

# REDUCING SERIOUS SAFETY EVENTS IN PERINATAL UNITS

## How a Nationally Recognized Leader in Perinatal Safety Failed and What Was Done to Reestablish an Exemplary Safety Record

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### Background

Starting in 2003, the Seton Network Perinatal Safety Team developed and implemented transformational practices in labor and delivery with the aim of reducing the rate of preventable birth trauma. This resulted in a 93% reduction in the birth trauma rate in 2006. It also resulted in a 36% reduction in the use of vacuum and forceps. During the first three years of the project (FY2004 to FY2006), the average length of stay for infants admitted to neonatal intensive care declined by 80% as compared to the previous three years (15.8 to 3.1 days). As a result, in 2007 the Joint Commission awarded the Seton Family of Hospitals the Ernest Amory Codman Award for outstanding achievement in the effective use of performance measures, quality, and safety outcomes. In a follow up report published in the Joint Commission's *Journal on Quality and Safety*, the Seton Network Perinatal Safety Team authors prophetically wrote "As with any improvement effort, perhaps our greatest challenge over time will lie in our ability to sustain our gains. The diligent labors of serious, caring professionals alone cannot hold those gains for very long." Beginning in 2014, Seton Medical Center Austin underwent multiple simultaneous changes including the implementation of a new electronic medical record, alterations in Perinatal staffing models, a 22% turnover in experienced Perinatal nursing staff, reorganization of Seton's Network Quality and Safety Department, a complete turnover in administrative site leadership, and Seton Medical Center's transition from a community-based hospital to a tertiary care academic medical center. From October 2014 until July 2015, Seton Medical Center Austin subsequently suffered five Perinatal Serious Safety Events (SSEs), including three infant deaths, severe harm to one infant, and temporary harm to one mother. In addition, there was an increase in minor or temporary harm events, near misses, one Safe Harbor Call, and many secondary victims related to the SSEs.

### Project Aim

The aim of the project was to create a safe and reliable perinatal environment by improving communication among team members and reducing SSEs related to errors in interpretation and management of fetal heart rate tracings.

### Project Design/Strategy for Change

An interdisciplinary team was formed including physicians, leadership, nursing, education, and quality experts. An immediate assessment was completed of the current state by utilizing focus groups, culture of safety surveys, labor and delivery competencies, vacancy rate data, staffing skill mix, equipment, and processes. A Root Cause Analysis was completed for each Serious Safety Event. Lastly, a nationally recognized expert in Perinatal safety was consulted in order to provide additional expertise and guidance. Findings from these actions included:

