Improving Team Performance During the Pre-Procedure Time-Out

Mandie Street, RT(R)(MR)1,2; Prathusha Tatineny, M.D.4; James R. Duncan, M.D., Ph.D.1,2,3
1Washington University School of Medicine, St. Louis, MO, 2Mallinckrodt Institute of Radiology, St. Louis, MO, 3St. Louis Children’s Hospital, St. Louis, MO, 4St. Matthew’s University, Orlando, FL

ABSTRACT

A systems-based approach to improving healthcare requires strategies that measure performance at both the individual and group level. The resulting information provides feedback for opportunities for improvement. In this study, we focused on a team activity that occurs during every invasive procedure, the pre-procedure timeout. A system for capturing and analyzing team performance was developed. Early results identified opportunities for improvement in the team’s performance as well as the methods used to measure and analyze performance. The effectiveness of the resulting process changes have been assessed by continued data capture and analysis. While this initiative has led to measureable improvements in timeout performance, other benefits have also been observed.

METHODS

Data Capture and Analysis

Pediatric Interventional Radiology (IR) suite was equipped with a "flight data recorder" that is used to record every case. Recordings from two randomly selected cases/week are reviewed to assess compliance with timeout protocol.

• Scoring rubric was developed in Spring 2009
• Rubric was revised in Oct 2009 and May 2010

Feedback

Results posted as a run chart in the IR control room

• Results are updated each month
• Discuss opportunities for improvement at monthly meeting

RESULTS

Timeout Performance

Performance has improved - now rare to score <80

Scoring is quite stringent – timeout must be completed before pre-procedure ultrasound or sterile prep

Room used by other services – common cause for inefficient timeout was change in workflow

Room occupied by other services

Figure 2: Screen shot of video from the recording system

Figure 3: Timeout scores from the last 15 months. Vertical blue lines indicate when changes in the scoring rubric occurred. Common failure modes are indicated by colored symbols.

Figure 4: Time required to run the checklist. One advantage of the recordings was ability to extract this data. Average time was 0.60 min, Max was 0.18 min, Max was 1.40 min.

Figure 5: Initial scoring system for timeouts.

Figure 6: Current scoring system

Figure 7: Item analysis shows that the score for reviewing prior studies improved markedly between June 2009 and April 2010

CONCLUSIONS

Acceptance

• Initial buy-in required on two levels
• Recording procedures and scoring the timeouts
• Incorporated these features into the opening of a new room
• New staff, nurses and technologists
• New workflow for physicians

• Timeout as an investment in quality patient care
• Takes 30 seconds
• Comparable to buckling children into car seats or using a bike helmet
• Has caught multiple near misses
• Hepatic allergy, safety strap, lack of protective gear

Team building

• Everyone is on the same page at the start of the procedure
• “We do the best timeout in the hospital and have the data to prove it”
• Culture of safety

Importance of multiple analysis and feedback cycles

Continually identify opportunities for improvement
• Lock in the incremental gains and avoid backsliding

Efforts to improve performance are investments

• Real resources are required
• Time required to run the checklist
• Funds spent to acquire the recording system
• Time spent analyzing data and reviewing results
• Time spent planning improvements

Investments provide returns

• Culture of safety
• Team morale – emphasize the good but feed the desire to improve
• Hard to measure the total return on investment
• To Err is Human but what is the value of helping create systems that
• Minimize error frequency
• Diminish the severity of errors when they inevitably occur
• Detect errors before they harm a child

ACKNOWLEDGEMENTS

Team members:

Radiologists – Michael Darcy, MD, Jennifer Gould, MD, Robert McKastry, MD, PhD, Nagarathan Mani, MD, Daniel Picus, MD, Nael Saad, MD, Technologists – Melissa Fitzpatrick, RTR(R), Monica Merki RTR(R), Kim Welch, RTR(R), Jennifer Heizler, RTR(R)
Nurses – Samantha Keyte, RN, Anne DeToy, RN, Shannon Church, RN, Anne Slayden, RN