Stop the Noise! A Framework for Improving Alarm Response Time on a Pediatric Unit

Unified Quality Improvement Symposium

March 31, 2017

Introduction

- Alarm management has received increasing attention as a patient safety concern
- Frequent exposure to nonactionable alarms affects all institutions, especially pediatrics
- QI initiatives tailored to this population are needed to address this workforce and safety concern

Collaborative Team Members

- Ed Johnson, MD, Team Leader
- Katrina Raley, BSN, RN, CEN, 2 West Nurse Manager
- Mike Dunkerley, RN, CPN, 2 West Assistant Nurse Manager
- LaTasha Blount, Monitor Tech
- Jeanette Taylor, Monitor Tech

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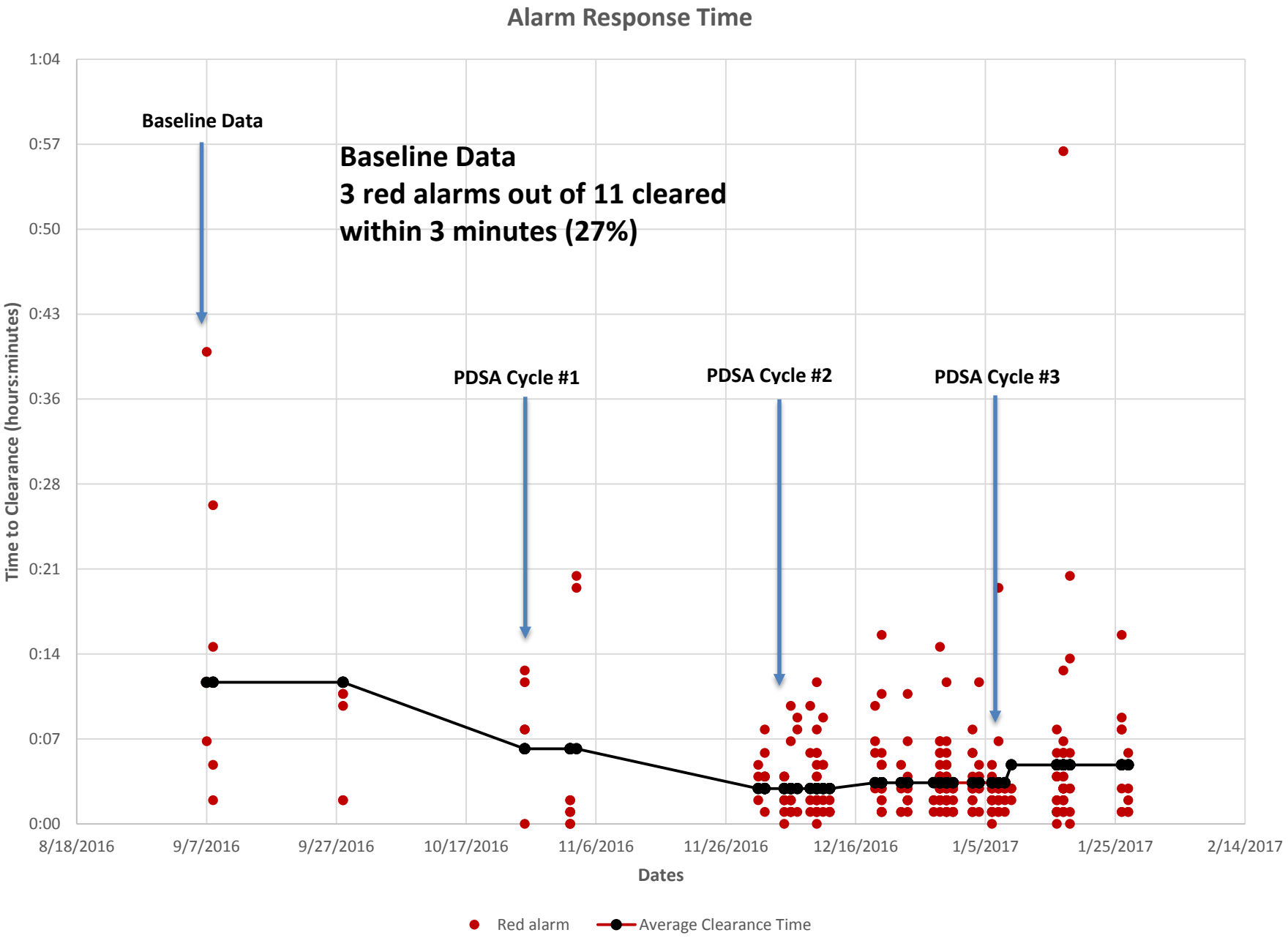
AIM Statement with Numerical Goals

The Aim Statement for my project was:

90% of red alarms on 2 west to be cleared by a healthcare provider within 3 minutes by 6 months

How Will We Know This Change Is An Improvement?

