

Improving order to completion time for urgent/stat in-patient and ED pediatric MRIs requiring anesthesia/sedation

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Disclosure

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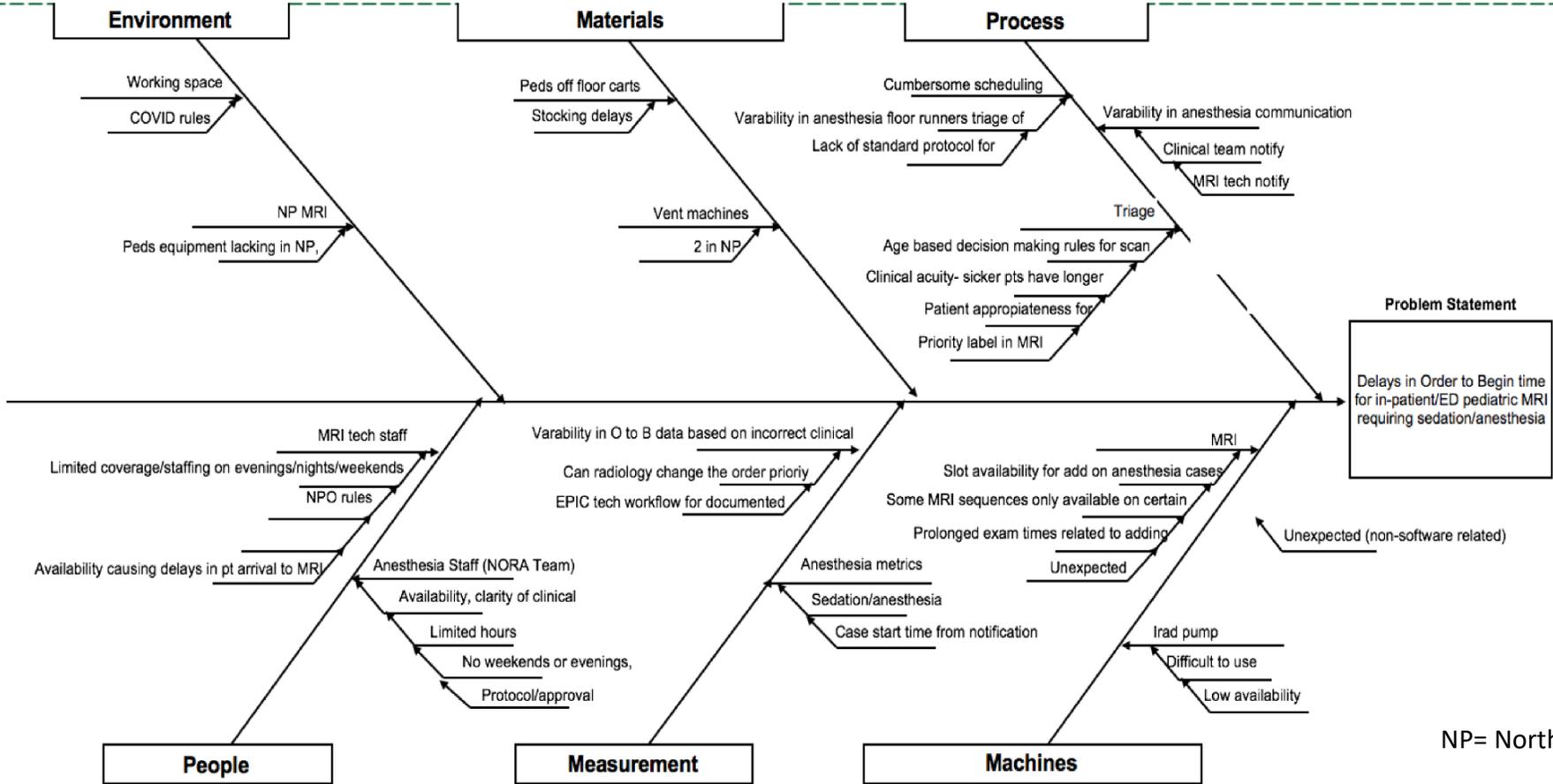
Introduction

- Completion of ED and inpatient pediatric MRI requiring sedation reflects a complex workflow in healthcare requiring interaction and communication between multiple distinct healthcare teams
- Our department was a frequent recipient of complaints in failing to provide timely care for this cohort of children triggering a Quality Improvement project
- Model for Improvement methodology was utilized with multidisciplinary team composed of Radiology, Pediatric Anesthesiology, Pediatric Hospitalists, MRI operations, Scheduling, and the Quality and Safety teams from Yale Radiology and our Yale New Haven Children's Hospital

SMART Goal

Decrease weekday mean order to begin (O to B) MRI time for high clinical acuity (stat/urgent) inpatient/ED pediatric MRI requiring sedation/anesthesia by 25% (current mean= 1125 minutes) and reduce standard deviation (SD) by 50% (currently 1198 minutes) within 12 months.

