Perioperative Surgical Home: Methodology for Coordinating Pediatric Anesthesia Care

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Perioperative Coordination of Care Program

- **Background** The goal of the anesthesia-led coordination of care team is to optimize safety for children requiring multiple procedures under general anesthesia, by providing a single continuous anesthetic for imaging and surgical requests.

- **Methods** We developed an inter-professional team to create a process for providers to request multiple procedures with a single continuous anesthetic. We established a web-based form for requests which prompts the provider for all critical details required to build each combined care plan. Program sustainability continues to rely on changing perceptions of best practices in perioperative scheduling.

- **Results** The program began in December 2011, with over 350 cases completed to date. Through the development of this program, we have evolved our clinical expertise to provide optimal combinations and sequencing of procedures under one continuous anesthetic.

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The Perioperative Surgical Home: Shifting the Scheduling Paradigm

- Prior to the introduction of our program, frequently both a surgical procedure and a radiological procedure were requested, but because scheduled by disparate clinics/surgical services, there was significant fragmentation in care.

- Our Coordination of Care program has shifted the plan of care toward patient-centered perioperative and anesthetic care with one coordinated visit to our institution.

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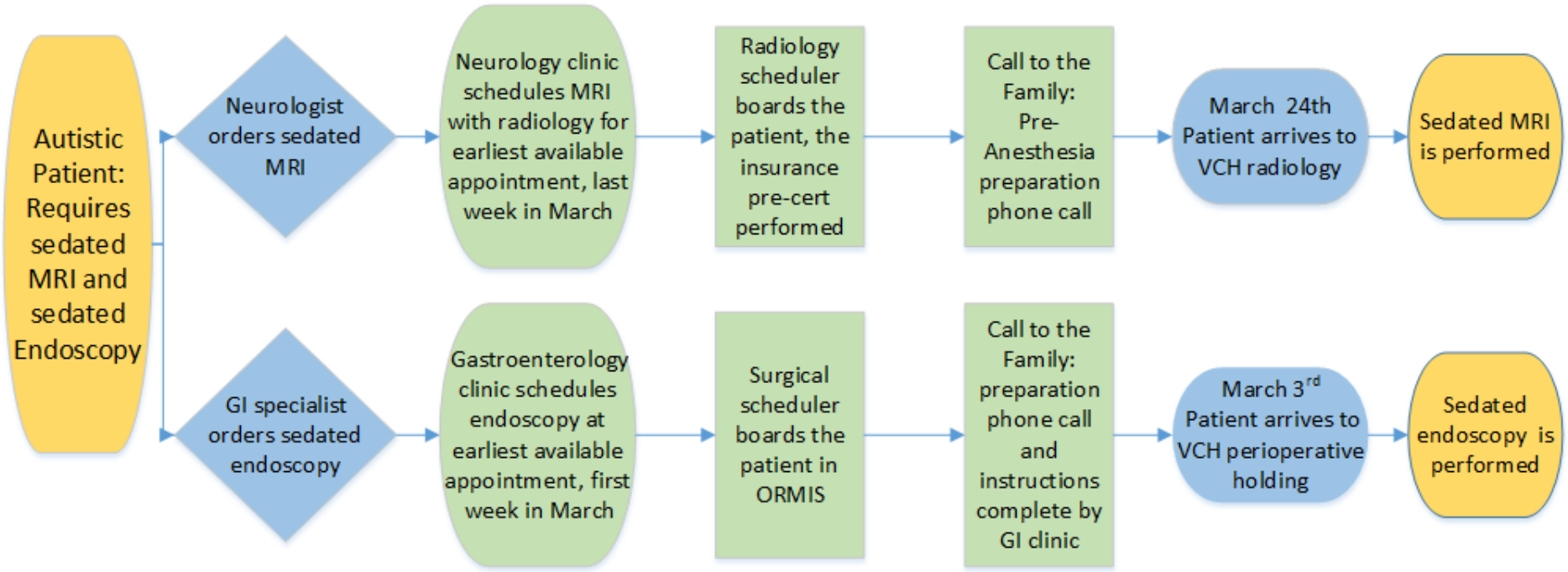
Prior State: One Patient, Two Anesthetics



