Background: Although the electronic medical record (EMR) has been shown to reduce errors and improve patient safety, the rapid and complex nature of trauma resuscitations has prevented many trauma centers from successfully implementing the electronic medical flow sheet (EMF) for trauma resuscitations. Our goal at Nationwide Children’s Hospital was to create an ETF which overcomes these barriers thereby improving patient safety.

Development Process: The EMF planning committee was comprised of a multi-disciplinary group of physicians and nurses from the trauma program and emergency department (ED). Although each person had key input for successful program implementation, the trauma nurse leader core team, the ED physician with information technology (IT) knowledge and the ED nurse/EMF analyst played a key role by designing a tool set in the EMF that the nursing staff could navigate with ease.

Nationwide Children’s Hospital uses EMR software supplied by Epic Systems Corporation, Verna, Wisconsin. The software enables documentation in a task-based format rather than a linear work-flow based approach to documentation. The design team spent two years developing a flow sheet to mimic the paper flowsheet in a clear, logical pattern as agreed upon by the trauma nurse leaders. Our custom builds within the EPIC system made our success unique including customization of the primary and secondary survey and the output report. This contributed to our successful ACS review after ETF implementation in December, 2012.

Sample key benefits in the design process included the following:

- Visual cues were created in the primary and secondary assessment which alerted the nurse to the need for interventions.
- The one-step medication function allows for simultaneous placement, acknowledgement, signature time stamp and a co-signature request for the medication order.
- Cumulative documentation of fluid administration from time of arrival and including pre-arrival fluid totals.
- Timely display of laboratory and imaging results in the event log at the time of input resulting in a more rapid notification time to the care providers.
- Real-time documentation down to the second which is vital in the fast-paced trauma resuscitation environment or during a code situation.
- Stored data from the EMR including the medical history, current medications, previously recorded weight and allergies.

Education: The strategy for implementation included an education checklist which each trauma nurse needed to complete prior to live documentation in the ETF. The checklist included the following requirements:

- 2-hour overview class with the trauma EMF
- Document 2 scenarios from “paper charts” into the playground environment
- Document on 1 patient in the playground environment during a real-time trauma alert.
- Document on 1 patient in the production environment during a real-time trauma alert with a second nurse cross-referencing for accuracy.

Barriers to implementation and future research implications will also be addressed. Our goal is to share our successes and failures along the way to help other facilities with their design process so that universal adoption of the EMF can be accomplished.

Notes: