

# Traumatic Brain Injury (TBI) and Intracranial Pressure Monitoring (ICP) Clinical Presentation versus Data Interpretation

Darlene Sweet, MSN RN CCRN, Justin DiLibero DNP, RN APRN-CNS, Martina Stippler, MD, Bonnie Butt, CSTR CAISS

Beth Israel Deaconess Medical Center

## Introduction/Problem

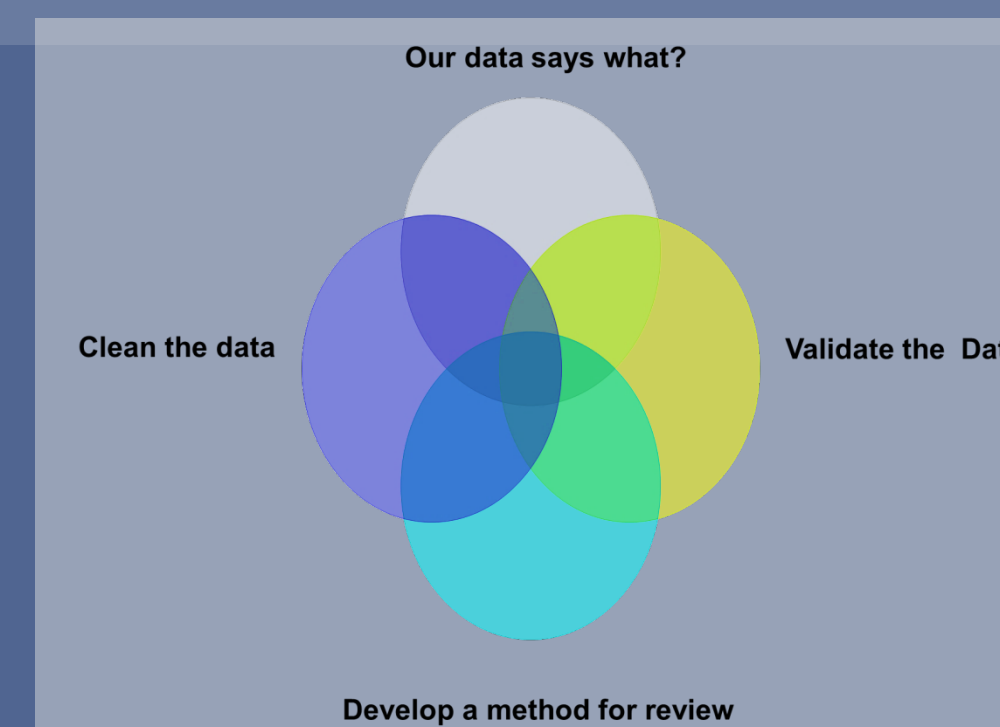
### BACKGROUND:

The American College of Surgeons (ACS) monitors guidelines and clinical practice to ensure that optimal care is provided to the injured patient. During our last Level I Trauma Center Re-verification we were questioned about our high number of Traumatic Brain Injured (TBI) patients and our low number of Intracranial Pressure Monitoring (ICP) monitor placement in these patients. The ACS application required that we use the initial Glasgow Coma Scale (GCS)  $\leq 8$  for all patients with TBI. After retrospective review, we determined that this was a data issue and not a clinical practice issue. Ensuring accurate data is important for reporting purposes and to the identification of meaningful opportunities for improvement.

## Aim/Goal

### OBJECTIVE:

To develop a process with the Neurosurgery team to ensure that our data matches our clinical practice



## The Team

- Darlene Sweet, MSN RN Trauma Program Director
- Justin DiLibero, DNP, RN APRN-CNS Neurosurgery Team TBI Coordinator
- Martina Stippler, MD Neurosurgeon
- Bonnie Butt, CSTR, CAISS Trauma Registrar

## The Interventions

### Ensuring accuracy in our reporting data:

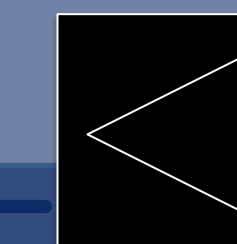
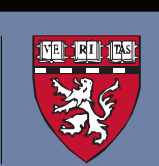
- Meetings were scheduled with Neurosurgery and Trauma  
2 meetings were held to further discuss the weakness described by the ACS during our Level I Site Review
- Retrospective review of all trauma patients with TBI and a GCS  $\leq 8$  with and without ICP monitor placement was done by the trauma and neurosurgery department
- Interpretation of data capture and report writing was done by the Trauma Registrar
- Identification of data reporting elements versus clinical decision making allowed for a quick resolution of the problem
- Validation of the trauma registry report is completed by neurosurgery and trauma every month. Clinical decision making is captured in a separate report and maintained by the trauma department. All data is then cleaned within the trauma registry to ensure accurate reporting.



