Northwestern University Feinberg School of Medicine

# Improving Efficiency for Pediatric Anesthesia Cases in a Tertiary Care Free-Standing Children's Hospital: *An Analysis of First Case on Time Starts*

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## Introduction

- Improvement in first case on-time starts could have downstream effects such as decreasing subsequent delays, increasing OR capacity/avoiding missed revenue, improved patient/OR staff satisfaction and re-appropriate surgeon block time based on delays
- An analysis from OR Benchmarks Collaborative of 134 US facilities showed median First case on-time/early starts of 64.3%[1]
- Traditionally, at Lurie Children's Hospital on-time first case starts in mid 60% range
- Goal to improve on-time first case starts by 10% (to 76%)

## Methods

- Multidisciplinary team established in collaboration with Center of Excellence at Lurie Children's
- Cause of delay data collected and collated based on event frequency
- Factors with highest impact on improving on-time starts determined
- Plan of action for improvement based on cause of delay developed, providers educated on plan and changes implemented
- Continued data collection and analysis to verify impact on rate of first case on-time starts of implemented changes

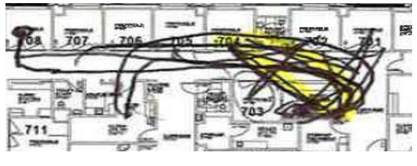
**On Time Starts Report**

| Month | | June | | | | | Weekly Average |
|---|---|---|---|---|---|---|---|
| Day | | Mon | Tues | Wed | Thurs | Fri | |
| Week 1 | 6th floor | | | | 67% | 57% | 71% |
| | 7th floor | | | | 83% | 78% | |
| | **Total** | | | | | **69%** | |
| Week 2 | 6th floor | 78% | 89% | 78% | 56% | 57% | 63% |
| | 7th floor | 57% | 63% | 38% | 50% | 63% | |
| | **Total** | **69%** | **76%** | **59%** | **53%** | **60%** | |
| Week 3 | 6th floor | 89% | 60% | 57% | 56% | 67% | 68% |
| | 7th floor | 67% | 80% | 50% | 75% | 88% | |
| | **Total** | **78%** | **70%** | **54%** | **65%** | **73%** | |
| Week 4 | 6th floor | 89% | | | | | 82% |
| | 7th floor | 75% | | | | | |
| | **Total** | **82%** | | | | | |
| Week 5 | 6th floor | | | | | | |
| | 7th floor | | | | | | |
| | **Total** | | | | | | |

## Results

- Delay causes fall into 3 major categories:
  - **Surgeon related**
  - **Patient/Family related**
  - **Other** (Pre-op coordination, anesthesia, OR setup, lab delays, first start case variability, etc.)
- **Surgeon Related**:
  - Identified small group of surgeons who account for majority of surgeon related delays
  - Met with each surgeon to determine any pattern for delays.
- **Patient/Family**:
  - Delay causes:
    - Late/Lost
    - Check-in process
  - Intervention/result:
    - Patient booklet and pre-screen messaging revision with guidance on navigation, timelines, expected travel challenges and wayfinding once at LCH
    - Modified office hours (earlier staffing), increased check-in staff on OR floors, First start cases flagged/prepped night before
    - After intervention, patient/family related delays decreased by 50%
- **Other**: Multiple gaps/challenges in preoperative process efficiency identified. Focused on pt room and RN assignments
  - Preoperative room layout/assignment challenges:
    - Patients for particular service often spread out across pre op floor
    - RNs assigned to pt upon arrival → RN room assignments spread out over preop floor → frequent travel/inability to keep visual on pt status/who is in/out of room

**Pre Op Floor "Spaghetti"**
Typical travel of one RN during preop for first start case

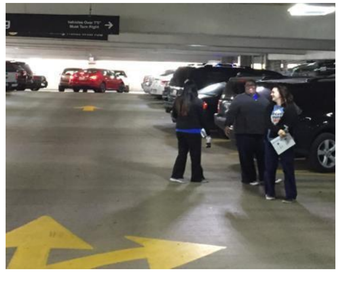


  - Preoperative room layout/assignment interventions/results:
    - Attempt to group for particular service within geographical region of preop area
    - Established pod system for care delivery
      - 4 RN per pod
      - Defined primary (pt assessment) and secondary (height/weight, pt gown, parent info/orientation, etc.) tasks for each RN/how they can help other RN in their pod
      - Identify high need/complex pts early/day prior and divide among pods to allow for RN support
      - After implementation, delay secondary to pre-op coordination decreased by 88%

## Conclusion/Discussion

- Several factors contribute to first case start delays
- By identifying major barriers to on-time first case starts at our institution we were able to create and implement a successful action plan which decreased the delays caused by patient related issues and preoperative assessment and coordination issues
- We have seen an improvement in our monthly on-time start percentages to date, and continue to search for ways to improve.
- We plan to continue to address other areas of delay (intra op/procedural staff , floor/ICU delay, and equipment delay) and evaluate the downstream effects on OR efficiency, patient and provider satisfaction, and avoidance of missed OR revenue.

**Confusion in the Parking Lot**
Staff attempt to navigate patient parking garage using posted signs alone



## References

1. Foster, Tina. Data for benchmarking your OR's performance. *OR Manager*.2012; 28: 13-16