- Outcome measures included the number of actual red alarms during a twelve hour shift, and minutes between red alarm trigger to clearance by a provider
- 2 west uniquely employs monitor technicians as first line responders to red alarms
- Two monitor technicians collected data during their twelve hour shifts 2-3 times per week

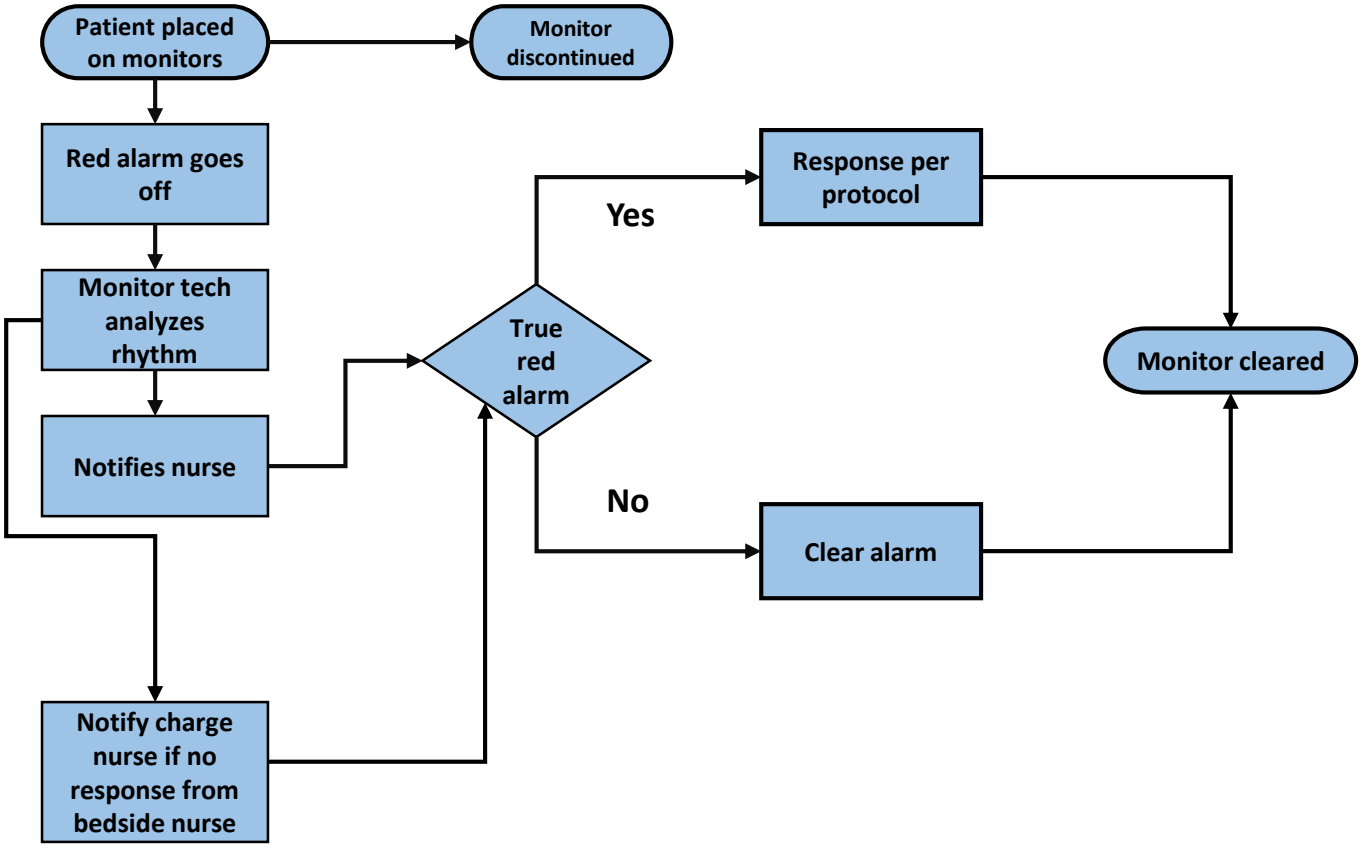

Alarm Response Time
Baseline Data
Baseline Data
3 red alarms out of 11 cleared
within 3 minutes (27%)
PDSA Cycle #1
PDSA Cycle #2
PDSA Cycle #3
Time to Clearance (hours:minutes)
1:04
0:57
0:50
0:43
0:36
0:28
0:21
0:14
0:07
0:00
8/18/2016
9/7/2016
9/27/2016
10/17/2016
11/6/2016
11/26/2016
12/16/2016
1/5/2017
1/25/2017
2/14/2017
Dates
Red alarm
Average Clearance Time