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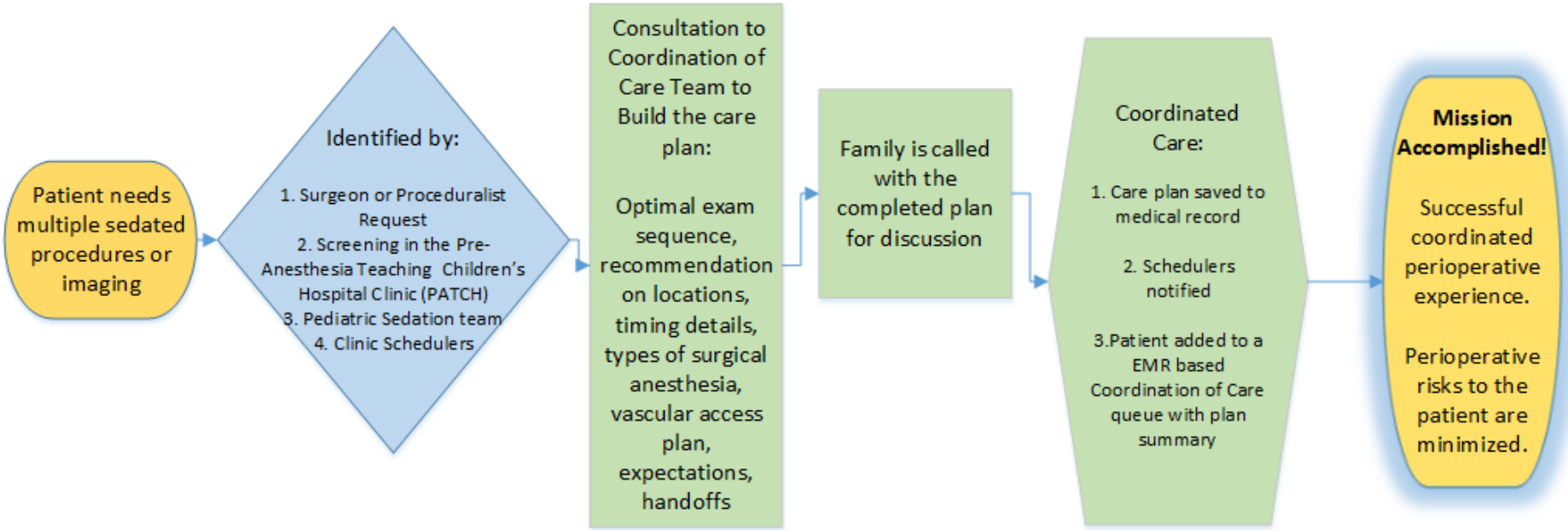
Current Process: Patient Centered Perioperative and Anesthetic Care, One Coordinated Visit



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Recommendations

- As the volume of patients being managed by our program increases, we have reviewed success of patient care plans and can now articulate recommendations for:

- Optimal sequencing of procedures/scans that work best for patient care flow
- Combined care procedures that are best left as separate care plans

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Template for Sequencing Coordination of Care

