Videotaping Traumas—Reducing Variation in IV Fluid Administration

**Background**

- **Gap identified:** When reviewing video of the traumas at Comer over the past few months, it was noted that trauma patients were occasionally not receiving intravenous fluid boluses while in the trauma bay.
- **Why this intervention is so important:** Trauma is the leading cause of death in pediatric patients >1 year of age, which is highlighted by the fact that shock is the second highest cause of death in trauma patients. The most common cause of shock in children is hypovolemia, which is exacerbated by the higher proportion of fluid to body surface area in children. Therefore, starting fluids early is key to helping prevent unwanted mortality and morbidity. We do not want late signs of shock like hypotension to be the time we respond with fluids.

**Goal**

AIM: To increase the percentage of starting intravenous fluid boluses while patients are in the trauma bay to 90% within 2 months of start of the intervention. Intervention date 12/31/2016.

**Intervention Process**

- Review baseline data on start times of intravenous line placement.
- Assess if problems with intravenous line placement was cause for missed boluses.
- Review baseline data on start times of intravenous fluid bolus.
- Formulate educational handout, with focus on the Gap, Why it is important, How it will be measured, and When feedback would be given.
- Education handout was reviewed and given to each nurse in the Comer Emergency department on a one on one, face to face educational meeting.
- Measurements for both intravenous line placement and fluid bolus start were retrieved via videotaping, assuring the most accurate timing.

**Results**

- **Pre intervention:**
  - 4/21 patients had no fluid while in the trauma bay. Total missed opportunity 19%.
  - Noted to have wide variation in timing of intravenous fluid boluses.
- **Post Intervention:**
  - 1/21 patients had no fluid while in the trauma bay. Total missed opportunity 4.7%.
  - Noted to have less variation in timing of intravenous fluid boluses.

**Conclusions and Next Step**

- **Conclusion:** The department was able to meet and surpass its goal.
  - **Goal:** 90% achieved, surpassed to >95%.
  - **Goal:** Decreased variation in timing of boluses.
- **Next Steps:**
  - Sustain: Goals were met but in order to address sustainability and prevent a drift back to the old system, we will continue to monitor these outcomes.
  - Spread: Spread to complete those intravenous fluid boluses while in the trauma bay.
  - Spread: Spread to other areas that videotaping can help direct quality improvement efforts and help overcome recall bias.

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