Improvement Strategies Employed

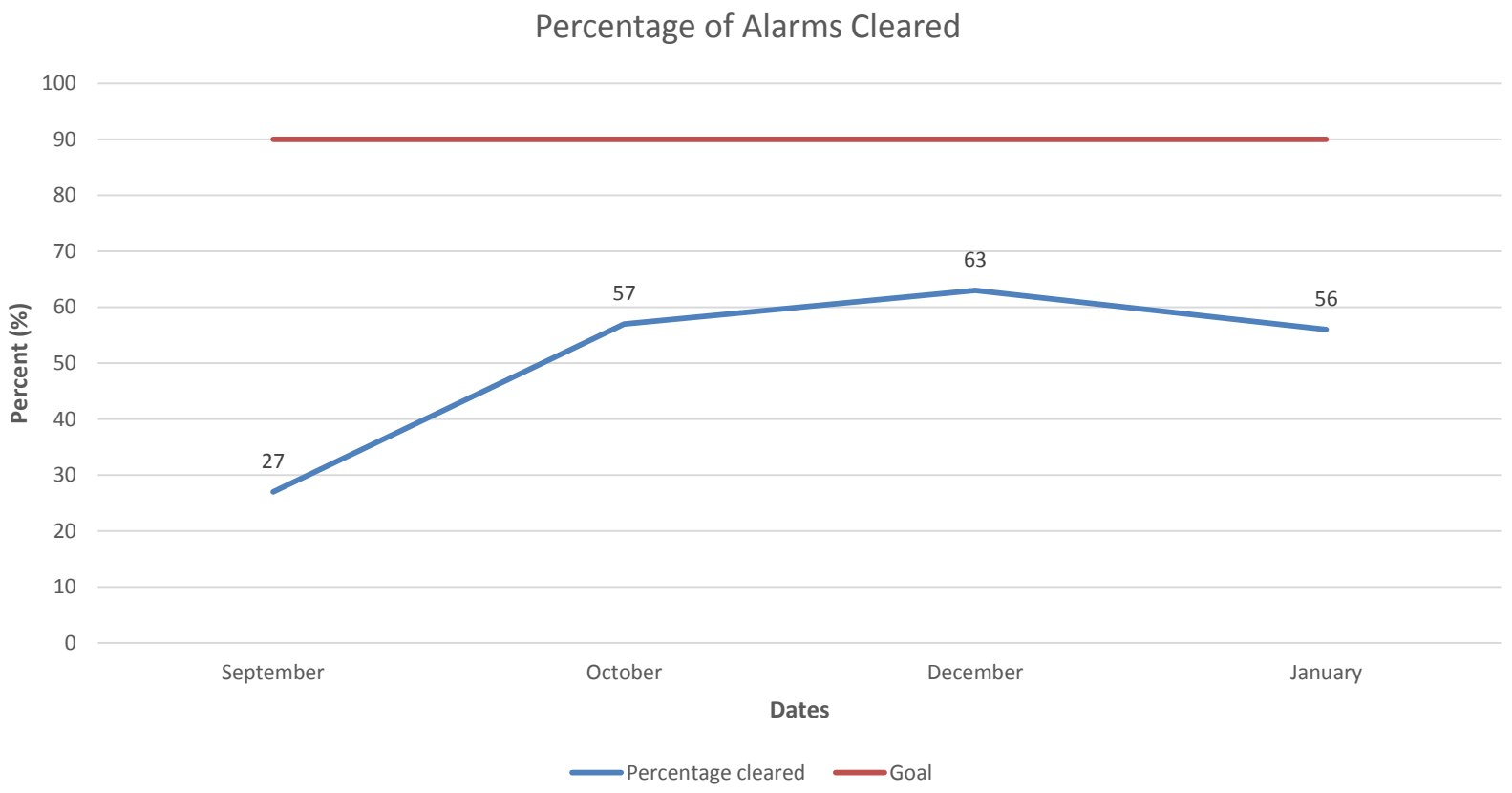
- PDSA cycle #1 – Nurse education at monthly staff meeting.
- PDSA cycle #2- Implementation of new guideline helping improve communication between nursing and monitor technicians
- PDSA cycle #3 – Implementation of guideline for which patients should be placed on monitors