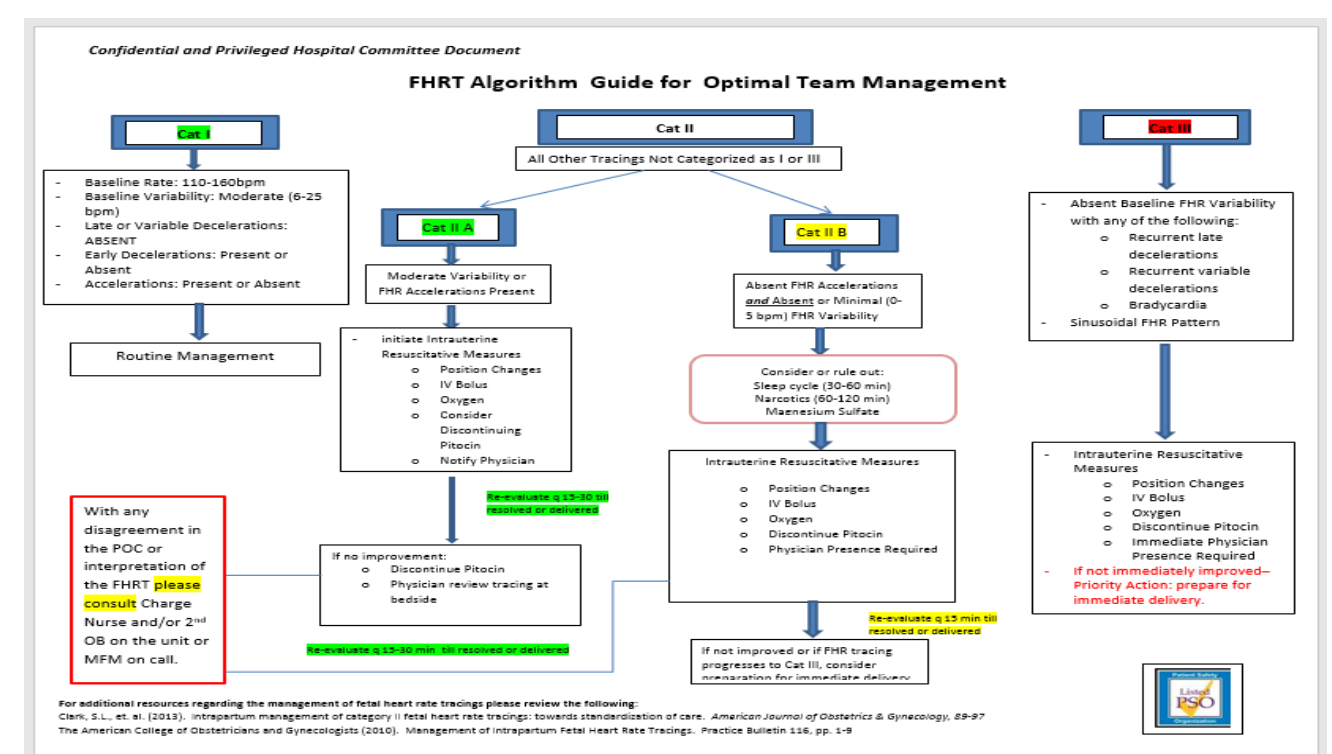
1. There was a system-wide failure to recognize the insidious degradation of the culture of safety.
2. Standardized processes were being skirted or ignored leading to critical shortages in supplies and/or equipment available at the bedside.
3. The plan to transition Seton from a private community-based hospital to a tertiary care academic medical center was poorly planned and poorly executed.
4. Nursing and ancillary staffing models were entirely ill-equipped to accommodate the volume and acuity of the academic service.
5. There were obvious and pervasive deficiencies in fetal heart rate tracing interpretation and management amongst the nursing and medical staff.
6. In each case, ineffective communication between care team members was cited as a root cause of patient harm.

After reviewing all of the contributing factors, it was determined that the model intervention would be the adoption of an evidenced-based communication program designed specifically for complex and high stress healthcare environments. TeamSTEPPS (Team Strategies and Tools to Enhance Performance and Patient Safety) was developed jointly by the Department of Defense (DoD), and the Agency for Healthcare Research and Quality (AHRQ) to improve institutional collaboration and communication relating to patient safety and is based on more than 30 years of research and evidence. TeamSTEPPS training programs have been shown to improve attitudes, increase knowledge, increase retention, improve behavioral skills, and have been shown to have a moderate, positive effect on team outcomes (Salas, et al. 2008). Additionally, a novel fetal heart rate tracing interpretation and management algorithm was developed and implemented.

