

ORAL & POSTER PRESENTATION ABSTRACTS – Evidence-Based Practice

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Evidence-Based Practice - E1

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

A Warm Welcome Goes a Long Way

Authors:

[Jody Shigo, RN, CMSRN](#); Eileen Fruchtl, MSN, RN, CCRN, CMSRN and Kai Bortz, BSN, RN, CMSRN

Background & Purpose:

This institution's medical-surgical trauma unit historically struggled with improving sub-optimal Press Ganey scores in areas related to courtesy and service. Borrowing from literature in management theory and service excellence, in addition to highlighting best practice examples of the Disney Corporation and the Ritz Carlton Hotels, the Warm Welcome construct was implemented on a medical-surgical trauma unit. The service and courtesy concepts of AIDET and HEAT were initiated followed by other current trends in service excellence such as hourly rounds and bedside report.

Study/Project Design:

Pre-implementation data from 2009, post-implementation data beginning April 2010 and ongoing.

Setting:

The project was implemented at a large, academic, community Level 1 Trauma Center in Pennsylvania.

Sample:

The initiative was implemented on the 30 bed medical surgical trauma unit including 53 staff members and other interdisciplinary providers.

Procedures:

Press Ganey scores were reviewed to determine the highest ranked scores for patient satisfaction. Each high index category score was reviewed for the same quarter of the previous year with improvement goals set at 0.25, 0.50, and 0.75 over the course of 3 months post-implementation. An education plan consisting of lecture and role play was developed. All staff was educated prior to project implementation. During each education session staff was afforded the opportunity to role play AIDET and HEAT concepts as an adjunct to didactic education. Contracts were signed by all staff confirming their agreement to abide by Warm Welcome behaviors. Pre and post implementation data was prominently posted publically on the unit. Data was shared with staff via email and meetings.

Findings/Results:

Preliminary findings reveal that Warm Welcome has had a significant impact on Press Ganey scores with specific impact on categories related to courtesy and service. An upward trend line was achieved in a majority of Press Ganey inpatient categories with the highest peak in scores attained in the first quarter post-implementation. Comparison of pre-implementation data from all quarters of 2009 to post implementation data of 2 quarters of 2010 shows an increase of 1.5 in average scores. This marked increase exceeds project goals.

Discussion/Conclusions/Implications:

There have been many learning opportunities uncovered during this project. The most important of which is the correlation between the expression of courtesy by staff and patients' perception of care. A warm exchange of information between staff and patients, as well as their families, fosters a more caring, healing environment. In retrospect, a greater involvement of bedside staff in the development of the educational materials may have facilitated the cultural change required in this initiative.

Evidence-Based Practice - E2

Oral Presentation - Thursday, March 31, 2011 - 1:00-2:00 PM

Abstract Title:

Aim 4 Peace: An Evidence Based Collaborative Approach to Violence and Injury Prevention

Authors:

[Teresa Lienhop, MSN, MBA, RN, CCRN, NEA-BC, FACHE](#)

Background & Purpose:

As the recipient of the greatest percentage of penetrating trauma in the region, this trauma center has a unique opportunity to address the community issue of intentional violence. In concert with an intervention specialist and using a two prong approach in the hospital and community, Aim 4 Peace can effect a culture shift in what is accepted as the norm among perpetrators of violent crime while reducing recidivism. This program is the community's attempt to address the problem on a narrow scope in a concentrated police patrol area known as the Murder Factory. Expansion plans are outcomes driven.

Study/Project Design:

Baseline and post implementation data was aggregated for violent crimes by police patrol zones.

Setting:

Based on reputation and proximity to the target area, Aim 4 Peace works only with this trauma center.

Sample:

Over a two-year period, 229 eligible victims of intentional gunshot violence arriving at the trauma center were included in the sample size.

Procedures:

As a hospital linked program, the initial consent is done by a social worker. The intervention specialist assesses a victim for the risk/potential for retaliation. This specialist has a past association with street organizations as a leader/participant, enhancing credibility with both victims and potential perpetrators. If the referral is accepted by the patient, there is a structured risk reduction treatment plan that includes education, employment, housing, health/nutrition, legal and social factors. Evaluation of the program involves a hospital component with regard to approach and acceptance of the referral. External evaluation of effectiveness is measured by the reduction in assault and homicide rates in the target zone as compared to the police patrol zones in the immediate proximity

Findings/Results:

From a hospital perspective, program referrals are at 63% demonstrating an ineffectiveness of limiting the approach to a single department without 24/7 coverage, and thereby offers an opportunity for process redesign. Since inception of the program, achievements are significant with gun-related violence decreasing 15%, specifically with reductions of 8.9% and 25% for aggravated assault and homicides respectively. There have been a total of 198 enrolled participants since the program began. Initial health care savings were \$964,000 and law enforcement savings amounted to \$1.5 million dollars. Aim 4 Peace as a public health model created savings of \$7.6 million dollars through mediations in 70 documented conflicts between rival street organizations. Convinced of the overwhelming success of the program and cost savings associated with incarceration and prosecution, the police department contributed \$300,000 from their 2011 budget to Aim 4 Peace to ensure continuation of the program.

Discussion/Conclusions/Implications:

As community partners, Aim 4 Peace and the trauma center have a unique opportunity to change the cultural paradigm in what is accepted as the norm among perpetrators of violent crime while collaborating to improve outcomes for a high risk population. Planned modifications to the program involve expansion to include all assaults, using a scripted approach and implied consent, the addition of chaplains and Emergency Department staff for the approach, incorporating a liaison to the program, active monitoring of recidivism, and trauma service participation in crime free or safe events.

Evidence-Based Practice - E3

Oral Presentation - Thursday, March 31, 2011 - 1:00-2:00 PM

Abstract Title:

Analysis for SBIRT Predictive Factors in the 12-17 Year Old Population

Authors:

[Lynn Haas RN, MSN, CNP](#)

Background & Purpose:

Few studies have investigated the incorporation of SBIRT into the care for the younger adolescent population. The purpose of this study is to analyze our data for specific predictors which indicate high risk among the 12-17 year old patients admitted to the Trauma Service who have completed the SBIRT screening tool.

Study/Project Design:

Retrospective analysis of January 2009-2010 data.

Setting:

Level I Pediatric Trauma Center

Sample:

Sample size of 172 patients, 12-17 years of age admitted to the Trauma Service who have completed the SBIRT screening.

Procedures:

CRAFFT assessment, validated for the 12-17 year old population was utilized as the SBIRT screening tool. Nursing personnel were responsible for screening patients while social service was responsible for providing interventions. Data from CRAFFT tool (range 0-6) was electronically entered by the injured child into a web-based database. Trauma registry information was merged so as to provide patient demographic information.

Findings/Results:

Of the 172 patients, 30% (51/172) had a positive score of 1 or greater (scale 0-6) requiring an intervention. Prevalence of a positive score was: 26% (13 year old), 42% (14 year old), 26% (15 year old), 48% (16 year age) and 35% (17 year old). No positive screening scores (0%) were noted for 12 year old children. Higher positive screening scores (≥ 3) were only noted in children 14 to 17 year ages. Interestingly, scores of 5 and 6, which strongly suggests the need for a referral, were only noted in two children ages 14 and 15. From this analysis, intent (i.e. self inflicted, assault vs. non-intentional) and high vs. low ISS did not have an influence on which adolescent had a positive screening score. Three injury mechanisms had more positive screens (struck by / against 42%; motor vehicle crashes 43%; and gunshot wounds 43%). When a positive screen did occur, the average time spent on an intervention was 21 minutes.

Discussion/Conclusions/Implications:

From this study, age and three mechanisms of injury had predictive factors for screening the 12-17 years old injured population related to alcohol and / or drug risk factors. However, this analysis needs expansion into a multi-center analysis with larger sample size. It is anticipated that expansion of this type of analysis will lead to development of best practices for translating alcohol / drug screening and brief intervention into routine clinical care among the younger adolescent trauma patients.

Evidence-Based Practice - E4

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Autistic Children Present Unique Challenges for Injury Prevention Programs

Authors:

[Sean Elwell, RN, BSN](#)

Background & Purpose:

Currently Autism affects 1 in every 110 births. With this disorder comes a set of behaviors which affects a person's ability to communicate and interact with others. Although much research is being conducted on the disorder, limited information has been provided to children with autism on injury prevention.

Study/Project Design:

An educational injury prevention program was created geared towards children with autism.

Setting:

Elementary school

Sample:

20 students during four sessions

Procedures:

Based on input and in collaboration with educators in the school system, the injury prevention program focused on 4 risk areas that were deemed necessary. These risk areas were Water Safety, Bicycle Safety, Fire Safety, and First Aid. This program was then piloted in a local school in collaboration with their autistic program. These interactive educational sessions were designed to teach the basics of each of the risk areas and provide a basic level of understanding of these risk areas.

Findings/Results:

Pre and post tests were conducted for the program. The pre tests showed that the students had a basic understanding of the risk areas. Post test results showed that students were able to learn the safety material and retain the information they had learned. Students were engaged in the injury prevention programs and actively participated.

Discussion/Conclusions/Implications:

In a population where injury prevention information may be the most important, these students had been previously lacking the information. The interactive injury prevention program provided a valuable vehicle to deliver the educational message and proved to be successful.

Evidence-Based Practice - E5

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Bedside Interdisciplinary Rounds Influence ICU Length of Stay for Trauma Patients

Authors:

[Kristin Santos, RN, MS](#) and Kacey Hansen, RN, BSN

Background & Purpose:

The trauma patient population is a complex population necessitating collaborative care planning and coordination of available resources to optimize patient outcomes. Interdisciplinary rounds have recently been associated with improved patient outcomes and patient and staff satisfaction. The purpose of this project was to examine how weekly interdisciplinary rounds conducted at the patients' bedside in the intensive care unit (ICU) impacted collaborative care planning and ICU length of stay (LOS) for trauma patients.

Study/Project Design:

Analysis pre- and post- implementation of new procedure.

Setting:

ACS Verified Level II Trauma Center, 324-bed medical center, 35-bed intensive care unit.

Sample:

A convenience sample of trauma registry patients admitted to the ICU in 2009 and 2010; patients who died in the ICU were excluded.

Procedures:

Representatives from nursing, rehabilitation services, social services, case management, pharmacy, and the trauma service evaluated the weekly interdisciplinary rounding process for trauma patients in the ICU. The group recommended reformatting trauma weekly interdisciplinary rounds and moving them to the patient's bedside in the ICU. The new format for bedside rounds was implemented in July 2009 and included: facilitation by the trauma medical director and trauma CNS; presentation of pertinent history and clinical progress by the patient's primary nurse; issue identification from each discipline's perspective; recommendations for revision of the care plan as needed. ICU LOS, hospital LOS, and mechanical ventilation were collected before and after implementation of the new procedure.

Findings/Results:

There were 362 patients included in the analysis. There were 188 patients in the pre-implementation group and 174 patients in the post-implementation group. Mean age was 43 years for both groups ($p = 0.9$), and mean ISS was slightly less for the post-implementation group (2009 vs. 2008, ISS 18 vs. 16, $p = 0.05$). Though statistically not significant, mean ICU LOS decreased from 6.1 days to 4.8 days ($p = 0.06$), mean mechanical ventilator days decreased from 6.8 days to 5.9 days ($p = 0.48$), and mean hospital LOS decreased from 11.8 days to 10.8 days ($p = 0.45$). Bedside rounds also enhanced interdisciplinary collaboration, provided concurrent learning opportunities for the team, and facilitated earlier identification of clinical issues and trends in this complex patient population.

Discussion/Conclusions/Implications:

Weekly bedside interdisciplinary rounds for trauma patients in the critical care units contributed to a decrease in ICU LOS and hospital LOS in this complex patient population. There was a decrease in ICU LOS by 1.3 days and hospital LOS by one day after implementation of this new process. Bedside interdisciplinary rounds provide an opportunity for the trauma team to learn and to work collaboratively on the individual patient care plan to improve patient outcomes. Future studies are needed to examine bedside rounding on medical-surgical floors and the impact on LOS.

Evidence-Based Practice - E6

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Bedside Reporting on an Acute Care Trauma Unit

Authors:

[Katherine Mulligan RN, BSN](#); Allison Payne RN, BSN and Shanna Pusinsky RN, BSN

Background & Purpose:

Bedside report is an exchange of critical patient information at change of shift in the patient's room. The addition of visual and tactile reporting increases nurse awareness of the patient's status and plan of care. Bedside report has been shown to be effective in improving patient empowerment and involvement in care. It is consistent with The Joint Commission's goals of improving patient identification and communication among caregivers. The objectives of this performance improvement (PI) initiative were to improve safety and patient satisfaction on an acute care trauma unit.

Study/Project Design:

Pre and post-implementation data were collected from nurses and patients as part of a PI initiative.

Setting:

An eighteen bed acute care trauma unit in a large urban academic level I trauma hospital.

Sample:

The convenience sample of nurses included 17 pre and 18 post-implementation. 52 patients provided pre-implementation data. FY11Q1 sample size is TBD.

Procedures:

Prior to implementation nurses were surveyed to evaluate their opinion of bedside reporting and its feasibility. They were asked about safety, professionalism and time constraints. Based on the results the unit shared governance council identified a new procedure for shift change report. A proposal was formally presented to staff, who agreed to trial the new format for one month. After the month long pilot, the survey was repeated and the results were favorable. The staff agreed to adopt the practice as a unit standard. When obtained from an outside contractor, FY11 Q1 patient satisfaction data will be compared to FY10 Q4 data to determine if improvements are seen in the patient experience regarding perception of safety, communication and responsiveness.

Findings/Results:

Post-pilot survey results revealed that 100% of nurses conducted bedside report either most of or all of the time in comparison with 6% prior to initiation. Nurses' perception of importance of bedside report as it pertains to patient safety and satisfaction increased from 59% to 94%. However, 44% of nurses indicated that bedside report caused them to stay at work an extra 10 minutes or more. Outcome measures from Q4 FY10 patient satisfaction scores were established and included: patient perception of teamwork and safety, clear communication between nurses, prompt attention to needs by nursing staff and nurses actively listening to patients questions and concerns. In Q4 FY10 64% of patients gave a top score for perception of team work on the unit and 63% reported a top score regarding feeling of safe. When surveyed on clear communication and nurses listening carefully, 70% and 63.5% gave a top score, respectively. This baseline data will be compared to Q1 FY11.

Discussion/Conclusions/Implications:

Bedside report between nurses is a successful process to enhance hand-off communication at change of shift. In general, nurses were satisfied with this procedure and have incorporated the format into the unit culture, although on-going revisions are made. Bedside report continues to evolve and is now a stable part of the unit culture. Further inquiry into expanding the practice by ensuring adequate time for caregivers to exchange information and engaging patients as active participants in report may continue to strengthen the process in the future.

Evidence-Based Practice - E7

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Car Surfing Injuries: It's Not Just a Game

Authors:

[Cyndi Mastropieri, RN, MSN, CNS](#)

Background & Purpose:

Car surfing is an illegal activity gaining popularity in the United States since the evolution of video games and video sharing websites. Statistics reveal a steady rise in car surfing fatalities especially in California, Florida and Texas. Car surfing is a thrill seeking activity that involves a person riding on the exterior of a moving vehicle, while someone else is driving. Sudden unanticipated maneuvers, such as braking or swerving force a car surfer off the vehicle causing severe injuries including death. This poster will describe the epidemiology from car surfing injuries at our facility.

Study/Project Design:

The study design was retrospective analysis of trauma registry data.

Setting:

The setting was an urban, level I trauma and teaching center.

Sample:

The sample size consisted of trauma patients with injuries from car surfing.

Procedures:

A retrospective analysis of trauma registry data was analyzed to determine the characteristics of injuries due to car surfing. Data collected and analyzed included characteristics on the injury event, age, gender, Injury Severity Score (ISS), Revised Trauma Score (RTS), diagnoses, procedures, length of stay and outcome.

Findings/Results:

Seven patients were identified. The average age was 18 years with a range 15 to 35. All injuries occurred between Thursday and Sunday with 57% of the injuries occurring from 2000 to midnight. The average ED Glasgow coma score was 6.86 and RTS 5.97. The trauma team was activated for five patients. Four patients required intubation. One of three had a positive alcohol level, one with a positive drug screen for amphetamines and three patients were not tested. Two patients were admitted to the OR, two to the ICU and two to the trauma floor. Traumatic brain injury (TBI) was the primary diagnosis for five patients (71%) and lower extremity fractures for two patients (29%). The average ISS was 20.57 with a range of 4 to 75. Two patients required operative intervention for ORIF and one for craniotomy. The average ICU LOS was 13.33 days and overall LOS was 9.43. Three patients were discharged home; three to rehabilitation and one expired representing a mortality of 14%.

Discussion/Conclusions/Implications:

Car surfing is a newer identified mechanism of injury causing serious neurologic morbidity and mortality increasing the cost of acute and long term healthcare. Education through government and community leaders, healthcare advocates, teachers and parents should be directed at increasing awareness of the dangers of car surfing to decrease morbidity and mortality and decrease healthcare costs related to this type of injury.

Evidence-Based Practice - E8

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Computerized Alcohol Screening and Brief Intervention (CASI) in a Level I Trauma Center

Authors:

[Christy Carroll, BSN,RN](#); Shahram Lotfipour, MD; Craig Anderson, PhD; Stephanie Lush, RN, MSN and Samer Roumani

Background & Purpose:

Screening for alcohol use disorders (AUP) with brief intervention and referral to treatment have been shown to reduce alcohol consumption and injury recidivism (Vaca and Winn, 2007). In Resources for Optimal Care of the Injured Patient: 2006, the American College of Surgeons Committee on Trauma mandated that Level I and Level II trauma centers use the teachable moment resulting from a traumatic injury to implement prevention strategies. Computerized Alcohol Screening and brief Intervention (CASI) facilitates identification of problem drinkers and provides further brief intervention when indicated.

Study/Project Design:

Since 2007, to routinely screen for AUP, provide standardized brief intervention and referral.

Setting:

Level I trauma center Emergency Department and also all inpatient trauma units.

Sample:

1093 male and female, English or Spanish speaking patients, between the ages of 18 and 99 have been screened since implementation of the CASI program.

Procedures:

Patients presenting with traumatic mechanism are provided a CASI tablet and asked to answer questions about their drinking habits, such as how much and how often they drink. CASI, a novel bedside screening and brief intervention tool, also educates about standard serving size of alcohol containing drinks. The questions presented are based on the Alcohol Use Disorder Identification Test (AUDIT). The program generates a score between 0 and 20 indicating the patient's risk level. The higher the score the higher risk for alcohol use problems and harmful or hazardous events. Patients who screen at risk or dependent are given a printout with the risk score and recommendations for reducing risk. A social worker consult is generated for further evaluation and referral to treatment services.

Findings/Results:

1093 were patients screened with CASI between October 2007 and September 2010, 25% screened at risk, 71% screened no risk, and 4% screened as dependent. These percentages are identical to the prevalence estimates in the non-institutionalized U.S. population of non trauma patients in the publication: Alcohol Screening and Brief Intervention (SBI) for Trauma Patients: Committee on Trauma Quick Guide, 2007. 88% of those patients screened were English speaking and 12% were Spanish speaking. 68% were men and 32% were women. 16% of those patients who screened at risk had blood alcohol levels less than 0.08%. 1.5% of patients who screened as dependent had blood alcohol levels less than 0.08 %. No data is currently available as to how many social work referrals have been generated by this program. A 363 person survey demonstrated that 42% of patients screened with CASI intended to change their behavior based on CASI recommendations.

Discussion/Conclusions/Implications:

The effect of CASI on patient's alcohol consumption has yet to be fully explored. Further investigation should include follow up on patient's drinking habits upon discharge. The next steps in the implementation of CASI are: the evaluation of social work referrals for at risk and dependent screenings; the expansion of the system to the other two trauma centers in the county; and inclusion of non-trauma patients in college health campus clinics, community health clinics, and an online version of CASI to be used by anyone.

Evidence-Based Practice - E9

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Development of a System for Managing Imaging Studies Performed at Outside Hospitals

Authors:

[Chris McKenna, MSN, CRNP](#); Barbara A. Gaines, MD; Kathleen Kapsin (RT)R, (M) MS and Tom Sutcavage, RT, BA

Background & Purpose:

In 2007, 52% of the trauma patients admitted to our Level I Pediatric Trauma Center were transferred from other hospitals. While we have traditionally submitted all outside films performed on children admitted to the trauma service for interpretation by our radiologists, we identified ongoing issues for the clinicians, especially as more films arrived on compact disc (CD). These issues included: 1) access 2) availability 3) archiving. This was particularly important as it related to the need for repeat imaging and exposure to unnecessary radiation.

Study/Project Design:

Data was collected prospectively via the trauma registry and aggregated annually for comparison.

Setting:

This project was implemented at a busy Level 1 Pediatric Trauma Center.

Sample:

The records of all admitted trauma patients, transferred from another hospital, were included in this study.

Procedures:

Access was improved by equipping designated computers in the Emergency Department, Radiology, Operating Room, Pediatric Intensive Care Unit, and acute care nursing unit with the software needed to allow the opening of outside hospital films. To improve availability, the Trauma Program purchased CD duplicators for the Emergency Department and an acute care nursing unit. Finally, archiving was achieved in collaboration with the Department of Radiology. Films that are received as hard copy or in DiCom format are archived into Stentor, the hospital's Picture Archiving and Communication System (PACS, by the CT technologist in the ED as the patient is being evaluated.

Findings/Results:

While the ideal system would be for films from referring hospitals to be immediately archived upon patient arrival, the above interventions have resulted in many improvements including: 1) decreased frustration on the part of clinicians regarding the location of films 2) decrease in the number of CT scans requiring repeating as the disc could not be opened and 3) improvement in patient care as the films are available to all for reference throughout the patient's hospital stay and follow-up. Overall, from 2006 through 2009, we have seen a 12% decrease in the number of patients requiring a repeat scan for any reason.

Discussion/Conclusions/Implications:

- 1) Each Trauma Program, in collaboration with Radiology, must evaluate its own referral patterns, clinical needs, and resources to provide optimal care to the injured patient.
- 2) Ideally, trauma systems should work towards development of expectations and technology that will allow for all films from a referring hospital to be immediately viewed and archived upon patient arrival.
- 3) Finally, while we have greatly improved our system for the viewing of OSH films, we still do obtain repeat imaging. Therefore, consideration should be given to deferring advanced imaging to the trauma center.

Evidence-Based Practice - E10

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

DRV NOW, TXT L8TR: A Campaign to Decrease Distracted Driving.

Authors:

[Cyndi Mastropieri, RN, MSN, CNS](#); Ginger Cunningham RN and Michael Foreman, MD, FACS

Background & Purpose:

While the popularity of mobile phones has grown in the last few decades, it's still unclear how greatly cell phone use and texting contribute to motor vehicle collisions. Texting behind the wheel leads to distraction and driver inattention is the leading cause of motor vehicle collisions. Of all cell phone related tasks, texting while driving is the most dangerous. In 2009, the Texas Department of Transportation reported 3,378 traffic crashes due to cell phone use. These crashes resulted in 2,113 injuries and 44 fatalities. The purpose of this abstract is to share our prevention campaign.

Study/Project Design:

To evaluate the number of pledges received to decrease texting and driving.

Setting:

The setting was an urban, level I trauma and teaching center.

Sample:

The sample was hospital employees, county citizens and teenagers at local high schools.

Procedures:

Throughout the month of May, our institution launched its DRV NOW, TXT L8TR campaign to raise awareness about the dangers of texting while driving and to change the mindset of our community about texting and driving. Our campaign included the development of DRV NOW, TXT L8TR logo, informational flyers, business cards, t-shirts, pens and campaign buttons to share our message. Trauma surgeons participated in newscasts and blogs. The trauma staff participated in safety fair booths. The trauma nurses and emergency department nurses shared information at local high schools. Public relations designed newsletters, public service announcements, and postings on Facebook, YouTube, Twitter, message blogs, phone hold messages, and newscasts to raise awareness in our community.

Findings/Results:

Communicating that texting and driving is twenty times more risky than driving while not using a cell phone really made an impact during our campaign as 1,725 citizens took the DRV NOW, TXT L8TR pledge not to text and drive for 90 consecutive days.

Discussion/Conclusions/Implications:

Currently, Texas has no law banning the use of cell phones while driving, however, we encourage our community to DRV NOW, TXT L8TR. Eliminating texting while driving will decrease the incidence of traumatic injuries due to distracted driving.

Evidence-Based Practice - E11

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Elimination of EVD Errors in the Pediatric Neurotrauma Patient

Authors:

[Kristin Braun RN, MS](#); Deb Soetenga, RN, MS, CCNS; Linda Perez, RN and Cinda Werner RN, MS

Background & Purpose:

An increase in incidences involving management of external ventricular drains (EVDs) occurring in a Pediatric Surgical/Trauma ICU led to an investigation to find out why this was happening. EVDs are frequently used in the treatment of pediatric head injury patients. The objective of the improvement project was to decrease the incidences of EVD management errors.

Study/Project Design:

Quality improvement initiative

Setting:

Surgical/Trauma ICU at a Children's Hospital

Sample:

All trauma patients with EVDs

Procedures:

In an 8 month period in 2008- 2009 there were 5 documented incident reports involving EVD management. In the Surgical/Trauma ICU there is a nursing neurosurgery clinical practice group that consists of nurses who have an expertise in the care of the pediatric neuro trauma patients. The group worked with ICU Advance Practice Nurse (APN) and Trauma APN to assess nursing staff knowledge of EVD management. A lack of consistency between nursing practice and EVD protocol was identified. An educational improvement plan was designed by the Neurosurgery RNs and APNs. The education plan included a) a review of the management of an EVD b) a core group of ICU nurses were educated c) identification of an EVD Resource person for every shift and d) completion of an annual competency by all nurses.

Findings/Results:

There has not been an EVD incident in a pediatric neuro/trauma patient in 12 months. Nursing confidence and satisfaction increased according to the ICU leadership team and verbal nursing report.

Discussion/Conclusions/Implications:

The involvement of the ICU nursing staff in identifying the reason for the EVD incidences and including them in the development of the education and implementation plans was the success of this initiative. This work also led to updating the EVD policy and procedure and creation of an in-depth EVD checklist which is used with every patient care handoff. The EVD Resource role has expanded to cover all ICUs in addition to the Surgical Trauma ICU.

Evidence-Based Practice - E12

Oral Presentation - Thursday, March 31, 2011 - 1:00-2:00 PM

Abstract Title:

Hemostatic Resuscitation in a Revised Massive Transfusion Protocol (MTP) Leads to Improved Utilization and Outcome

Authors:

[Theresa Snavely, RN, BSN](#); Patricia Palubinsky, RN, BSN; Amy Morgan, RN, BSN; Pamela Nichols, RN, BSN and Kazuhide Matsushima, MD

Background & Purpose:

Monitoring of rapid identification and treatment of hemorrhagic shock is a critical indicator of trauma performance. Full and appropriate utilization of MTP, as with any other evidence-based care guideline, requires frequent education of various stakeholders, reassessment and re-education. The purpose of our study was to examine utilization of and outcomes with a revised MTP that adopted principles of hemostatic resuscitation, incorporating early and expanded use of components.

Study/Project Design:

Pre/post intervention study of injured trauma patients recorded in trauma and blood bank database.

Setting:

Rural Level 1 Trauma Center, 500 bed academic medical center.

Sample:

Before/after study of protocol revision: Pre = 4/2009 - 12/2009 (50); Post = 1/2010 - 9/2010 (49)

Procedures:

Retrospective mortality case review documented a lack of knowledge of MTP existence and delay in component administration. Thus, ED, Blood Bank, Trauma surgery, Anesthesia, and OR staff stakeholders conceived an evidence-based MTP revision and education effort. The principal components of the protocol revision involved establishing access to shelved thawed plasma and recombinant Factor 7. Implementation included interdisciplinary educational forums, updated rapid trauma bay access to blood bank, inclusion in the resident orientation booklet and daily AM report educational updates. We compared the percentage of MTP to total transfusions, mortality and unexpected survival rate and FFP: PRBC ratio in both time periods using Fisher's exact test.

Findings/Results:

In the pre period, 22% (11/50) trauma patients transfused within the first 24 hours received MTP with a mean ISS of 35.3, compared to 61% (30/49) in the post period ($p < 0.001$) with a mean ISS of 35. Mortality of (5/11) MTP patients was 45% pre versus 40% (12/30) post ($p = 1.000$). There was one unexpected survivor in the pre MTP group versus six post (0.651). FFP: PRBC ratio was 1:3.4 in the pre period versus 1:1.4 post with 1/11 pre versus 18/30 post in a 1:1 ratio ($p = 0.05$).

Discussion/Conclusions/Implications:

A revised MTP protocol incorporating evidence-based guidelines favoring hemostatic resuscitation reinforced with a multi-pronged educational effort improved utilization with a trend toward improved outcome. Resuscitation paradigms need continuous revision and education to result in optimal care.

Evidence-Based Practice - E13

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Implementing Crew Resource Management Principles in the Trauma Bay to Improve Interdisciplinary Communication and Teamwork

Authors:

[Joan Pirrung, MSN, ACNS, BC](#) and Pamela Woods, MSN, RN, CEN

Background & Purpose:

Trauma resuscitation is complex and requires multiple disciplines to work seamlessly together at the bedside and remotely through urgent consultation. Such an environment creates great potential for ineffective communication, loss of information, role delineation problems, crowd control issues and noise-related concerns. Based on an Agency for Healthcare Research and Quality (AHRQ) Team Assessment Questionnaire the perception of teamwork in the trauma bay received an overall low rating. Our goal was to improve communication, teamwork and team behaviors.

Study/Project Design:

AHRQ System-wide Culture of Patient Safety Survey administered before TEAM training and 1 year after.

Setting:

High acuity, high volume Level 1 trauma center.

Sample:

Over 350 individuals from Emergency Nursing, Emergency Medicine, Anesthesiology, Surgery, Allied Health attended the training.

Procedures:

After the baseline data was collected and evaluated, a consultant was invited to educate key multidisciplinary leaders on Crew Resource Management principles, based on Agency for Healthcare Research and Quality (AHRQ) TeamSTEPPS program. Baseline data from the sample population assessed perception of teamwork in the trauma bay, effectiveness of communication among all team members during a trauma resuscitation and aptitude of leadership. Communication/teamwork tools and policies were customized to improve and enhance the resuscitation process. Pocket-sized versions of these tools were distributed to all providers as well as displayed in the trauma bays for ease of reference. Outcomes were evaluated by real-time observation and review of videotaped trauma resuscitation activations.

Findings/Results:

After education, anecdotal and post-training survey results from the sample population indicated improvements in conflict resolution, communication, teamwork, adequate training, role delineation, measurement of team performance, team morale, skills and resources needed. An issue identified during this project was crowd control in the trauma bay which was a barrier to effective communication. This project enabled us to clearly define which staff members were required to provide direct patient care and empowered the team leaders of each discipline to work together towards crowd control. Lessons learned included the need for policy alignment and cooperation from all departments, that a consistent and dedicated multidisciplinary team is essential to the success of a project affecting many disciplines and that leadership support of all stakeholders is critical. Sustainment efforts must include consistent prompting and re-enforcing of the TeamSTEPPS principles to ensure adherence.

Discussion/Conclusions/Implications:

As outlined in the previous section, cooperation from all disciplines is essential. Further role delineation has improved crowd control, barriers to effective communication as well as morale and respect among each discipline. Trauma nurses are more confident and proactive regarding patient safety and active participation in patient care planning. Future plans include automation of both the pre-hospital report and documentation of trauma resuscitation team members as well as broadening the scope of TeamSTEPPS principles to other patient care areas.

Evidence-Based Practice - E14

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Improved Care and Reduced Costs for Patients Requiring Peripherally Inserted Central Catheters (PICC)

Authors:

[Robin Garza, RN, MSN](#); Steve Peardon, RN, MBA/HCM and Elenita bautista, RN, BSN, ONC

Background & Purpose:

The purpose of this project was to identify methods to improve care, reduce waiting time and reduce the costs associated with intravenous access for intermediate to long term use in the trauma patient. It is the utilization of Trauma Services Data Base for data collection, identification of existing challenge in the need for an Intravenous Therapy Team to improve outcomes and length of stay. Trauma Services Performance Improvement & Patient Safety (TPPIPS) Program discussion recommendation is to form an Intravenous IV) Team that will do the PICC procedure.

Study/Project Design:

This was a retrospective study.

Setting:

This study was conducted in an urban Level I Trauma Center.

Sample:

Medical records of all patients admitted during the month of July to August, 2007 who had an order for PICC line insertion were evaluated.

Procedures:

The identified records were examined for total cost, waiting time from order to insertion, length of stay and associated complications. Prior to and during the time of this study, PICC line insertions were being completed in Interventional Radiology by Radiologist. It was identified that there were often delays in the procedure secondary scheduling conflicts. The result of this delay also presented a delay in implementing care as well as increased apprehension for patients and extended length of stay. Results were tabulated and presented to the Trauma Program and Performance Improvement Committee for review and recommendation.

Findings/Results:

The recommendation was implementation of a Nursing PICC team and a team was formulated under the supervision of the Emergency Department Director. Required equipment was purchased, policies created and approved and the PICC team launched nurse inserted PICC lines. The PICC team has achieved and maintained greater than 90% accuracy in the 1st quarter of implementation: April 2008 = 92.31%, May 2008 = 98.21%, June 2008 = 96.88%. The majority of PICCs are placed the same day as the order. Exception- orders placed on Saturday or Sunday. Infusion therapies can be started earlier which in turn decreases LOS, decreasing the number of unnecessary hospital days. Patients are able to be discharged on the same day or next day after PICC placed. IV Team for PICC insertion increased patient, staff and physician satisfaction. The cost analysis of PICC line placement by discipline revealed an estimated 65% decrease in total associated cost from physician led placement to a RN PICC team.

Discussion/Conclusions/Implications:

A team of registered nurses certified to perform the tasks provides an equal or better performance of task and resulted in favorable outcomes not only to patients but to healthcare providers and the healthcare system as well. It is imperative that a nursing leader be consistent and persistent in having a project become a reality for a cause & cost. It has been a year since implementation and the cost of insertion has decreased by 25% from service inception. The PICC team is now inserting an average of 220 lines monthly.

Evidence-Based Practice - E15

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Measuring Trauma Process Improvement through Database Efficiency and Outcome Variable Analysis

Authors:

[Elizabeth Dunn, RN, BSN, CEN](#) and Pamela Bourg, RN, MS

Background & Purpose:

The Performance Improvement Process (PIPS) is a key element in obtaining verification from the ACS. Of the potential deficiencies, the PIPS process is frequently cited as reason for re-review or focus reviews. Translating the clinical platform into a tangible PIPS process is challenging and frequently accomplished via an amalgamation of processes and computer programs. The purpose of this project is to streamline and improve all aspects of the PIPS process by converting to a sophisticated commercial product that will compliment and utilize our existing trauma registry database.

Study/Project Design:

Develop a dynamic PIPS database to function in concert with existing trauma registry database.

Setting:

Urban ACS-verified Level 1 community trauma center with 2700 total inpatient and outpatient visits.

Sample:

Convenience sample of 558 patient visits annually had one or more identified quality/critique filter, average 10/month required in-depth review.

Procedures:

Approximately 20% of reviewed charts reach committee. It was determined that there was a need for a detailed tracking mechanism to document all of the PIPs process, specifically action plan components and peer-review outcome variables. After evaluating our current system, which was our pilot project, it was found to be time intensive. Limitations of the program allowed only three filters per patient. Improvements in commercial products compelled our Trauma Service to seek a more sophisticated product. We collaborated with the commercial vendor to design specific parameters that would address the needs of our trauma program.

Findings/Results:

Developmental efforts resulted in a seamless database that flows effortlessly through the continuum of the PIPs process. It enables sharing of work product from the registry portion to the quality review portion. Double entry by staff has been eliminated and applied work hour efficiency has improved significantly. Recapture of approximately \$7,175 per year was accomplished. A unique attribute of this dynamic database is the mechanism for comprehensive tracking per critique filter per patient, specifically action plan components and peer-review outcome variables. The integrated database also allows for an immediate query of all open quality issues for any trauma patient and is able to link supporting documentation of varied formats through a document vault. It also tracks meeting attendance, CME, and physician performance.

Discussion/Conclusions/Implications:

The outcome is a smooth and efficient data entry program that allows for consistent categorizing of individual quality filter outcome variables, which will enable focus and trending of patient care areas requiring improvement. The downstream effect will be realized in meaningful and poignant evidence-based change at the bedside of the trauma patient with a high propensity for optimal outcomes. ACS reviewers will be evaluating the improved database during a consultative survey in early 2011. Examples will be available for presentation at the STN conference in April 2011.

Evidence-Based Practice - E16

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Multidisciplinary Evidence Based Guidelines Reduce Pressure Ulcers in Trauma Patients

Authors:

[Jose Alejandro Ramos, CCRN](#); Alan H. Tyroch, MD; Hector Rodriguez, MPT and Aurora Beniquez, RN

Background & Purpose:

The trauma patient is at high risk for developing a hospital-acquired pressure ulcer due to the different mechanisms of injury, physiologic impairments, co-morbidities, medical interventions & nursing care provided. Pressure ulcers are discussed in great depth in the literature; however, prevention of pressure ulcers in trauma patients is not specifically addressed. Trauma patients are implicitly included in studies by the inclusion of medical diagnoses that place patients at high risk to acquire pressure ulcers that are also common to the trauma patient.

Study/Project Design:

Data collection was observational & retrospective chart review.

Setting:

A Level 1 Trauma Center in the border region.

Sample:

35 trauma patients, age 18 and older, in the ICU and surgical floor.

Procedures:

The 4th quarter of 2009 showed minimal pressure ulcer identification confirming the suspicion of under-reporting of the problem. The implementation of a consistent data collection method yielded an increase of pressure ulcer identification in the 1st quarter of 2010. After establishing a consistent data collection method, a multidisciplinary team was established to implement an evidence based practice guideline.

Findings/Results:

Fifty-six pressure ulcers were identified in 35 patients. Demographics: 80% male, 80% (27) blunt, 20% (8) penetrating, mean age - 46 (18-90), mean ISS - 27 (9-75) & mean LOS - 47 (4-107). Thirteen patients accounted for 61% of pressure ulcers (34).

Table

	4 th Quarter 2009	1 st Quarter 2010	2 nd Quarter 2010	3 rd Quarter 2010
Patients	573	601	703	689
PT Consults	350	404	463	485
Pressure Ulcers	3	20	17	16
Sacrum	33% (1)	43% (8)	40% (7)	13% (2)
Heels	33% (1)	26% (5)	36% (6)	37% (6)
Coccyx	0% (0)	11% (2)	12% (2)	19% (3)
Occipital	33% (1)	0% (0)	0% (0)	13% (2)
Buttocks	0% (0)	5% (1)	12% (2)	6% (1)

Discussion/Conclusions/Implications:

With the inception of a multidisciplinary team approach, the number of pressure ulcers has demonstrated a downward trend. The percentage of sacral pressure ulcers has decreased after application of the guidelines; heel & coccyx pressure ulcer prevention is now being targeted. Implementation of a consistent data repository improves pressure ulcer identification & presents an opportunity to evaluate trends to guide a multidisciplinary prevention program in the trauma population.

Evidence-Based Practice - E17

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Nursing Vigilance: the Key to Recognizing Compartment Syndrome

Authors:

[Donna Mower-Wade RN, MS, ACNS-BC, CNRN](#)

Background & Purpose:

Compartment syndrome(CS)is a life and limb threatening condition. If CS goes unrecognized or is not treated expediently, it leads to ischemic muscle necrosis, limb contracture, amputation and sometimes death. Physicians and nurses raised concerns that identification and definitive treatment of CS were delayed. In 2009 a chart review was performed and noted several findings: inability to identify motor or sensory loss; pain out-of-proportion not consistently recognized as an indicator for CS; inconsistent neurovascular checks; and lack of confidence in documenting a change in assessment.

Study/Project Design:

EBP project. Collected data from Jan to June 2009 and 2010. Measured change in practice and outcome.

Setting:

The surgical/trauma ICU, step-down and floor in a large community hospital.

Sample:

All patients that developed CS and admitted between Jan and June of 2009 and 2010. Total patients was 26.

Procedures:

The Acute Care Surgery Service Line Education/PI Committee prioritized CS as its first performance improvement project. The committee redesigned the Vascular Monitoring Flowsheet by adding skin color and motor strength and made it more user-friendly to read; realigned the CS Nursing CPG with the Neurovascular Assessment CPG; provided trauma education forums to nursing on CS with emphasis on assessment, recognition and expedient intervention; and, bought a dedicated Stryker for floor to facilitate earlier measurement of Compartment pressure. Data collected included time from triage to consult; time to OR from ED and/or floor; use of form; appropriate documentation; and motor outcome. 2010 outcomes were compared to 2009 data.

Findings/Results:

In 2010, a chart review was performed after our interventions were implemented and our findings were: Time from triage to trauma consult decreased from 4.3 hours to 2.7 hours; Time to OR from ED decreased from 5.7 hours to 3.4 hours; Time to OR from Floor decreased from 9.6 hours to 1.1 hours. Additional observations included: More patients went directly from the ED to the OR in 2010, instead of from the ED to the Floor to OR; Nurses demonstrated a better understanding of signs and symptoms of CS which led to earlier recognition and intervention in 2010; Nurses developed a high index of suspicion in at-risk patients; Pain out-of-proportion was immediately assessed by nursing; and, Physicians expressed a heightened awareness by nursing.

Discussion/Conclusions/Implications:

Nursing vigilance is key to early recognition and diagnosis of compartment syndrome and, early diagnosis is vital to avoid long-term disability. Nurses' strong assessment skills have facilitated a more rapid time to the OR which led to better motor outcome scores. Nurses empowered with education and knowledge, meaningful documentation tools and a collaborative approach to a serious condition, leads to successful functional and motor outcomes. Path forward includes annual chart review to ensure compliance with form; re-educate nurses on risk factors, signs & symptoms and documentation.

Evidence-Based Practice - E18

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Saving Lives Saves Money

Authors:

[Pamela W. Bourg, RN, MS](#) and Melissa Richey, RN, BS

Background & Purpose:

Rapid Response Teams (RRTs) reduced mortality and morbidity, and save money. This 3 year initiative was to reduce missed opportunities with non-intensive care unit nurses failing to recognize when complications occur with trauma patients and activate an RRT. Education was helpful at first. A qualitative debriefing tool identified themes that impacted the decision making process in activation of RRT. The project's purpose was to refine systems and processes that interfere with RRT activation and to specifically define financial costs savings when a missed opportunity occurs.

