INTRODUCTION

First case delays are a preventable way to improve OR efficiency. We hypothesize that targeted interventions on identified causes of first case delays can be effective.

- Inefficient OR Scheduling leads to an average of $1430 to $1700 per canceled case
- National average of cost of running OR is $100 per minute

Consequences of Late Case Starts
- Increase in overutilization costs
- Patient, Surgeon, and Anesthesiologist anxiety
- End of the day case cancellations
- Patient dissatisfaction
- Patient anxiety is associated with increased morbidity and mortality in cardiac patients

METHODS

We prospectively followed 7 pediatric operating rooms in CHAM and monitored first case on-time start (yes/no) for the months of Jan, Feb, Apr, and May. Our independent variables included anesthesia related covariates (resident, technologist, and attending factors) and patient covariates (patient on-time, β-HCG, NPO, etc.). Reasons for first case delays were collected by circulating nurses and corroborated with the OR floor runner daily. Each first case delay was then reviewed by 3 independent anesthesiologists and corroborated with the OR floor runner daily. Each first case delay was then reviewed by 3 independent anesthesiologists and attributed to “Patient”, “Anesthesia”, “Surgical”, “Equipment”, “Transportation”, or “Other” factors.

The top three specialties with a greater magnitude of case delays were targeted intervention in the month of March. The interventions were: (1) less double coverage of chronically late start time locations by specialty and (2) administrative reminders. First case start times were monitored post-intervention in months April and May (on-time start yes/no). Thus, we collected data pre-intervention Jan/Feb, piloted our intervention in March, and collected data post-intervention Apr/May.

RESULTS

During the pre-intervention months of January and February there were 47 case delays of which 14 and 16 were attributed to patient and anesthesia related factors, respectively. Pediatric orthopedic, pediatric urology, and pediatric cardiothoracic had the greatest number of late start times and were targeted for intervention. Post intervention, during the months of April and May patient and anesthesia related factors dropped to 5 and 5, respectively. The overall amount of staff and surgical volume was unchanged during the intervention months of January and February there were 47 case delays, allow for the development of a rational intervention, and demonstrate potential effects post intervention.

This QI research project demonstrates the benefit of observation and data collection can establish a baseline incidence of first case delays, allow for the development of a rational intervention, and demonstrate potential effects post intervention.

DISCUSSION

This QI research project demonstrates the benefit of observation and data collection can establish a baseline incidence of first case delays, allow for the development of a rational intervention, and demonstrate potential effects post intervention.

Interventions included (1) and (2) and led to a statistically significant difference in on-time starts. It is important to note that surgical factors related to first case delay increased post intervention. This weakens that proposition that anesthesia and patient tardiness can be attributed to local weather or traffic related concerns (since it affects anesthesia, patient, and surgery equally).

Potential limitations of this study include: (1) delays were recorded by nursing staff and subject to bias (i.e. no nursing delays were recorded) (2) we collected categorical “yes/no” delay status as opposed to continuous data (i.e. minutes of delay) (3) Seasonal and secular effects could not be captured in 4 months. Further follow up using an automated system measuring overall delayed minutes over a full year may improve the validity of the study by limiting these biases.

REFERENCES