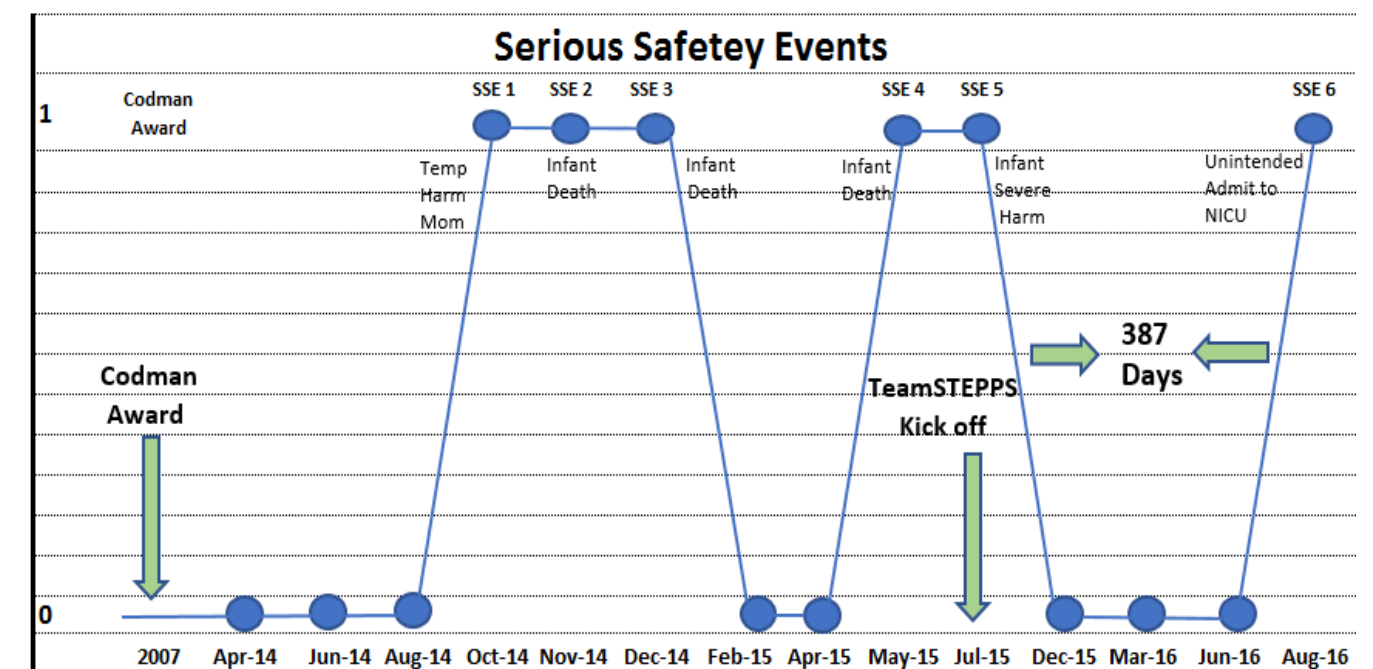


### Changes Made

- Standardized the interpretation and management of fetal heart rate tracings using the innovative fetal heart rate tracing algorithm. Adoption and use of the algorithm allowed for early recognition and timely interventions for abnormal fetal heart rate tracings. The algorithm incorporates common language and levels of escalation to be used when communicating about a fetal heart rate tracing.
- Eight physician and nurse champions were identified to form dyad teaching and performance improvement teams.
- Mandatory TeamSTEPPS training for all Perinatal team members.
- The following areas were prioritized for immediate focus:
  - a. Room Readiness including right equipment, right placement, right process for re-stocking;
  - b. Right skill mix for attending all deliveries.
  - c. Making the Right Call: High risk NICU team to right room at the right time.
- Adopted SBAR as the standard form of communication among team members.



### Outcomes



### Sustainability

Workgroups addressing prioritized areas of focus continue to meet monthly and evolve as needed. Progress of all workgroups is discussed and reported on monthly at the general TeamSTEPPS Change Team meeting.

In addition, TeamSTEPPS classes are offered quarterly and continue to be taught by a physician/nurse dyad. All new team members as well as all resident physicians are required to attend at least one session.

Education regarding the use of the FHR algorithm continues to be disseminated and reinforced in the following ways:

- A fetal heart rate tracing module is now a part of the annual competency evaluation for all Labor and Delivery nursing staff. The module assesses fetal heart rate strip interpretation skills and reinforces appropriate use of the algorithm.
- The algorithm is taught to all new Perinatal nurses as part of their onboarding process.
- The algorithm has been presented at all network delivery sites and universal adoption of the algorithm is ongoing.

### Next Steps

Ascension Seton operates four Perinatal Units in Central Texas and collectively delivers over 8000 babies a year. In much the same way that patients in cardiac telemetry units are remotely monitored, Ascension Seton is evaluating the creation of a continuous centralized fetal heart rate interpretation unit staffed by dedicated Perinatal nurses. This unit will provide objective and unencumbered secondary oversight to assist physicians and nurses providing care at the bedside. Plans for network implementation of TeamSTEPPS are also being developed.

Salas, E., DiasGranados, D., Klein, C., Burke, C.S., Stagl, K.C., Goodwin, G.F., & Halpin, S.M. (2008). Does team training improve team performance? A meta-analysis. *Human Factors*, 50(6), 903-933.