Study/Project Design:

Retrospective review of all trauma admissions from 1/1/2008 through 6/30/2010.

Setting:

Urban ACS verified Level 1 community trauma hospital.

Sample:

Convenience (N=6350) 104 missed opportunities and 74 RRTs in 2½ years in the trauma population.

Procedures:

Literature searches provided direction for where to begin to study the issue. Concurrent review of all trauma patients created an opportunity to detect when occurrences happen and capture data. Once the incident is identified, debriefing occurs in timely manner. Simulation training occurs twice yearly for staff in RRT activation. Patients identified as missed opportunities are examined for LOS and subsequent costs associated with that admission that could have been prevented had the RRT been activated when symptoms warranted.

Findings/Results:

Missed opportunities have actually increased from low of 13 to high of 54 and did not decline despite education. In our pilot project, the numbers decreased after initial education; however, compliance with activation criteria began to slide. Qualitative de-briefings with RNs identified causations. Two frequent indicators were oxygen desaturation and change in level of consciousness. Distractions from personal or professional pressures were identified in over 75% of cases. The majority of missed opportunities were in off peak hours (5pm-7am and weekends). Demographics of patient population were mean ISS 9.89 and mean age of 70.5 years. Demographics of RN staff were as follows: two years of experience at facility, 50% BSN, and successful completion of critical thinking module upon hire. 100% turnover was also felt to contribute to the increase. There were no mortalities. Potential savings for earlier identification in direct after event costs are currently in excess of 1,000,000.

Discussion/Conclusions/Implications:

Education of when to activate RRT remains challenging with constant staff turnover. Simulation training is very costly. Debriefings have yielded information about how assessments are incomplete and communication breakdowns are contributory. Case reviews identify processes for reducing errors. Staff has requested Electronic Medical Record signaling for abnormal findings. Do not resuscitate policies have been revised and clarified. Earlier identification for patients at risk remains a challenge.

Evidence-Based Practice - E19

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Where are the Autopsies? Initiative for Obtaining and Communicating Autopsy Information.

Authors:

[Cyndi Mastropieri, RN, MSN, CNS](#); Luanna Yelverton RN, BSN and Michael Foreman, MD, FACS

Background & Purpose:

According to Texas law, all traumatic deaths are reportable to the Medical Examiner (ME). Although autopsies are essential for improving quality trauma care and accuracy of injury surveillance systems, autopsy reporting from the ME office can be suboptimal. According to the College of American Pathologists, the preliminary report must be submitted within 2 days and 3 months for complicated cases. Efficient communication of autopsy results can enhance the identification of missed injuries, accuracy of coding, and accuracy of mortality scores. This poster will describe our unique process.

Study/Project Design:

A multidisciplinary committee was developed to evaluate the current autopsy process. The goal was to

Setting:

The setting was an urban, level I trauma and teaching center.

Sample:

The sample size consisted of monthly trauma mortality data and autopsy reports.

Procedures:

A list of trauma deaths is sent to the ME office 1 week prior to trauma morbidity and mortality (TMM) conference. The ME brings and reviews the autopsy reports at TMM conference to allow for open discussion of case reviews. The autopsy reports are then delivered to the Health Information Management (HIM) office and scanned into the patient's medical record within 24 hours. The HIM department adds an electronic signature line for the trauma surgeon to sign signifying the review of autopsy information. The trauma coders review the autopsy report and add correct data to the trauma registry. The availability of the scanned autopsy report is easily accessible for the trauma surgeon, trauma registrar, coder and trauma nurse to review for quality care.

Findings/Results:

Review of the new autopsy process revealed 85% scan compliance within the first month, a slight decrease the second month at 79% and 100% compliance the third month after implementation. Challenges to maintaining high compliance include accurate, concurrent trauma registry reporting and communication with the ME office. Prior to implementation there were 12 cases with a mortality severity of injury scores below 4 (highest score) which required further case review. Our hope is that this process will improve the ICD-9-CM coding to allow for accurate mortality severity of injury which still needs to be evaluated.

Discussion/Conclusions/Implications:

In summary, this initiative improved our collaboration with the ME office, allowed for easy access to the autopsy reports by scanning them into the medical record, improved accuracy of injury coding and eliminated missing diagnosis.

Research - R1

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

An Evaluation of Extra-Institutional Mortality Review in a Regionalized Trauma System

Authors:

[Lynn Eastes, RN, MS, ACNP-BC](#) and Susan Bergstrom, RN, BS, MSHA

Background & Purpose:

As a means of measuring quality of care, trauma centers and systems have long used panel review and categorization of deaths as preventable and non-preventable. The purpose of this study was to evaluate the agreement of the preventability attribution in decedent trauma patients between a regional quality review committee (Committee) and individual trauma centers review processes. Members wanted to determine if preventability attributions by the Committee mirror those of the individual trauma center or if the Committee derives different conclusions all together.

Study/Project Design:

This was a descriptive study using retrospective data for the past 10 years

Setting:

Involved multiple trauma centers within a regionalized trauma system in the Pacific Northwest

Sample:

All trauma system patients who expired in one of seven trauma centers (Level 1 through Level 4) within a four county region from 1999 through 2009.

Procedures:

Applying pre-determined criteria, the chairperson selected a subset of deaths for Committee review. Cases were presented by a surgeon or Emergency Medicine physician and discussed by the Committee comprised of a multidisciplinary group of nurses and physicians. To assign an attribution of non-preventable, potentially preventable, and frankly preventable, the Committee members voted and the majority opinion prevailed. The Committee attribution was then compared to the individual institutional attribution to determine if there was agreement or disagreement.

Findings/Results:

Over 10 years, the Committee reviewed 279 deaths. Ninety one percent were blunt injury mechanisms and 70.6% of the patients were male. The mean age was 54 and the mean ISS was 25. Hospital and committee reviews were discordant 21% of time. The Committee was more critical than the hospital review 8% of the time and less critical 13% of the time $p < 0.001$.

Discussion/Conclusions/Implications:

The extra-institutional mortality review added significantly to the process of outcome assessment in a regionalized trauma system. Extra-institutional mortality review is a reliable and robust method of providing an external audit and compels designated trauma centers to be held publically accountable for the outcomes of their patients. A higher level of death review fosters identification of region-wide problems that should be targets for quality improvement initiatives.

Research - R2

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Discovering Bias in Identifying Opportunities for Child Abuse Victim Advocacy

Authors:

[Summer Magoteaux, RN](#); Leah Sheppard, RN; Joshua Hamilton, MD; Matt Eckhoff; Pamela Garcia-Filion, MPH.; Stephanie Zimmerman, MD and David Notrica, MD

Background & Purpose:

In 2008, an estimated 1,740 children ages 0 to 17 died from abuse and neglect (US Department of Health and Human Services, 2008). Nurses have a unique and important role in bringing those children who are being abused to the attention of Child Protective Services. Unfortunately, there is evidence indicating a potential racial disparity in the detection of child abuse. The purpose of this study was to determine whether there was racial disparity present in our own institution which contributed to missed opportunities by nurses to advocate for their patients in detecting child abuse.

Study/Project Design:

The study was a retrospective, descriptive cohort.

Setting:

The study was in a Level I pediatric trauma center with annual census of approximately 55,000.

Sample:

Children aged 2 years or less with a skull fracture or femur fracture seen in the emergency department between January 2007 and October 2009.

Procedures:

Emergency (ED) and medical records were reviewed to ascertain whether a skeletal survey was ordered for each subject. An order for a skeletal survey served as a surrogate indicator for the suspicion of child abuse by the evaluating nurse or medical professional. Both admissions from the ED and ED discharges were included. The race/ethnicity of subjects was classified as white or minority (Hispanics comprised more than three-quarters). To determine whether there was a disparity in skeletal survey orders between racial/ethnic groups, frequency estimates were compared using the Fisher's exact test.

Findings/Results:

Of the 124 study subjects, 63% were minority and 62% presented with a skull fracture. Skeletal surveys were ordered for 26% of 77 skull fractures and for 60% of 47 femur fractures. Minority children were more likely than white children to have skeletal surveys ordered for skull (29% vs. 21%, $p=0.560$) and femur fractures (65% vs. 52%, $p=0.398$), although these differences did not reach statistical significance. Among those subjects admitted to the hospital ($n=72$; 58%), minority children with a skull fracture were even more likely to have skeletal survey (50% vs. 20%, $p=0.088$). An increased likelihood for a skeletal survey, albeit not statistically significant, was also found in minority children with a femur fracture (81% vs. 73%; $p=0.685$).

Discussion/Conclusions/Implications:

The trends of our study suggest that suspicion of child abuse is higher for minority patients which may reflect inherent racial bias. Conversely, suspicion of abuse was lower for white patients, which may fail to trigger protective measures for vulnerable children. The data also indicates that suspicion of abuse for all injured children was far too low, which reinforces the need for continued education as well as the development of clinical practice guidelines to help increase patient advocacy measures by removing bias subjectivity.

Research - R3

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Enteral Nutrition Versus Total Parenteral Nutrition in Patients with Severe Traumatic Brain Injuries

Authors:

[Daneen Mace-Vadjunec, RN, BSN, ONC](#); Jill E. Little, BA and Barbara M. Hileman, BA

Background & Purpose:

Traumatic brain injuries (TBI) pose a serious health care challenge in the United States. Providing nutritional support to this group of patients is important due to an increase in their metabolism, as well as the lengthy time they physically cannot eat. The aim of this study is to compare the effects of total parenteral nutrition (TPN) and enteral nutrition (ENT) on the outcome of severely brain-injured patients. We hypothesize that those patients who have enteral nutrition have fewer complications and a better outcome than total parenteral nutrition.

Study/Project Design:

Retrospective chart review.

Setting:

Community Level I trauma center.

Sample:

Severe TBI (GCS 3-8) from 1/1/2005 to 12/31/2006, identified through Trauma Registry. Excluded: transfer out, other types of feeding, and DOA.

Procedures:

Patients fed by ENT were compared to those fed by TPN. Data were collected on demographic information, mechanism of injury, ISS, arrival and discharge GCS, admitting MD, primary diagnosis, type of tube, no. days TPN or ENT, ICU and hospital LOS, mortality, discharge disposition, and complications. Descriptive analysis and significance testing was completed using SPSS software. The ENT group was compared to the TPN group in the type and number of complications, the overall outcome (alive vs. dead), and the neurological status at discharge.

