**Aim and Key Driver Diagram**

**Key Driver Diagram**

1. **Strategic Goal**
   - Reduce Delay in Patient Care

2. **Interventions**
   - **Aim**
     - Reduce Wait Time for Sedated MRI Patients from 8 weeks to 2 weeks by December 2018 and Sustain for 12 months.
   - **Key Drivers**
     - Available Sedation Appointment Times
     - Sedate vs Non-sedate Scans Ordered
     - MRI Simulation
   - **Interventions**
     - Work with Radiology and Neurology to reduce scans for 8 year old age range.
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     - MRI Simulation.

**Interventions & Outcomes**

On 01 Aug 2017, we introduced simulator Fridays. With the aid of Child Life services, eligible patients were offered the opportunity to try the MRI simulator. Once successful, the child would then be scheduled for an immediate unsedated MRI. By 32 Dec 2017, we experienced a drop in wait time from 62 days to 52 days, a 16% improvement. On 01 Feb 2018, we added a third sedation room on Mondays. The additional sedation resource resulted in the greatest impact. By 30 May 2018, wait times had fallen to 23 days, a 63% reduction from Jul 2017. On 01 Sep 2018, we launched a PDSA with our Neurology Clinic. Neurology clinicians and nurses used the Sedate/Non-Sedate Information Sheet to educate patients on their options. The results from this initiative showed an improvement from the previous 23 day mean down to 15 days by 30 Nov 2018.

Our efforts towards abbreviated protocols continue to show promise. We have completed neuro scan protocols and have recently started this PDSA. We have also applied new sequencing software to our Siemens MRI magnets and will track scan times for changes.

We have seen an increase in wait time recently. This is primarily due to budgetary constraints for anesthesia resourcing of the 3rd anesthesia room.

**Conclusion**

We have experienced the most dramatic gains from the increase in sedation resources. We have recently increased our Child Life support for simulation MRI and look to continue our non-sedated MRI success rate for children in the 5-8 year old age range. We are also expanding our PDSA scope to other ordering clinics, in an effort to divert more patients to unsedated scans. We are diligently working to shorten protocols and sequencing times for scans to further reduce the SMRI burden. This future abbreviated approach, with the aid of MRI simulation, will allow for our Child Life team to further stratify patients towards non-sedate slots.

In the last two years, we’ve made a 52% improvement with available resources (30 Nov 2017 mean wait time was 52 days; 31 Jul 2019 mean wait time is 25 days). Our goal is 15 days, and we will continue to employ and track innovative strategies to reach this aim.

**References**


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**Sedated MRI Wait Times:**

**Right Size Resourcing, Protocols, and Sequencing for Sedated MRIs**

**Background**

Long wait times for sedated MRIs (SMRI) result in delays in patient care; meanwhile, wait times have traditionally been long due to resource constraints. This study takes a multifactorial approach to improving wait times for patients that require an MRI under sedation. Our aim is to apply focused interventions in reducing wait times at Nationwide Children’s Hospital from a mean of 56 calendar days down to 15 days.

**Methods**

To reduce SMRI wait times, we looked at 4 key drivers. The first, sedation capacity (SC); the goal for SC was to increase sedation resource availability. We worked towards this key driver by optimizing current anesthesia resources, and lobbying for additional support days. The second key driver was patient education. The goal was to educate patients on the risks of sedation while offering non-sedation alternatives. We did this by providing ordering clinicians an information sheet to share with patients and their families. If they chose the non-sedation route, the clinician would direct patients to Child Life Services; families would then be provided assistance with non-sedation options. The third key driver was MRI simulation. With the help of Child Life Services, we encouraged patients to try our MRI simulator. If successful, they were then immediately scheduled for an unsedated scan. Our final key driver was to reduce MRI scan times. We set out to reduce protocol standards to the minimum necessary for quality scans; as well as reduce sequencing times in order to further abbreviate scans. This is an ongoing objective, that we continue to make progress towards.

**Interventions & Outcomes**

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