Planning Sequence		Example 1	Example 2	Example 3	Example 4
Step 1	Arrival to Perioperative Services Location: registration and consent	arrive to holding room for anesthesia assessment, consents, MRI safety documentation	arrive to holding room for anesthesia assessment, consents, nuclear medicine safety documentation	arrrive to holding room for stealth MRI marker placement, assessment and consents	arrive to holding room for anesthesia assessment, consents, CT safety and contrast screening
Step 2	Non-invasive Imaging in radiology or minor procedure or study	MRI	Nuclear Medicine Study	Stealth MRI	CT
Step 3	Transport direct from imaging/procedure to OR for surgery	LP	Bone marrow aspirate or other minor procedure	Craniotomy	Bronchoscopy and Laryngoscopy
Step 4	Recovery in the periopoerative/surgical location	Recovery - periopoerative/surgical location	Recovery - periopoerative/surgical location	Recovery - periopoerative/surgical location	Recovery - periopoerative/surgical location
Notes	Clinical significance for sequencing recommendations	MRI images may be impacted from trauma from the LP, so imaging should be performed first	Nuclear Medicine study should be performed prior to the procedure or diagnostic results will be influenced	Stealth MRI performed on the day of surgery may save family an unnecessary night in the hospital	Bronchoscopy may influence interpretation of the chest CT scan, thus optimal to have bronch performed after the imaging

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Procedural/Imaging Combinations that are Not Recommended

Types of Procedures/Imaging	Clinical Significance
Dental rehabilitation and adenoidectomy	Nasal endotracheal tube required for dental procedure obstructs ability to excise adenoid tissue
T&A and pH probe	pH probe cannot be in place during immediate T&A postop period due to risk of irritation and ensuing hemorrhage to newly cauterized tonsillar bed
Any invasive procedures with cardiac catheterization	Combining EGD/colon or dental rehabilitation with a cardiac catheterization, presents increased risk for bacteremia.
MRI	Any non-urgent imaging that is required to be read prior to the procedure

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Perioperative Coordination of Care Request Form

- To support the most efficient process for planning this care, we created a request form to prompt the user to provide relevant details in order to streamline communication, allowing our team to effectively build and communicate the care plan.

- This has established a new norm in communication with schedulers in surgical subspecialties and with our radiology scheduling team. They have become more communicative with each other, in order to help 'best seat' a patient into the operating room and MRI schedules. Scheduling goals are now more patient focused, rather than surgeon focused.

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Anesthetic Coordination of Care Request Form

Patient Name :	
Patient MR#:	
Requested Date of Service:	
Diagnosis:	
Name of Family contact and phone numbers:	
Surgery/Procedure request:	**Radiology Imaging request:**
CPT:	**CPT:**
Start time:	**Start time:**
OR room #:	**Total Imaging /Scan Time:**
Surgeon:	**Physician requesting the imaging :**
Attending Physician Contact Info:	**Attending Physician Contact Info:**
Surgical Scheduler contact information/phone number:	**Radiology Scheduler contact information/phone number:**
Additional Comments, Instructions:	

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How do you successfully navigate culture change?

- Identify a Physician and Nursing champion
- Engage key stakeholders and debrief regularly
- Use feedback to design and redesign the process
- Celebrate successes publicly at perioperative Town Hall meetings
- Share feedback from patients and their families at team meetings