Findings/Results:

39 patients studied: 6 TPN, 33 ENT. Overall age: 12-88, m=40. Female to male ratio: 15:24. Mean ISS of all patients: 33 (16-54). Mechanisms of injuries included: 39% MVC, 28% other vehicles, 23% fall, 8% GSW, and 3% assault. Mean age (41 ENT, 36 TPN) and ISS (33 ENT, 36 TPN) were alike in both groups, but 100% of TPN had a very severe ISS (>24) vs. 85% of ENT. Admitting GCS was similar (m=4 ENT, 5 TPN). TPN had a significantly better GCS at discharge (m=10 ENT, 13 TPN; p<0.1, CI 90%). They had similar ICU and hospital LOS (ENT 18, 20; TPN 19, 20, respectively). Complications: 100% of the TPN patients, 91% of the ENT. TPN had lower pneumonia (49% ENT, 33% TPN) and SIRS (ENT 88%, TPN 84%) rates. ENT had a lower sepsis rate (18% ENT, 50% TPN; p<0.1, CI 90%). There were more DVTs in ENT (2) than TPN (0). More ENT patients went home (1), but the only deaths were in the ENT group (3). A comparable amount went to LTC (30% ENT, 33% TPN), but more TPN patients went to rehab (56% ENT, 67% TPN).

Discussion/Conclusions/Implications:

ENT had fewer complications and lower ICU LOS. Yet, TPN did better overall based on improved GCS and lower mortality rate despite a higher admitting ISS. Although the TPN group had more complications, they were treatable, unlike the poorer neurological and mortality outcomes of the ENT group. Therefore, the route that nutrition is provided may impact patient outcome. A major limitation was the small sample size, especially in the TPN group. Recommendation for future studies would be to extend the time frame to allow a larger sample size and to conduct a prospective, randomized trial.

Research - R4

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Evaluation of Temperature Monitoring and Intervention in Patients at a Trauma Facility

Authors:

Frances M.H. Grissom, RN, BSN; [Karen A. McQuillan, RN, MS, CNS-BC, CCRN](#); Theresa Logan, RN, BSN; Anne Grafton, RN, MS; Christie Collins, RN, BSN, CCRN; Joseph Kufera, MA and Kathryn T. Von Rueden, RN, MS, ACNS-BC, FCCM

Background & Purpose:

Fever is a common finding in trauma patients. Although research findings support preferred methods for taking temperatures (Ts) and recommend avoiding fever in neurologically injured patients, little evidence exists to guide when fever should be treated or which interventions are most effective. Primary objectives of this study were to define how Ts are taken, determine when an elevated temperature (T) is treated and identify strategies currently used to manage fever. This data will provide a basis for future studies to define best evidence based practice around these issues.

Study/Project Design:

A prospective descriptive study

Setting:

Critical care (CC) and intermediate care (IMC) units of a large, academic, level I trauma center

Sample:

A convenience sample of 94 trauma patients between ages 18 and 65 admitted to in-patient beds. Patients declared brain dead were excluded.

Procedures:

All staff nurses on the 3 CC and 3 IMC units were informed of the study and involved in the data collection. Every 24 hours a Temperature/Intervention Flowsheet was placed at each patient's bedside. The bedside nurse documented on the flowsheet each time a T was taken, the patient's body T, the method used to obtain the T, and any interventions used for T management. Relevant activities that may have affected the patient's T were noted under a comment section. A demographic sheet containing unidentifiable patient data was completed by a study investigator and kept with the Temperature/Intervention Flowsheet for each patient. Data collection forms were coded to prevent matching of data to a specific patient thereby protecting patient confidentiality.

Findings/Results:

The sample included 94 trauma patients (36% CC; 53% IMC; 1% unknown). Subjects had injury to the thorax (n=7), skeleton (n=15), abdomen (n=5), soft tissue (n=7), brain (n=22), spinal cord (n=6) or other area (n=14). Twelve had injury to > one body system. Mean age was 39 years (range 18-64). Temperatures were recorded a median of 5 days/patient (range 1-30) for a total of 5487 recorded observations. Of these, 22% were $\geq 101^{\circ}\text{F}$. Methods for taking T included, rectal (51%), bladder (26%), oral (21%) and pulmonary artery catheter (PAC) or axillary (< 1% each). No interventions were used for 74% of T observations. Interventions to manage T included, a fan (13.6%), acetaminophen (3.8%), acetaminophen with a fan (1.3%), ibuprofen (0.7%), a forced-air warming blanket (0.7%), ice packs (0.7%), a cooling blanket (0.6%), acetaminophen with a fan and ice packs (0.5%), and a cool bath (0.4%). Interventions were used in 47% when Ts were 101-101.9oF and in > 90% when Ts were $\geq 104^{\circ}\text{F}$.

Discussion/Conclusions/Implications:

Subjects were febrile for 22% of the recorded T observations. Over 78% of Ts were obtained using a core T measure (rectal, bladder or PAC). Frequency of intervention for Ts increased substantially as the T increased indicating that nurses treated T more often as the patient became more hyperthermic. Interventions used for Ts varied, with a fan followed by antipyretics used most often. This indicates a need to better define the most effective interventions so that evidenced based protocols for fever management can be developed.

Research - R5

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Fewer Traffic Injuries Occur During the Full Moon Cycle

Authors:

Rebecca Peick; Bryan Troop, MD, FACS, FCCM; [Antoinette Kanne, RN, MS APRN B-C](#); Patsye Stanley, RHIT, CAISS and Linda Elkin

Background & Purpose:

During a full moon, the evening is brighter than during a new moon. Our hypothesis is that the better illumination during lunation helps prevent traffic accidents.

Study/Project Design:

This was a retrospective study utilizing a query of the Trauma Registry for traffic accidents.

Setting:

The Trauma Registry of a suburban Level 1 Trauma Center was used for the study.

Sample:

Data was gathered from calendar years 2005 through 2008. A total of 1195 patients were admitted during the study days.

Procedures:

The Trauma Registry was queried for traffic accident victims who arrived during a full moon (plus and minus one day). The volume was compared to the number admitted during new moon (plus and minus one day). Injured patients from automobiles (MVC), motorcycles (MCC), bicycles (BCC), and all terrain vehicles (ATV) were analyzed. An unpaired t-test was used to assess for statistical significance.

Findings/Results:

In every category of vehicle analyzed, there was higher volume during new moons. The difference was most pronounced for bicycle victims and ATV accidents, and least for automobiles. The comparison between full moon and new moon volume was found to be highly significant ($p=0.023$). Bicycle and ATVs may have a higher frequency of off road use in comparison to motor vehicles and motorcycles. The presence or absence of off road conditions may be a contributory variable for future study.

Discussion/Conclusions/Implications:

Many factors affect the admission volume of a trauma center. Weather, season of the year, road conditions, and age of drivers are such factors. It is also known that crashes occur at higher rates per mile driven at night. Our findings found an association of lower traffic victim volume during lunations compared to new moons. Our hypothesis is that the increase in luminosity during lunations, improves night time vision. The improved vision helps reduce the number of crashes. The common myth of higher ED volumes during a full moon may have been busted.

Research - R6

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Geo-Epidemiologic Mapping of Pediatric Blunt Trauma (2002-2008)

Authors:

Laurens Holmes Jr., DrPH, PhD; [Diane Hochstuhl MSN, RN, NP-C](#) and Alfred Atanda Jr., MD

Background & Purpose:

Previous studies have reported demographic variability with motor vehicular-related pediatric blunt trauma (PBT). We aimed in this study to assess the cumulative incidence of PBT in this state by zip code and to determine if individual zip code rates vary significantly from the state as a whole.

Study/Project Design:

A retrospective assessment of the cumulative incidence of vehicular-related pediatric blunt trauma.

Setting:

The state trauma registry was utilized to assess the cumulative incidence of trauma by zip code.

Sample:

Data was extracted on all pedestrians age 0-17, who were struck by a motor vehicle between January 1, 2002 and December 31, 2008.

Procedures:

The state trauma registry was used to assess the cumulative incidence of trauma by zip code. Data was collected on all patients who sustained a motor vehicular-related PBT injury while walking, running, or riding a bike, scooter, or skateboard. All collisions while children were riding a motorized vehicle were excluded. The cumulative incidence and Poisson regression analysis were used to estimate the relative risk of trauma in each zip code compared to the state, while Microsoft geographic software was used for mapping.

Findings/Results:

There were 319 PBT events during this period. Four zip codes were identified as having the highest incidence of motor vehicular-related PBT. There was a four-fold increased rate of PBT in one zip code, a three-fold increase in another, a two fold increase in a third. The cumulative incidence rate persisted in two zip codes although insignificant, even after adjustment for race, age, land area, and traffic exposure. The highest period prevalence (PD) was among adolescents, (13-17 years) 36.7%, intermediate among preteens (9-12 years) 25.7%, children ages (5-8years) 21.9%, and lowest among small children 9ages 0-40, 15.7%. Black children had the highest PD, 49%, Whites 36.7% and Hispanics 12.7%. Males showed a PD of 78.0% and females 21.9%.

Discussion/Conclusions/Implications:

In this state, motor vehicular-related pediatric blunt trauma (PBT) varies by zip code, with the highest cumulative incidence in the major city. This is indicative of geographic variability. Further research is needed to characterize these factors and help guide zip-code specific PBT prevention strategies.

Research - R7

Oral Presentation - Thursday, March 31, 2011 - 2:15-3:15 PM

Abstract Title:

Hospitalized Injured Older Adults: Clinical Utility of a Rib Fracture Scoring System

Authors:

[Cathy A. Maxwell, MSN, RN, CCRN](#) and Lorraine C. Mion, PhD, RN, FAAN

Background & Purpose:

The number of hospitalized injured older adults (HIOAs) is increasing as the population ages. Over 40% of patients admitted to hospitals with rib fractures are age 65; associated morbidity and mortality are significantly higher in this group. Easter (2001) proposed a rib fracture scoring system (RFSS) to guide risk assessment and clinical management for patients age 50, but the development was limited to one site. The purpose of this study was to validate whether the RFSS had clinical utility in predicting outcomes for HIOAs treated in a different setting.

Study/Project Design:

Retrospective cohort design

Setting:

A level II trauma center

Sample:

Eighty-nine patients, age 50 and older admitted with rib fractures between January 2002 and April 2005.

Procedures:

Trauma registry data and medical records were examined. Independent variables included age, gender, ISS, AIS scores for 6 body regions, comorbidities, and the RFS. Outcomes included hospital LOS, ICU LOS, and discharge disposition. Data analysis included descriptive statistics, bivariate correlations, and hierarchical linear and logistic regression models.

Findings/Results:

The sample of 89 patients included 57 (64%) men. The mean age was 63.1. Mean hospital LOS and ICU LOS were 12.5 and 4.8 days respectively. Sixty-four (72%) patients were discharged home. The mean RFS was 5.9. Correlations with LOS were statistically significant for head/neck injuries, chest injuries, age, and the RFS. In multivariate models for hospital and ICU LOS, chest injuries and head/neck injuries remained as statistically significant associated factors after controlling for all independent variables ($p < .05$, adjusted $R^2 = .25$ and $.27$ respectively). Using the RFS rather than age and chest injuries resulted in similar findings for hospital and ICU LOS ($p < .05$) (adjusted $R^2 = .23$ and $.27$ respectively). A multivariate logistic model for discharge disposition ($p < .01$) revealed the only variables contributing to the odds of being discharged to a facility other than home were older age ($p < .01$) and extremity injury ($p < .01$). RFS was not significant.

