BEST PRACTICE

Abstract Title: Benefits and Barriers to Pediatric Trauma Follow-up Care: A Mixed Methods Study

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Introduction: Unintentional trauma continues to be the leading cause of morbidity and mortality in children. The mechanisms of injury vary with the age of the child. The multi-disciplinary trauma team stabilizes and treats the injured child; eventually the child is discharged home. Trauma clinic and/or subspecialist follow-up is generally recommended. Little is known about the factors influencing a family's ability to follow-up for their child's traumatic injury, although clinicians need to follow-up to assess potential for additional injuries as well as adherence to post-trauma care. Recent studies exploring trauma follow-up care were not pediatric focused. This is a single site convergent parallel mixed-methods study targeting English or Spanish-speaking parents whose child was hospitalized for a traumatic injury at an academic pediatric level 1 trauma center.

Methods: Convenience and purposive sampling strategies were used to obtain the sample for the quantitative survey and qualitative interview, respectively. The investigator-designed anonymous survey was reviewed for face and content validity by a co-investigator. Parents who came with their child to the Trauma Follow up Clinic were given a paper/pencil survey to complete. Data were analyzed with SPSS, version 25.

The individual interview guide was developed by the investigators. The interviews were conducted in a private setting either over the phone or in person by a trained member of the research team, either in English or Spanish. The recorded interviews were transcribed verbatim, imported into Atlas.ti, coded independently by 2 investigators, and then analyzed for relationships between and within text segments.

Results: 50 surveys were completed; 30% were completed in Spanish. Mean age of the injured child was 6.03 years and mean parent age was 34.52 years. Mean distance from the home to the hospital was 20.84 miles (standard deviation = 21.15). 54% of children had head injuries. Children with non-head trauma injury were more likely to require surgery compared to those with head injuries (p=0.021). There was no association between gender and ICU stay or surgery.

20 individual interviews were conducted. 95% of respondents were female and 15% of interviews were done in Spanish. Major themes included: barriers to follow up care, desired changes to ease follow-up care, satisfaction with care, and post-discharge outcomes.

Conclusion: The anonymous surveys did not reveal insight related to the impact of child injury type or severity on trauma clinic follow-up, possibly because injury data was collected by parent report and not medical record review. However, survey data revealed that the distance families traveled for post-discharge trauma clinic follow-up care was extensive (or may have an impact in return appointment adherence). Our pediatric trauma center covers over 4000 square miles with significant traffic problems.

Individual interviews confirmed that distance to the hospital was a barrier to trauma clinic follow-up. Families discussed additional barriers including lack of transportation, subspecialists' availability limited to certain days and times, difficulty taking time off from work, and finding daycare for siblings. A few families also indicated problems with insurance.

Study limitations included small sample size, lack of medical record data, and the potential for bias because the investigator conducted the follow-up visits and interviews.

A multi-disciplinary trauma clinic may address some barriers to trauma clinic follow-up for pediatric patients.

BEST PRACTICE

Abstract Title: Mass Casualty Incident: Don't Forget About the Operating Room: Collaborating with the Trauma Program

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Introduction: Traditionally, mass casualty preparedness has been a collaborative approach between the Emergency Department and the Trauma Program, however, at Children's Hospital Los Angeles, a Level One Pediatric Trauma Center, we believe best practice includes the operating room staff being involved in all planning and preparation in order to provide the highest level of care to patients during a mass casualty incidents (MCI).

Methods: A taskforce was created with key stake holders within the trauma, disaster preparedness, and the operating room to review current practices, knowledge and resource deficits of departments and workflow, and critical thinking in the event of a mass casualty incident (MCI). Mass casualty educational interventions were established and included in the 2020 operating room annual competencies. Interventions consisted of a lecture, triaging simulations, and surgery based critical thinking workflow exercises. Lectures were given by trauma program staff, operating room staff and disaster preparedness staff. A pre-test was given prior to training to gather baseline knowledge regarding mass casualty and triaging basics. A post-test was administered at the end of the training.

Results: Approximately 100 operating room staff participated in the skills day. Staff was compromised of different skill sets and duties including registered nurses, technicians, and front desk staff. A 10 question pre-test was given with an overall average of 45% answered correctly. After the lectures, simulations and critical thinking exercises, the same 10 question test was administered as a post-test. The overall average for the post-test was 72% after the training. After reviewing the most commonly missed question pre and post-test, it was determined that the following 3 questions were missed on both tests:

1. T or F: A Mass Casualty Incident (MCI) describes an incident which emergency medical services, such as personnel and equipment, are overwhelmed by the number and severity of casualties.
2. According to the last US Census, approximately how many children reside in Los Angeles County?
3. Which of the following recommendations are priorities for disaster planning for operating room staff?

Conclusion: Future considerations were identified such as continued educational series that includes having an MCI mock code simulations that involves OR staff reporting to the trauma bays to perform emergent surgery under the direction of the surgical team and how an MCI would affect OR operations and workflow, table top discussions, and educational lectures and grand rounds. Additional education on triaging and understanding of patient priorities will also be addressed in future training sessions.

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Abstract Title: Pedestrian Safety: A Public and Private Partnership

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Introduction:

The Los Angeles Street Smarts Pedestrian Safety Set (LASSPSS) was developed after California State Senator Richard Alarcon's 3 year-old was killed in a car crash. This tragic story revealed the gaps in the world of pediatric trauma resource funding. California Senate bill 1773 was created to provide funds to pediatric trauma care.

Within our trauma department, we identified pedestrian safety as a necessary measure for injury prevention. One of the leading mechanisms of injury in children (MOI), is automobiles versus pedestrian injuries. Many schools and parents are challenged with being able to effectively educate children on this topic, amidst many other competing priorities.

Methods:

The LASSPSS is a life-size city designed to teach 1st-3rd graders on key components of pedestrian safety: crossing at a light, a stop sign, dart outs, and back overs. The set is presented to elementary schools, summer camps, and public venues (health and county fairs). The goal is to teach pedestrian safety in a fun, interactive way. In 2017 CHLA partnered with the Los Angeles Police Department (LAPD), which provided officers to assist in teaching and gauging student's interaction with the presence of officers. The officers were trained on all aspects of the set from set-up, education, and break-down. Schools are selected by looking at pedestrian versus auto data and targeting schools with reported incidents.

In development of the LASSPSS, the components that were considered included staffing for the event, funding to support the set and staff, the design that would best match the environment where education will take place, key teaching points, business plan, and timeline.

One component for evaluation was the effect of police involvement in education, whether their presence increased or discouraged participation and learning. The second component was the results of pre and post-tests to find knowledge change and the third was an analysis of pre and post observations gauging an influence on immediate behavior change.

Results:

Since the LAPD collaboration, we have educated 30 schools and had a total of 14 officers participate in the education of the set all of Los Angeles county. For the current 2019 year of data out of the 1424 students who completed the pre and post-test, correct answers increased significantly ($p<0.05$) for nine out of ten of the questions after they went through the set. The greatest knowledge increase was from the questions, "How do you know if a driver can see you? (31% increase), What should you do if your friend is going after a ball (26%), and Who

is responsible for your safety (22%)" In our anonymous observations, we also saw a significant increase in the percentage of children who looked both ways (10% to 41%, $p<0.05$)

Conclusion:

The findings underline the importance of collaboration to educate children on unintentional injury safety. Collaboration works best when your are able to provide the correct tools and train organizations to work with you. The set is a useful tool to educate and increase student's knowledge on pedestrian safety practices. The participation of the LAPD has not only helped promote interaction with the students but also displays police officers in a positive light.