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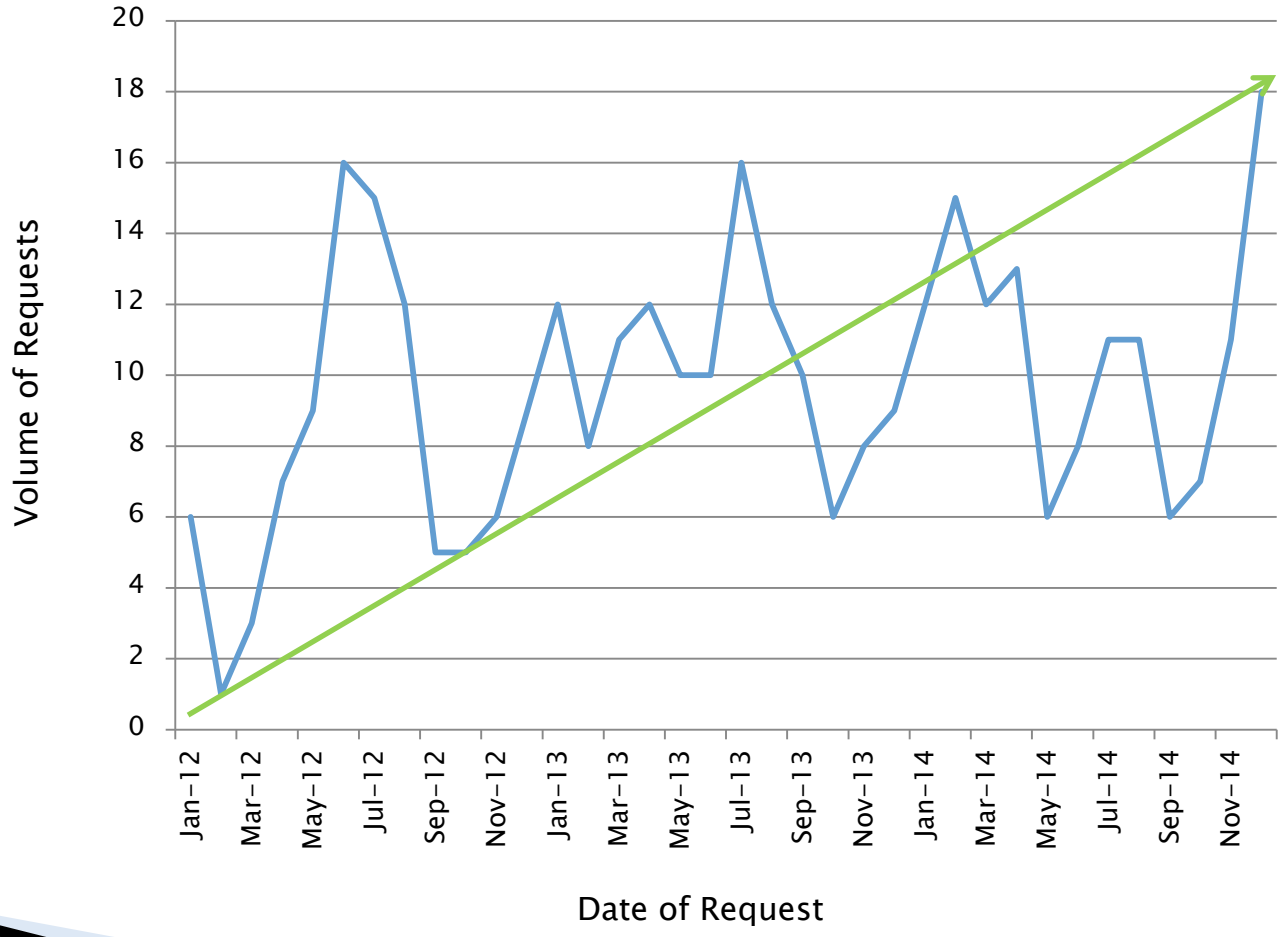
How do you measure culture change?

Volume of Requests for the Perioperative Coordination of Care Team



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Clinical Relevance: Literature suggests possible risk of long term neurocognitive deficits related to anesthetic exposure

- A 2013 article by Bong et al., in *Anesthesia and Analgesia*, describes an observational cohort study undertaken to determine whether children exposed to general anesthesia for minor surgery during infancy exhibited differences in academic achievement at age twelve years, compared with children who were never exposed to anesthesia or sedation.
- Findings include a 4.5 times greater odds of a formal diagnosis of a learning disability by age 12 years in children who had been exposed to general anesthesia.
- Although further research is needed to sort out this clinical question of causality, it seems prudent to proactively minimize the number of exposures to general anesthesia for infants and children.

Conclusion

- After a review of the literature, our team has not identified another care organization that consistently and prospectively plans for one continuous anesthetic for multiple procedures for children
- We hope that this submission shares a framework for how to begin such a program at another institution
- We celebrate the patient-focused care approach that this program has inspired in the perioperative arena at Monroe Carell Jr. Children's Hospital at Vanderbilt

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