Discussion/Conclusions/Implications:

Head/neck injuries and RFS explain 23% and 27% of the variance in hospital and ICU LOS respectively in rib fracture patients older than 50. The RFS is easy to calculate and use of the RFS may be clinically useful for raising awareness of the risk associated with rib fractures in older adults. Further study is warranted at other sites to determine whether the RFS is a clinically useful tool globally.

Research - R8

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Implementing Hospital-Based Youth Violence Intervention Programs: Identifying Internal and External Barriers

Authors:

[Gina E. Ryan RN, BSN](#)

Background & Purpose:

Violence is the 2nd leading cause of death for all 15-24 year olds and the leading cause of death for African Americans (AA) in this same cohort. Up to 40% of violently injured youth will become victims or perpetrators of a violent crime and 20% will be dead within five years. Hospital admission for a violence-related injury provides a golden opportunity to intervene and prevent recidivism in these at risk youth. The goal of this study was to identify internal and external barriers to delivering hospital-based youth violence interventions to youth hospitalized for violence-related injuries.

Study/Project Design:

Retrospective chart reviews from March 2006 (inception of our hospital program) to December 2009.

Setting:

A Level I trauma facility in upstate New York treating ~ 60 youth/ year for gunshot or stab wounds.

Sample:

196 youth < 18 years of age treated for a gunshot wound or stab wound; average age was 15.2 (+/-2) years; mostly male (80.6%) and AA (75.6%).

Procedures:

Alarming trends in local violence prompted a collaborative effort in our hospital to develop a hospital-based youth violence intervention program in March 2006 that has since evolved to a comprehensive five component intervention. An attempt to evaluate and measure the effects of these interventions on recidivism rates revealed a trend of inconsistencies in the delivery of these interventions. Retrospective chart reviews were completed to gather demographic data and outcome measures, including: psychosocial data, risk factors, hospital interventions, and recidivism rates of those youth treated at our facility for penetrating wounds. Univariate statistics including frequency distributions were used to describe demographics and outcome measures.

Findings/Results:

We identified multiple internal and external barriers encountered by this hospital when implementing hospital-based youth violence interventions. Internal barriers (those within the locus of the hospital setting) identified were: underreporting (due to inconsistency/subjectivity in interpretation of nature of injury); frequent staff/resident turnover; availability of weekend resources; and hospital disposition. External barriers (those imposed by the cultural and psychosocial dynamics of the high risk population for whom these interventions were implemented) identified were: patient/family refusal to accept services/referrals; patient not forthcoming about circumstances of injury; circumstances of injury rarely being resolved before release from the emergency department (ED); and patient provided unreliable contact information for follow up. Oftentimes the impact of these external barriers was minimized if the patient was admitted to the hospital as opposed to discharged from the ED.

Discussion/Conclusions/Implications:

These findings alert clinicians to the barriers of delivering hospital-based youth interventions following violence-related injuries. Findings should guide organizational change to optimize delivery of interventions to at risk youth. Collaborative performance improvement initiatives could minimize or eradicate these barriers. Trauma nurses play a vital role in identifying at risk youth and initiating appropriate interventions for those presenting to the hospital. Future study should focus on effects of hospital-based youth violence intervention programs and their impact on trauma recidivism.

Research - R9

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Navy Trauma Training: More than a "Nice to Have?"

Authors:

[Christopher Jack RN, MS, CNS, CCRN](#) and David Plurad MD, FACS

Background & Purpose:

The United States is at war, and the need for highly skilled trauma trained medical personnel is crucial for the Navy's medical mission. The Navy's trauma training program, Navy Trauma Training Center, was created in 2002 and has been preparing medical personnel for deployment into the combat theater. NTTC's mission is to provide Navy medical personnel hands-on, high volume trauma experience prior to deployment. This training can only be achieved at an inner city Level I trauma center. The goal of this project is to describe the NTTC and report on its primary outcomes.

Study/Project Design:

Descriptive study

Setting:

Inner City Level I Trauma Center

Sample:

400 Navy medical personnel

Procedures:

Each team member referred to as rotator completes a pre- and post-course self-assessment. Outcome #1 measured the percent improvement regarding each rotator's self-reported knowledge and skill level related to selected trauma topics. Rotators record all trauma related procedures in which they observe or participate. Outcome #2 measures the total number and types of procedures that each rotator performs. Rotators take part in four trauma simulations utilizing the Human Patient Simulator (HPS). Outcome #3 measures the time taken to perform 14 critical tasks proven to optimize trauma patient outcomes. Finally, rotators are contacted 1 to 1.5 Years post-deployment to evaluate appropriateness of target audience, course effectiveness, and potential curriculum changes.

Findings/Results:

Providers self-reported a knowledge & skills improvement of 43% & 41%, respectively. Nurses self-reported a 46% & 33% increase. Corpsmen had a 41% and 50% improvement. The number of procedures performed was 118, observed or participated was 250. Each rotator had 85 patient contacts, six trauma resuscitations, & 10 critical care transports. Rotators participated in 28 primary & secondary surveys, 8 ET intubations, 4 thoracostomy tube placements, 35 IV catheter insertions, 35 FAST exams, 5 central line placements, 11 transfusions, 2 initial resuscitations of burn patients. Corpsmen participated in 8 EMS transports. For HPS, significant improvement in the time to perform critical tasks was demonstrated. Eighty-five percent of responders had recently deployed, and over 80% had combat casualty experience. Seventy-two percent strongly agreed the training increased their confidence with combat casualties, 82% felt strongly that the program should be mandatory prior to deployment.

Discussion/Conclusions/Implications:

The lack of Level I Navy trauma facilities necessitates collaboration with civilian level I trauma centers. The NTTC satisfies this deficit. Currently, this training is not a requirement; however, based on post-deployment surveys, the overwhelming majority of course graduates believe it should be. Future studies should investigate whether trauma training should be a requirement, what the cost/benefit of such a requirement would be, and what factors can be overcome to ensure the best possible preparation for deploying Navy medical personnel.

Research - R10

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

One Institution's Research Protocol Implementation Experience: Evaluating Utilization of a Pediatric Traumatic Stress Assessment Tool by Nursing Staff

Authors:

[Marie Campbell, RN, MEd, MS, CPC, CPHQ](#); Mary Jo Pedicino, RN, MSN; Kelly Eckrich, RN, BSN; Sue Rzucidlo, RN, MSN and Grace Good, RN, BSN, MA

Background & Purpose:

Most hospitalized injured children who suffer from posttraumatic stress (PTS) symptoms are undiagnosed & untreated. RNs are in a unique position to screen for PTS as part of routine assessment. Severity of injury/trauma is not predictive of which children/families develop PTS. This study was designed primarily to assess integration of assessment for PTS risk into routine nursing care. Additional aims: describe the proportion of children & parents with stress symptoms/risk for ongoing distress; evaluate knowledge/comfort with the tool, & describe patient/family needs identified by the process.

Study/Project Design:

Descriptive study with before & after evaluation of knowledge and analysis of screening tool use.

Setting:

RNs on the Trauma Med/Surg Unit who care for trauma patients were trained to use the screening tool.

Sample:

78 staff nurses on the Trauma Med/Surg Unit as well as 216 trauma patients who met protocol criteria.

Procedures:

Staff RNs were given a Self-Assessment prior to the on-line & face to face training sessions to assess knowledge as well as skills & competencies for trauma informed care. A Self-Assessment Post-Survey to assess any changes as well as interventions/intervention needs for trauma informed care was administered. Patients admitted to the Trauma Med/Surg Unit who had a trauma-related diagnosis, ranged in age from 7-17 years, have a custodial parent/legal guardian capable of providing verbal consent and who speak English were approached. Those excluded were: Non-English speaking patients & parents, since the screening tools are only available in English, parent is less than 18 years old, victims of abuse/family violence, those cognitively unable to understand and answer screening questions.

Findings/Results:

During the 6 month study period, 216 injured patients met criteria for the study. Early in the enrollment process, the consenters were not only consenting but also administering the tools. The Co-investigator on the unit encouraged the consenters to accompany the RN caring for the patient if s/he had not yet administered a screening tool. This support for the RN, on the first use of the tool, increased the likelihood of the RN completing subsequent screening tools independently. During the study period, 24 patients were excluded after approach; another 11 refused and 100 were missed. A total of 81 patients were consented with only 1 not completing the screening process. Of the patients and their parent/caregiver(s) who did complete the screening tools, 27 scored positive which prompted referrals to the Trauma Social Worker per normal trauma care procedure.

Discussion/Conclusions/Implications:

The support and guidance of a Co-investigator on the Nursing Unit was crucial. The approach rate steadily increased during the study time frame while she was present. We found it helpful to have consenters who worked all three shifts and one who worked on the weekends since one third of the patients during the study period were admitted on weekends. Further study is required to determine if early screening skewed the ratio of patients/families that scored positive or if this is actually the norm for early in-patient screening for acute stress.

Research - R11

Oral Presentation - Thursday, March 31, 2011 - 2:15-3:15 PM

Abstract Title:

Prevalence of Delirium in Trauma Patients

Authors:

[Jennifer Merenda RN,MS](#); Kathryn Von Rueden MS,ACNS-BC,FCCM; Sara Hake RN,MS; Breighanna Wallizer RN,BSN; Paul Thurman MS,CCNS,ACNPC and Karen McQuillan, RN, MS, CNS-BC, CCRN, CNRN

Background & Purpose:

Delirium, an acute change or mental status fluctuation, inattention and disorganized thinking, has been reported in up to 87% of intensive care unit (ICU) patients. It is associated with increased morbidity, mortality, length of stay and post-discharge cognitive dysfunction. A literature review revealed one small prospective study and a retrospective study of delirium in trauma patients. The aims of this study were to determine the prevalence of delirium and related factors in the trauma population. This information may be used to identify risk factors and develop preventive measures.

Study/Project Design:

Prospective observational descriptive study.

Setting:

ICUs and intermediate care units (IMCs) at a large, urban academic level I trauma hospital.

Sample:

A convenience sample of 216 hospitalized trauma patients.

Procedures:

Eight hundred trauma patients were screened for inclusion on 13 data collection days over several months. Exclusion criteria included: documented brain injury, history of psychosis or cognitive impairment, non-English speaking, significant hearing or vision loss, excessive sedation (Richmond Agitation and Sedation Scale <-3) or non-trauma admission. Eligible patients were assessed for delirium using the Confusion Assessment Method-ICU (CAM-ICU) tool. Demographic data, mechanism of injury and APACHE III physiologic data were collected from the medical record. A designated team of 7 trained nurses conducted the CAM-ICU and data collection to assure inter-rater reliability. Data were analyzed using descriptive and inferential statistics.

