** with morphine

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Baseline Performance Metrics

Average data from March – May 2025 (pre-initiative launch) • Collected across 153 patient visits

Door to Room	Door to Pain Assess	Door to Med Orders	IV Placement	Door to 1st Dose ⚠
10.5 min	10.7 min	34.7 min	39.4 min	56.6 min

Order Set Use	Non-Pharm Interventions	Pain Reassessment Compliance
61%	65%	60%

⚠ National Benchmark: Door to 1st Pain Med ≤ 30 min (NHLBI, 2014) — Baseline average was nearly 2x this target

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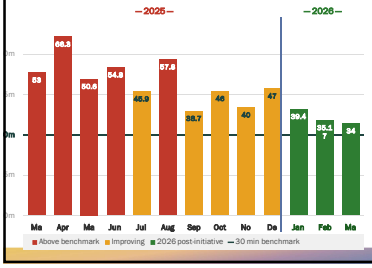
Results: The Full Picture

Door to 1st Dose (min) • — ≤30 min national benchmark (NHLBI 2014)



Targets vs. Actuals

Metric	Goal	Now
Door to 1st Dose	≤30 m	36.2 m ✓
Pain Reassessment	100%	84% ↑
Order Set Use	100%	77% ↑
Door to Room	≤15 m	Direct ✓

Key Wins

- ✓ **Door to 1st dose ↓ 36%** (56.6 → 36.2 min)
- ✓ **Reassessment compliance ↑ 40%** (60 → 84%)
- ✓ **Non-pharm interventions ↑ 19pp** (65 → 84%)
- ✓ **Direct rooming achieved 100%** (Jan–Mar '26)

So What?

Standardized protocols + staff education drove a sustained downward trend in time to first pain medication—moving from nearly 2x the national benchmark to within reach of it.

Faster pain relief = better outcomes for our kids with SCD.

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Sustaining Sickle Cell Pain Engagement Through Innovation and Collaboration
Strategies that Build Lasting Impact

📊 Ongoing Evaluation & Coaching –
Monthly audits, coaching sessions, and continuous staff education

🤝 Collaborative Practice Refinement
Embedding Sickle Cell Pain strategies into unit-based QI cycles

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What Changed: Outcomes of Our QI Initiative

Timeliness Improved
- Time to first pain medication decreased **56.6 → 36.2 minutes**
- Movement toward national benchmark (**≤30 min**)

Pain Reassessment Improved
- Reassessment compliance increased to **91%**
- More frequent and timely reassessments

Process Reliability Increased
- Increased use of standardized order set
- Improved non-pharmacologic interventions
- More consistent workflow across staff

Patient Care Outcomes
- Trends toward reduced admissions
- Improved patient experience and trust
- Faster symptom relief

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SC Pain Standing Delegation Order (SDO)

Purpose

Supports timely, multimodal pain control for pediatric SCD patients presenting to the ED with acute vaso-occlusive pain crisis, aligned with evidence-based guidelines.

Inclusion Criteria
- Confirmed SCD diagnosis (any genotype)
- Age ≥1 and ≤21 years
- Acute VOC complaint; pain score ≥1/10
- Hemodynamically stable; SpO2 ≥92%
- Alert and at neurological baseline
- No allergy to protocol medications
- Fever permissible (provider notified)

Exclusion Criteria
- AMS or neurological change (→ stroke)
- Respiratory distress / ACS signs
- Hemodynamic instability / shock
- Priapism, splenic sequestration, aplastic crisis

Medication Pathway

MILD (1–3)

Acetaminophen PO 15 mg/kg (max 650 mg) OR Ibuprofen PO 10 mg/kg (max 600 mg) q6h. Add Hycet/Norco if uncontrolled.

MODERATE (4–6)

Ibuprofen PO 10 mg/kg (max 600 mg) + Hycet/Norco (<50 kg: 0.1–0.2 mg/kg; ≥50 kg: 5–10 mg) q4h PRN. Nonpharm interventions concurrently.

SEVERE (7–10)

IN Fentanyl 2 mcg/kg (max 200 mcg) if IV delayed. Morphine IV 0.1–0.2 mg/kg (max 6 mg). Add Ibuprofen + Hycet/Norco concurrently. Reassess q20 min. Notify provider if pain ≥7 after 2 doses.

IV access delayed → IN Fentanyl STAT + topical analgesia

Nursing Interventions
- Bypass triage — room patient immediately
- Place on cardiac monitor + pulse oximetry
- Maintain SpO2 ≥92% (Venti-mask preferred)
- Topical anesthetic for IV procedures (do not delay care)
- Reassess pain every 20 min; document in flowsheet
- Repeat VS 30 min post-narcotic
- IV fluids at slow, controlled rate (avoid overload)
- CBC w/diff + reticulocyte (first visit or deterioration)

Escalate Immediately
- ⚠ Notify provider after 2nd narcotic dose
- ⚠ SpO2 <92% or new respiratory distress
- ⚠ New fever, chest pain, neurologic changes
- ⚠ AMS, seizure, focal neurological deficits (→ stroke)
- ⚠ Pain ≥7 uncontrolled after 2 doses

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Results and Data Analysis: Before & After

Baseline: Mar–May 2025 (153 visits) vs. Current: Jan–Mar 2026 (147 visits)

Baseline (Mar–May 2025)	Change	Current (Jan–Mar 2026)
TIMELINESS METRICS (minutes)		
Door to Room: **10.5 min**	↓ 100%	Door to Room: **Direct Roomed ✓**
Door to 1st Dose: **56.6 min**	↓ 36%	Door to 1st Dose: **36.2 min**
Door to Med Orders: **34.7 min**	↓ 48%	Door to Med Orders: **18.1 min**
IV Placement: **39.4 min**	↓ 40%	IV Placement: **23.7 min**
COMPLIANCE METRICS		
Order Set Use: **61%**	↑ +16pp	Order Set Use: **77%**
Non-Pharm Interventions: **65%**	↑ +19pp	Non-Pharm Interventions: **84%**
Pain Reassessment Compliance: **60%**	↑ +24pp	Pain Reassessment Compliance: **84%**

Door to 1st Dose improved by 20.4 minutes — moving from nearly 2x the national benchmark to within reach of the ≤30 min goal

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Results and Data Analysis: Compliance & Process Outcomes

Comparing average performance: Baseline (Mar–May 2025) vs. Current (Jan–Mar 2026)

Order Set Use		Non-Pharm Interventions		Pain Reassessment Compliance	
61% Baseline	77% Current †	65% Baseline	84% Current †	60% Baseline	84% Current †

What This Means for Patients

- Nurses are using the standardized order set more consistently, reducing variation in care
- Non-pharmacologic comfort measures (heat, positioning, distraction) are now initiated at rooming
- Pain reassessment compliance jumped 24 points — patients are being monitored and treated more frequently post-narcotic

61% → 58%
Admission Rate Trending Down

Early trend toward reduced admissions — continued monitoring underway as initiative matures

Across all three compliance measures, the initiative produced meaningful and sustained improvements in less than one year

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Questions??

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