Using Epic Trauma Narrator and Monitor to Improve Teamwork in the Trauma Bay
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Purpose: Our trauma narrator and Epic monitor project was designed to increase the workflow efficiency, increase team awareness of current status/plan/documentation, decrease time spent charting, and improve the accuracy of data captured for both documentation and billing purposes. We previously were on a paper flowsheet, which went missing or were incomplete more frequently than desired. We went from this flowsheet to an Epic narrator module, which we then designed to flow into a large monitor on the wall with a specific type of “monitor” readout that allowed the entire team to visualize vital sign trends, medications already given, laboratory/radiologic studies ordered, and be able to pull up any results from the visit. Physicians are now able to pull this narrator data into their notes, decreasing their time spent on documentation. Other goals that are still in progress involve an interface of discrete data fields directly into the trauma registry and increased report-writing capabilities.

Resources: Institutional resources included planning for approximately six months of FTE (staffing) for 30% project manager, 100% Epic ASAP resource, 25% Clin Doc resource, additional 250 hours of other IT support to total approximately 1500 hours of staffing for development. Additionally, approximately 750 hours of emergency department and trauma personnel time were required for education, rollout, and dual charting during go-live. Since the monitors had to be mounted, there was special permitting required as well. Additional hardware purchased included two computer-on-wheels units, two workstations to run the Epic monitor module, two 55 inch flat screen monitors with mounting hardware, and the wireless keyboards with trackpads to use with the large monitors. During discovery, there was some information gathering done by the trauma program manager that included literature review and discussions with other facilities that had implemented the trauma narrator.

Description: The first step, after project planning, involved designing the Epic Trauma Narrator to fit our institution’s needs. We modeled it after both another institution’s working design and our paper trauma flowsheet to ensure the required data was being captured. After development, there was a month of training our staff nurses using their annual required simulation experience as the opportunity to roll out the new documentation. There was then double documentation (paper and electronic) for the two week go live time frame to ensure complete documentation and to assess the difference in documentation. After the roll out, construction was completed and the large monitors were mounted on the walls. During this construction, the “ICU Monitor” widget from Epic was customized to fit our needs and was beta tested on a smaller desktop. After construction, the team was then able to see documentation, results, events, and orders in real time on a screen. Registry integration with Epic will be next.

Effectiveness: Trauma Clinician survey provided data pre and post implementation of Epic Monitor. The data reflected clinician perception of the percentage of the time during the resuscitation that they know the current vital signs of the patient, when a medication ordered has been given, when a fluid bolus has been initiated, and the ability to see intervention timing in relation to vital sign response without leaving the patient’s bedside. Further questions gathered information regarding any team member being able to immediately be aware of the mechanism of injury, age, and weight of the patient when they first arrive to the resus room. Measures indirectly correlated with care coordination, teamwork, and efficiency for optimal care.

Target goal:
• 25% increase above baseline results from pre-implementation.
• Lowest percent increase from baseline: 37%
• Highest percent increase from baseline: 169%
• Average percent increase: 105%

Lessons Learned: Lessons learned for this project would certainly include the importance of looking at each phase of a project this large as its own mini-project, to not underestimate the importance of reaching out to other facilities who have already successfully implemented a similar project, and just plan for things to take significantly longer whenever construction is involved. We did have clinical staff involved in the design and implementation, which was very helpful,
however, getting our Epic team more contact with other facilities who had already implemented similar set ups would have been helpful, as some of the features we are using are not extremely common yet. The monitor is certainly helpful to improve teamwork and care coordination, and has other helpful features such as medication timers and the ability to look at radiology studies. One con/lesson learned is that patient privacy can become an issue if the appropriate curtains are not pulled.

**Conclusions:** As mentioned above, the pre and post survey data was overwhelmingly supportive (goal of 25% improvement in awareness of certain aspects of care with an overall average improvement of 105%) and the staff feedback has been also very positive. The actual Epic set up for the monitor took more fine-tuning than anticipated but staff were very helpful in this aspect and appreciated being involved in such a visible and useful project. Overall, I would recommend a similar Epic Trauma Narrator and Epic Monitor integration in other trauma centers who wish to increase the teamwork and care coordination for their patients.