Background:
In 2016 there were approximately 700 pediatric trauma patients (<16 years old) admitted to Duke Hospital. Of those patients, 300 would be eligible for TBI screening from Speech Therapy based on mechanism of injury: gunshot wound, MVC, assault or non-accidental trauma, fall, bicycle, sports, ATV or other blunt force trauma. Approximately 1/3 or 100 or theses patients will fail their screen indicating that they have a mild to moderate head injury. This is our target audience for our booklet. The guidelines were created to help ensure consistency in the treatment and care of the patient admitted with a TBI.

Details of Innovation:
The Pediatric Concussion/ Traumatic Brain Injury (TBI) Education Booklet is a combined education effort from Pediatric General Surgery, Pediatric Speech Therapy, Pediatric Physical Therapy, Child Life and Nursing Staff. The speech therapy department had created a hand out that was being distributed to patients once they were identified for a TBI screening. Unfortunately, many patients were being missed due to inconsistent identification of patients at risk for TBI. By creating an order set that is implemented by the admitting trauma team we hope to more reliably identify and treat patients with a TBI while they are admitted. The guidelines include an order set, plan of care templates for nursing, a speech evaluation, and the education booklet.

Outcome:
The nursing staff participated in a survey the first two weeks of September 2017 to evaluate their current understanding of, and comfort with, concussion management. The guidelines were presented at a pediatric Grand Rounds (targeting pediatric providers) and at a nursing skills day (attendance is required for all nursing staff) at the end of September or early October. The nurses were resurveyed again in January 2018 to evaluate improvement in understanding and comfort.

Implications:
Concussions are a hot topic in pediatric care today. There has been a large focus on return to school and return to play but less focus on treating patients in the acute phase of their concussion while still admitted to the hospital. By implementing guidelines we hope to decrease the number of patients missed based on provider bias and error and to improve the knowledge and comfort of the nursing staff regarding concussions.

Open ended question:
How does implementing standardized order sets and education improve patient care?

Funding:
A Children’s Miracle Network Kid’s Care Grant funded the printing and design of the Pediatric Concussion Education Booklet.

References:


Introduction

The goal of this project was to create a pediatric inpatient concussion program to improve the care of concussion patients in the hospital as well as the comfort level of the nurses caring for these patients.

Objectives:
1. The learner will be able to describe implementation of inpatient concussion guidelines from a multidisciplinary team approach
2. The learner will be able to discuss the self identified preferred method of learning by the nurses
3. The learner will be able to identify two areas that nurses felt that they had improved knowledge after concussion program education

Implementation

- Key stake holders were identified and engaged in this project:
  - Pediatric General Surgery (Trauma)
  - Pediatric Neurology
  - Nurses on an inpatient pediatric floor
  - Speech Therapy
  - Child Life
  - Physical Therapy
  - Occupational Therapy
- The nursing staff was surveyed about their knowledge and comfort
- The preferred method of learning was identified. See figure A.
- A patient and family education booklet was created by the key stake holders and approved by the patient education committee
- A nursing order set was created
- Concussion care and booklet were reviewed at a nursing skills day that was attended by all participating pediatric nurses
- The concussion care was reviewed at Pediatric Grand Rounds for all residents and Attending Pediatricians
- The nurses were re-surveyed 4 months after implementation

Outcomes

If you need to learn about a patient care related topic, which is your preferred method of learning?

- Ask a more experienced colleague (31%, 33.9%)
- Consult a text book (14%, 13.9%)
- Read an article (3%, 8.9%)
- Search on the internet (5%, 15.2%)
- Complete an internet based continuing education course (23%, 6.1%)
- Attend a face-to-face continuing education class in service (30%, 30.9%)
- Attend a conference (5%, 6.1%)
- Other (1, 3.9%)

Figure A

Please tell us what you feel your level of knowledge is on each of the following topics:

Concussion/mTBI clinical guidelines

<table>
<thead>
<tr>
<th></th>
<th>Pre Intervention</th>
<th>Post Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerebral concussion</td>
<td>Low (13, 6.9%)</td>
<td>Medium (41, 6.9%)</td>
</tr>
<tr>
<td>Lower extremity</td>
<td>Low (13, 6.9%)</td>
<td>Medium (41, 6.9%)</td>
</tr>
<tr>
<td>Upper extremity</td>
<td>Low (13, 6.9%)</td>
<td>Medium (41, 6.9%)</td>
</tr>
</tbody>
</table>

Figure B

Concussion/mTBI Care plans

<table>
<thead>
<tr>
<th></th>
<th>Pre Intervention</th>
<th>Post Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerebral concussion</td>
<td>Low (13, 6.9%)</td>
<td>Medium (41, 6.9%)</td>
</tr>
<tr>
<td>Lower extremity</td>
<td>Low (13, 6.9%)</td>
<td>Medium (41, 6.9%)</td>
</tr>
<tr>
<td>Upper extremity</td>
<td>Low (13, 6.9%)</td>
<td>Medium (41, 6.9%)</td>
</tr>
</tbody>
</table>

Figure C

Conclusions

- The implementation of an inpatient concussion program requires the buy in from multiple specialties and the nursing staff to be successful
- Creating inpatient concussion guidelines promotes consistency of practice across providers and services
- Providing an education intervention based on the nurses preferred method of learning increases their knowledge and confidence in caring for patients in the acute care phase of a concussion

References


Acknowledgements

Special thanks to the Children’s Miracle Network for the Kid’s Care Grant that funded the printing and design of the Pediatric Concussion Education Booklet.