*For more information, contact:*

Darlene Sweet, MSN RN, Trauma Program Director, [dsweet1@bidmc.harvard.edu](mailto:dsweet1@bidmc.harvard.edu)





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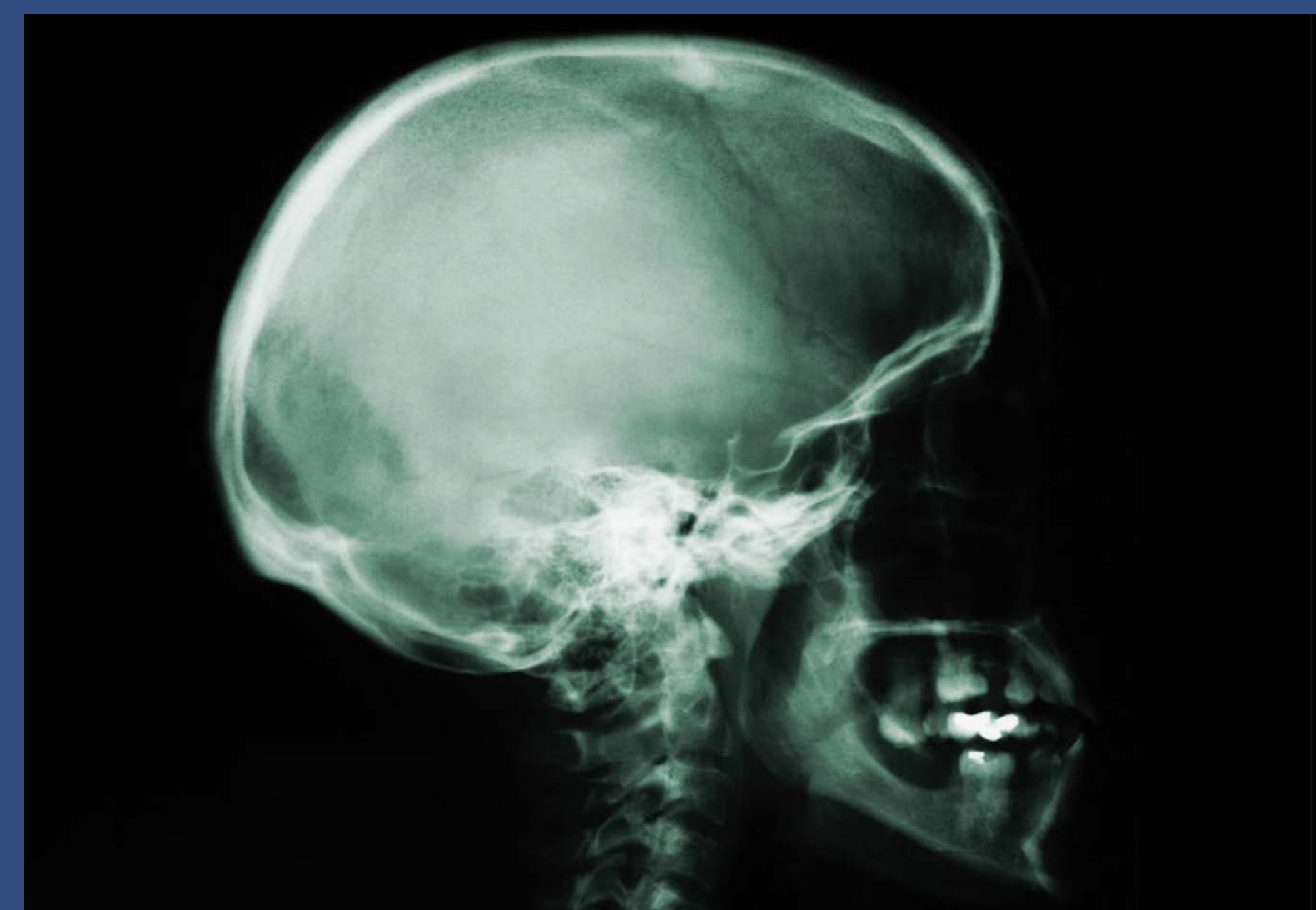
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## Results/Progress to Date