Fishbone analysis on why exams get delayed



NP= North Pavilion MRI

FISHBONE ANALYSIS, 5 WHY
ANALYSIS AND SHORT PERIOD OF
DATA COLLECTION WITH
SCHEDULING ALLOWED US TO
FOCUS OUR KEY DRIVERS AND
INTERVENTIONS USING A3
FORMAT

Key Issues/Drivers

Interventions / Action Items

Lack of standard protocol for add on cases (including after hours)

No MRI slot available

Improper priority use of case (routine vs urgent/stat/life threat) by ordering LIP

Peds anesthesia notification and clinical team notify of NPO

Re-write protocol/flow map for add on anesthesia cases- JP/DW/RC/SB/NN/KT/JL/

Agile use case- DF/JM

Create 1 standing add on slot - 2pm Tue/Wed (sedation day) release 11am. Add 12pm M/Th/Fri (peds anesthesia days)- Release 10am. MP, SB, DW- started 5/1/21

EPIC cascade on priority selection triggered by anesthesia request- DF, NN, RC, JM

Detail work flow for scheduler to change priority after anesthesia assesses clinical acuity- KT, KH, SB, MP, RC, JM

EPIC trigger on NPO to avoid delays (KH, KT, RC)- started 9/7/21

CSA communication with team when slot booked about NPO rules

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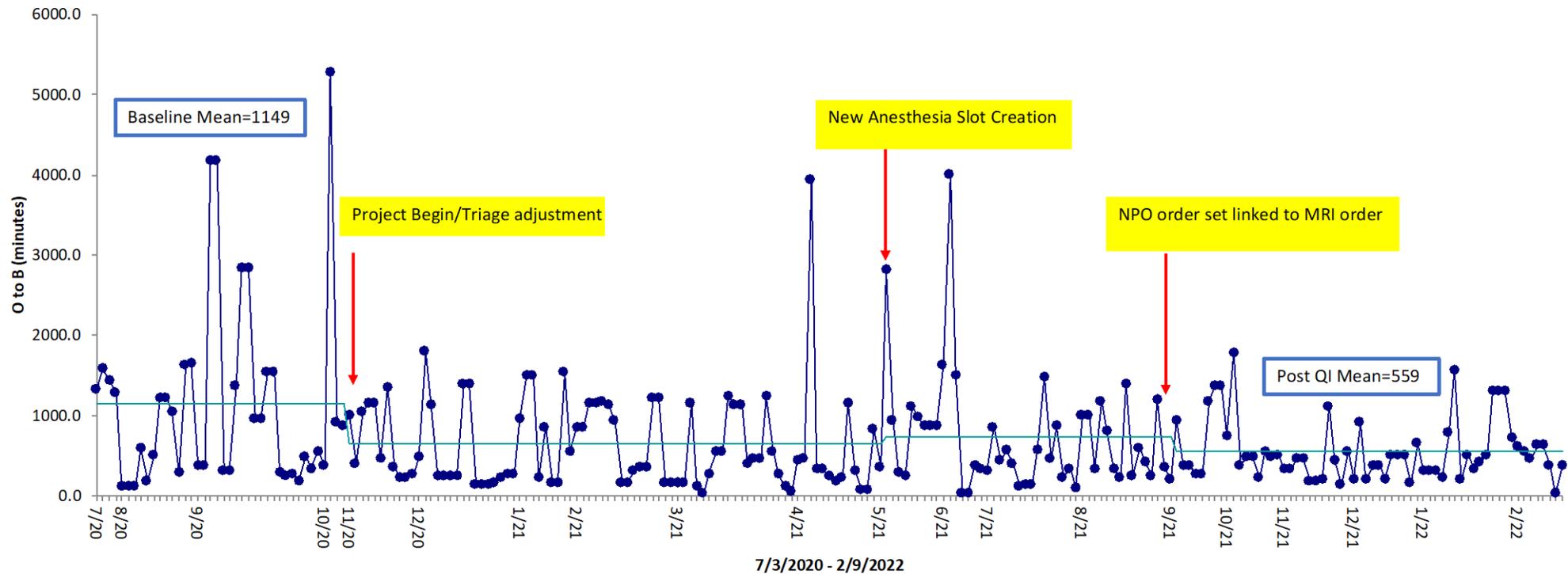
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Baseline (07/2020 to 10/2020) weekday mean Order to Begin time for was 1125 minutes with SD of 1198 minutes. Post intervention (09/2021-2/2022) mean Order to Begin time decreased to 559 minutes (50% reduction) and SD decreased to 388 minutes (68% reduction).

Pediatric Anesthesia Weekday Urgent/Stat MRI Order to Begin Time (minutes)



Conclusion

- This QI project successfully reduced mean order to begin time and standard deviation for ED/in-patient high clinical acuity pediatric MRI requiring sedation/anesthesia
- Our key drivers for other institutions looking to improve their performance for similar exams were
 - **New daily slot** → held for add on cases in the middle of the day. This time worked best for our MRI operational team and Anesthesia and has made it easier to accommodate requests in timely fashion.
 - **NPO order set linked to MRI order** – Promote use of the order set when requesting MRI's with sedation/anesthesia with information on approximate time case will be performed. Has decreased delays due to NPO violations and allowed provider to time NPO orders to expected MRI start time.
 - **Simplify process map**- Decrease steps needed to book case and improve communication between MRI operations, MRI scheduling, Anesthesia, and pediatric ED/in-patient teams.