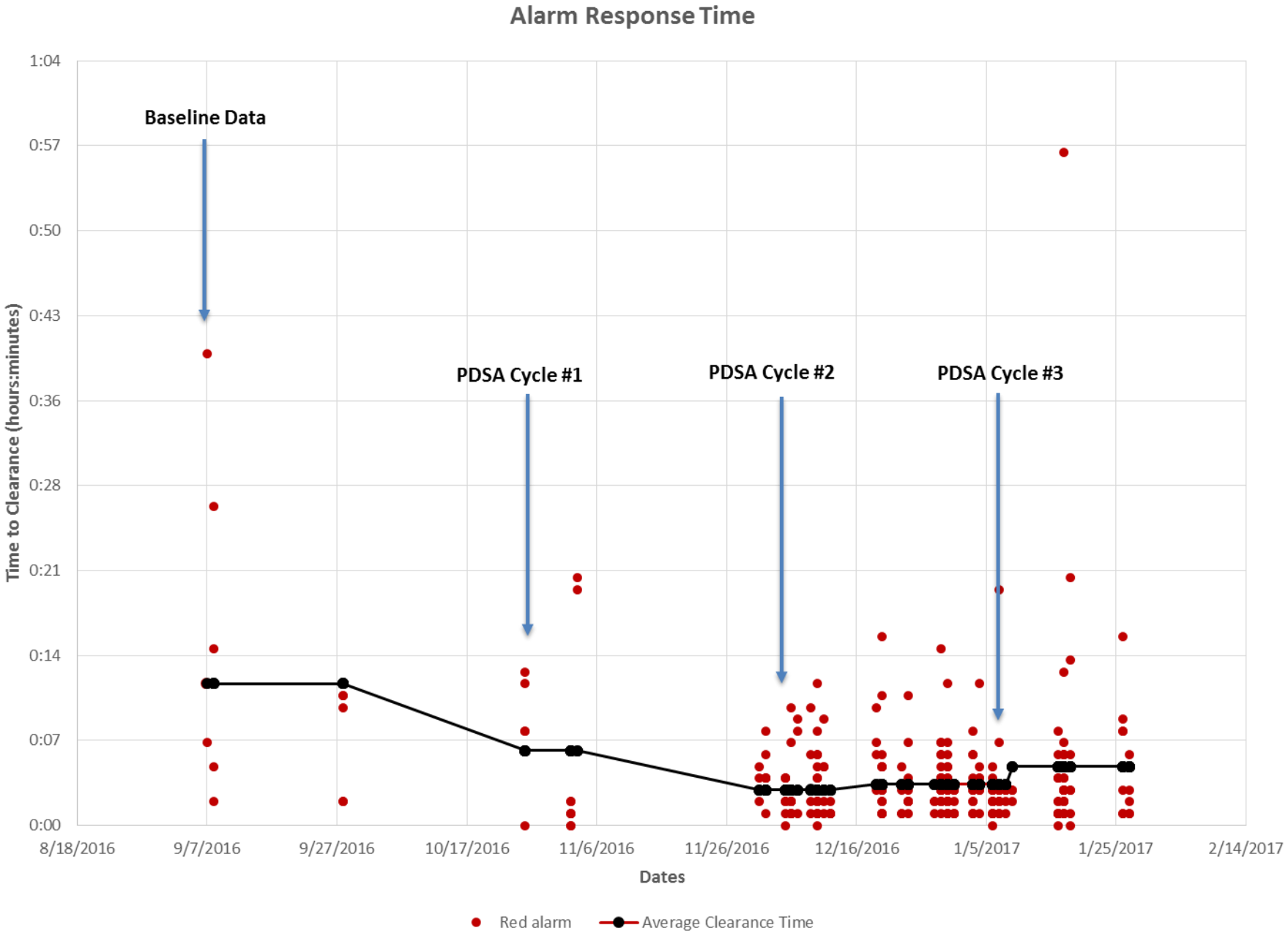
PDSA cycle changes occurred every 2-4 weeks

Red Alarm Process Chart



Outcomes


Percentage of Alarms Cleared
100
90
80
70
60
50
40
30
20
10
0
Percent (%)
27
57
63
56
September
October
December
January
Dates
Percentage cleared
Goal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Average Clearance Time

Challenges Encountered in QI Process

- Participation from nursing staff
- Participation from medical staff
- Accurate data collection

Lessons Learned Through QI Efforts

- QI work is hard!!
- The key to a successful project is teamwork and collaboration
- Implementing a change is hard, but sustaining a change is harder
- Small changes in a system can lead to an improvement. I'm a believer now!!

Next Steps

- Finding a nursing champion
- Implementation of an electronic means of nursing notification from alarm management
- Finding a way to incorporate monitor utilization during the pediatric inpatient rotation