

Children's Mercy Kansas City

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### Increasing Incentive Spirometry Use in Patients with Sickle Cell Disease Admitted to Children's Mercy Hospital

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# Increasing incentive spirometry use in patients with sickle cell disease admitted to Children's Mercy Hospital

Tom Cochran, Alex Prosser, Julia Harris, Rachel Markowski and Joel Thompson

## Children's Mercy Kansas City

### Introduction

- **Acute chest syndrome** is a leading cause of **morbidity and mortality** in patients with sickle cell disease
- National Heart, Lung, and Blood Institute (NHLBI) recommends providing **10 breaths of incentive spirometry (IS) every 2 hours** while awake to prevent development of acute chest syndrome

### Methods

- **Incentive spirometry** completion of patients admitted for vaso-occlusive pain crisis at **Children's Mercy Hospital (CMH)** was collected between 08/01/21 and 10/31/21
- **Frequency** of IS being offered per hospital day, **median hours** between being offered, and **number of breaths** was obtained
- **Identified inconsistent orders** between powerplans
- Corrected IS orders in powerplans to **match NHLBI guidelines** on 12/21/21
- **Provided education** to residents and to nursing for improved implementation of these orders

### Aim

To **increase frequency of IS** being offered and documented to **meet NHLBI guidelines** for **sickle cell patients** admitted for vaso-occlusive pain from 0% to 10% from 8/2021 to 4/2022

### Results

	8/1/2021 – 10/31/2021	1/1/2022 – 3/31/2022
Hospital Days	190	164
% Days IS Documented	53%	40%
% Days Meeting NHLBI Guidelines	0%	2%

### Conclusion/Next Steps

- First PDSA cycle demonstrated **minimal increase in frequency of IS** being offered per NHLBI guidelines
- Problem found to be **multifactorial** and will require several PDSA cycles before goal is attained
- **Ideas for next PDSA cycles:**
  - Clarify medical team member roles in completing IS
  - Streamline documentation of IS and make documentation easily available to providers
  - Further education to residents and nursing
  - Understand barriers and develop interventions to improve patient adherence