### • Data Cleanup:

- In some patients with an initial documented GCS of  $\leq 8$  the actual GCS was found to be  $> 8$  on assessment by the neurosurgery team
- Among patients with an actual GCS  $\leq 8$  some patients experienced an improvement in GCS to  $> 8$  in the first 24 hours
- This data was not captured in the trauma registry
- Some patients were made CMO for un-survivable brain injury and/or died within the first 24 hours removing them from candidacy for ICP placement
- Data cleanup and clinical decision making validation was necessary in order to ensure accuracy in data reporting



**Traumatic Brain Injured Patients and the need  
For an ICP = Clean Data**

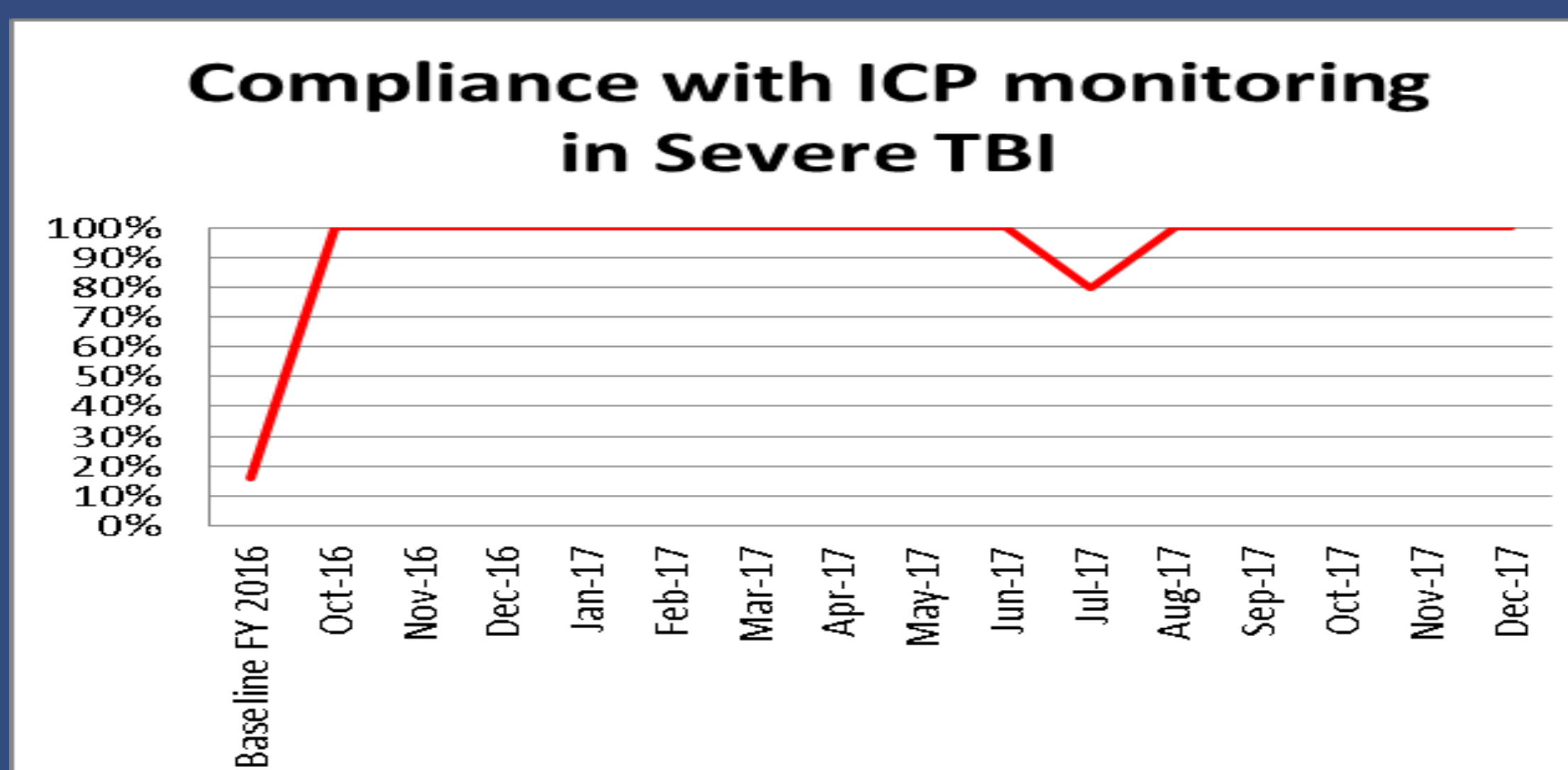
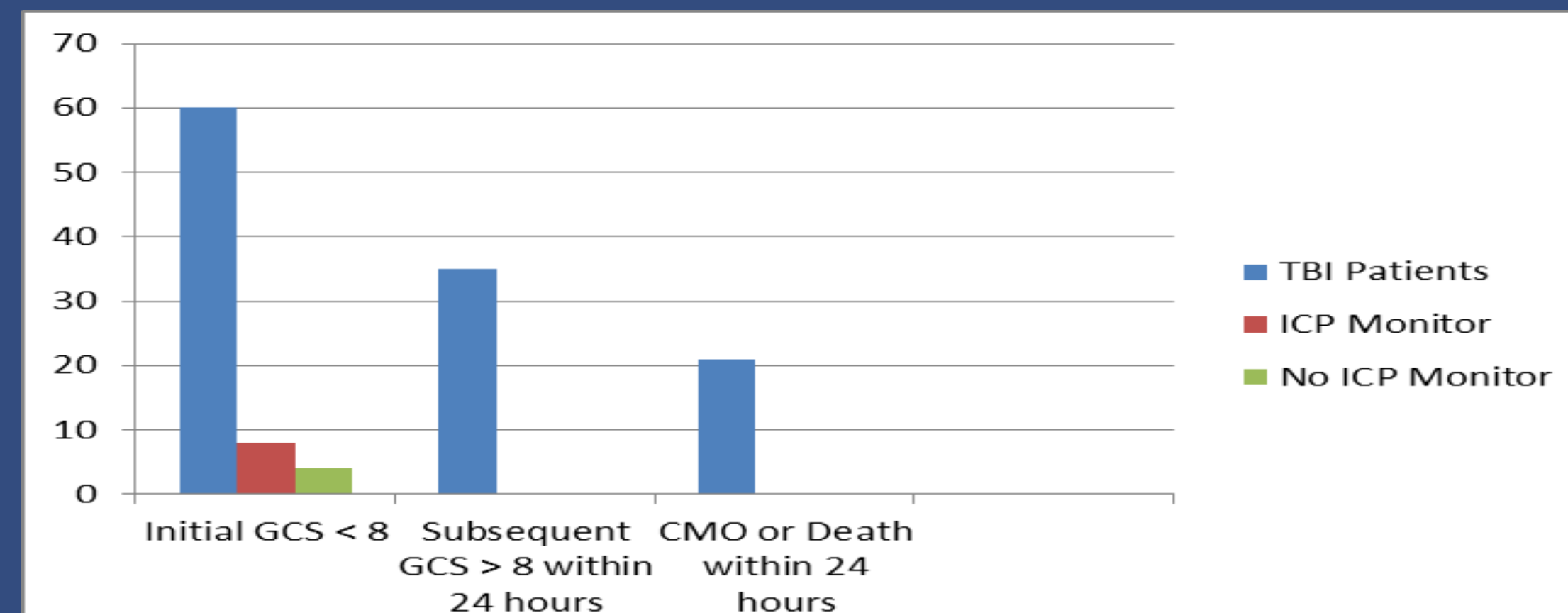
## Next Steps

- Ongoing monitoring of all TBI patients and ICP monitoring placement will occur
- This project has allowed us to see and understand our data reporting more clearly. We are now ensuring that all our data and data definitions are accurate by reviewing our ACS reporting data on a monthly basis.
- Darlene Sweet, MSN and Justin DiLibero, DNP CNS plan to speak at a Grand Rounds and hopefully an upcoming conference to help others with defining data elements and cleaning the data

## Conclusion

### Monthly Review:

- Trauma Registrar sends out the TBI report to both Trauma Director and Neurosurgery Team TBI Coordinator
  - Monthly review of all patients is done by both teams
  - Outliers are sent to Dr. Stippler for further review and cases flagged are presented at the Trauma Committee M&M meeting.
- Validation is kept in a data base and maintained by the Trauma Department
- Changes in the GCS within the first 24 hours are then documented in the Trauma Registry and new reports are run to ensure accuracy in future data reporting



**For more information, contact:**

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