Findings/Results:

A sample of 216 trauma patients (n=114 ICU and n=102 IMC) met inclusion criteria. The sample included 76% men and 24% women. Mechanism of injury was classified as vehicular (n=89, 41%), fall (n=64, 30%), penetrating (n=48, 22%), crush (n=9, 4%) and sport (n=6, 3%). Overall mean age was 46±19.9 years (range 18-95). Overall delirium prevalence was 24% (n=52). Patients with positive CAM-ICU were older (mean age 54±19.8 vs. 44±19.5, p= 0.004). In patients age greater than or equal to 65 (n=43, mean 78), 35% were found to have delirium vs. 21% in those age <65. This difference was not statistically significant. ICU patients were more likely than IMC patients to have delirium (36% vs. 11%, p<0.001). Higher severity of illness, measured by APACHE III, was associated with delirium (mean APACHE III score =39). In those without delirium, mean APACHE III score was 26 (p<0.001). Delirium was present in 55% of patients on mechanical ventilation compared with 15% of non-ventilated patients (p<0.001).

Discussion/Conclusions/Implications:

Previous studies reported only ICU delirium rates. Inclusion of ICU and IMC trauma patients in this study provides a more comprehensive view of delirium, demonstrating that delirium can occur in both areas. These results indicate that trauma patients with delirium were older, mechanically ventilated, or had higher illness severity. The results afford an opportunity to identify and implement strategies for early intervention to reduce the incidence of delirium. Further exploration of predictors of delirium in trauma patients, along with prevention and management strategies is warranted.

Research - R12

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Pulmonary Hygiene: Whose Job Is It?

Authors:

[Valerie Hanlon BSN, CCRN](#); Freda White RN, MSN, MBA; Chain-Wen Wang BSN, EDD, MS; Amanda Albright RN, BC; Kara Terhune MSN, RN and Eric Hayes RBA, RRT and Christopher McCormick BS, RRT

Background & Purpose:

The terms "pulmonary hygiene" and "pulmonary toilet" are commonly used in the arena of acute healthcare. Acute care practitioners are routinely instructing bedside caregivers to perform these tasks to assist patients with their pulmonary status. We hypothesize that role delineations between Respiratory Therapists and Nursing are perplexing and thus lead to less compliance with treatment interventions.

Study/Project Design:

Perception survey was presented to Respiratory Therapy staff and Nursing Services.

Setting:

Rural, Level 1 Academic ACS Trauma Center, Magnet facility.

Sample:

Fifty four respiratory therapy staff (N=80, 68%) and thirty three registered nurses (N= 51, 65%) participated in the perception survey.

Procedures:

Standardized trauma pulmonary care order sets developed based on the survey findings will be presented to respiratory therapy and nursing services for implementation. A comparison of upgrades in care to ICU, those requiring intubation and pneumonia and will be made six months after the implementation of the order sets.

Findings/Results:

Respiratory therapy staff had an overall better understanding of the physiological aspects that the various treatment measures provided to the patient. Nursing staff had favorable results regarding policy and procedure but had mixed reviews regarding the definition of pulmonary hygiene/toilet and what adjunct to therapy were incorporated. The nursing staff appeared to have difficulty delineating their role from the respiratory therapist role.

Discussion/Conclusions/Implications:

The pulmonary care perceptions survey provided insight into the beliefs and understanding of both the nursing services and respiratory therapy staff. The findings prompted us to develop a standardized definition of pulmonary hygiene within the acute care setting to optimize treatment plans in regard to trauma patients' respiratory status.

Research - R13

Oral Presentation - Thursday, March 31, 2011 - 2:15-3:15 PM

Abstract Title:

Reducing Pressure, Shear and Discomfort on a Lateral Transfer Chair: A Comparison of Three Novel Seating Surface Designs

Authors:

Lisa L. Douglas, RN, MSN, CNS; [Ann N. Tescher, RN, PhD, CCRN, CCNS](#); Tamara L. Vos-Draper, OTR, ATP; Brian Lahr, Statistician; Jeffrey L. Lamb, PT; Therese M. Jacobson, RN, MSN, CNS, CWOCN and Anne G. Miers, RN, MSN, CNS, CNRN

Background & Purpose:

Mobilizing trauma patients out of bed is limited by many factors, thus increasing their risk for pressure ulcer development. A lateral-transfer-chair (LTC) is often used to move debilitated or non-weight-bearing patients from bed into a seated position, but its use may be limited by patient discomfort. Compare the pressure and shear reducing properties of the standard LTC pad with three novel seating surface designs (CM, CE, LQO), in three positions (flat, 60 and 90 degrees elevated). A secondary aim was to examine the degree of discomfort on each surface and in each position.

Study/Project Design:

Randomized control trial, repeated measures using subjects as their own control group

Setting:

Tertiary academic medical center, rehab unit

Sample:

40 healthy adult volunteers

Procedures:

Forty healthy adult volunteers were seated in random order on four surfaces used on the LTC, and instructed not to shift position. Tissue interface pressure (TIP) at the sacrum/ischial tuberosities was measured using a pressure mapping system when the head of chair elevation was successively placed at 0, 60 and 90 degrees. The amount of forward horizontal motion as measured externally at the hip trochanters was used as a surrogate measure of shear. Pressure readings and subjective discomfort scores were recorded after 5 minutes in each position. Measures of pressure, horizontal forward motion, and discomfort were tested for an association with the four surfaces using mixed regression modeling with random effects to account for the repeated measures at the three positions.

Findings/Results:

Three novel seating surfaces were compared to the standard surface supplied with the LTC. These new surfaces (CM, CE, LQO) were similar to a hospital mattress; two were designed to reduce shear (CE and LQO). At all three HOB positions, TIP and forward motion were lower for CM, CE, and LQO compared to the LTC ($p < .001$ each). There was no difference in TIP levels between CM, CE, and LQO at HOB positions of 0 and 60 degrees ($p = 0.72$ and 0.10 , respectively), but lower TIP levels on LQO at 90 degrees ($p < .001$). Comfort of the LTC pad was worst at both 0 and 60 degrees ($p = 0.001$ to 0.037), but not significantly different at 90 degrees ($p = 0.06$ to 0.91). Conversely, among CM, CE, and LQO, there was no significant difference in discomfort ratings at 0 and 60 degrees, and significantly increased discomfort in CM at 90 degrees as compared to CE and LQO ($p = 0.006$ and 0.044 , respectively).

Discussion/Conclusions/Implications:

The three novel surfaces were superior to the TLC standard surface in reducing TIP and horizontal forward motion at all three positions, and in reducing discomfort at 0 and 60 degrees. However, when compared to the other two novel surfaces (CM and CE), the LQO surface demonstrated mixed results with regard to TIP reduction, horizontal forward motion and discomfort, and thus warrants further study. It is recommended that the findings be shared with industrial partners in order to improve seating design, pressure relief, and comfort for this valuable piece of clinical equipment.

Research - R14

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Reduction in Ventilator Associated Pneumonia (VAP) through enforcement of a Ventilator Associated Pneumonia Prevention (VAPP) Protocol

Authors:

[Jessica McDonnell, RN;BSN](#); Tracy Rogers, RN, MSN, CCRN, NEA-BC and Michael Moncure, MD, FACS

Background & Purpose:

VAP is one of the most costly and serious complications of mechanical ventilation and is the nosocomial infection associated with the highest mortality rate. To decrease VAP rates, daily bedside rounds on trauma patients in the Intensive Care Unit (ICU) were implemented by Trauma Case Managers (TCM) to ensure adherence and enforcement to the VAPP protocol. Our institutions pre-VAPP protocol implementation VAP rates in 2003 were considered to be our control. 2004 to 2005 is the pre-enforcement of VAPP protocol group. TCM enforcement period occurred between 2006-2008.

Study/Project Design:

A retrospective review of ventilated trauma patients before & after implementation of VAPP protocol.

Setting:

University tertiary hospital, Level 1 Trauma Center, ICU.

Sample:

696 consecutive ventilated trauma patients between 2004 and 2008 were divided into 3 groups: control, pre-enforcement & enforcement period.

Procedures:

A VAPP protocol was implemented in January of 2004 with no enforcement. This protocol required all ventilated patients to have the head of the bed elevated to 30 degrees or higher, oral cleansing with chlorhexidine twice daily using a suction swab system, daily ventilator weaning trials, naso-gastric tubes were replaced by oro-gastric tubes & peptic ulcer prophylaxis. In 2006, the Trauma Case Managers began daily rounds on the ICU patients enforcing the VAPP protocol & notifying the bedside nurse or physician as needed to ensure compliance with and documentation of the VAPP protocol being implemented. Statistical analysis was performed with Fisher's two-tailed test, Satterthwaite, & Chi-Square analysis by computer data analysis software. Statistical significance was considered when $p < 0.05$.

Findings/Results:

In 2003 during the Pre-VAPP protocol period, 5.2 cases of VAP occurred per 1000 days of ventilator support. After the VAPP protocol was implemented in 2004, the number of cases of VAP decreased to 2.4 per 1000 days of ventilator support ($p=0.172$). In 2006, after the VAPP protocol was strictly enforced by trauma case managers, 1.2 cases of VAP occurred per 1000 days of ventilator support ($p=0.085$). When comparing the control period to the Enforcement period, it is clinically significant, but not statistically significant ($p=0.062$). However, during the enforcement period, the non-VAP patients saw a significant decrease in mortality ($p=0.024$), total hospital days ($p=0.007$), ICU days ($p=0.002$), ventilator days ($p=0.002$), and hospital charges ($p=0.03$) compared to VAP patients. The Enforcement period showed both a clinical and a statistical significance ($p=0.014$).

Discussion/Conclusions/Implications:

Utilization of a VAPP protocol is beneficial to lower health care costs and improve medical care. Strict enforcement and accountability by TCMs of this protocol may be the key factor to a successful program. Although not statistically significant, the results were clinically significant & decreased the already low incidence of VAP at our institution by half. In busy Level 1 trauma centers it is vital to have practices, such as daily rounds, in place in order to optimize patient outcomes & prevent avoidable complications. Other populations may benefit from implementing daily rounds.

Research - R15

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Risk Factors Associated With Pressure Ulcer Development in Critically Ill Traumatic Spinal Cord Injury Patients

Authors:

[Dawn Grimm](#); Patirica Wilczewski; Anastasia Gianakis; Bridget Gill; Wendy Sarver and Molly McNett

Background & Purpose:

Background: Pressure ulcers develop in 33-56% of intensive care unit patients and result in longer length of stay, morbidity, and costs. Critically ill spinal cord injury (SCI) patients are at higher risk for pressure ulcers due to prolonged immobility. Research provides evidence of factors influencing pressure ulcers in long term management of SCI. However, little evidence documents factors influencing pressure ulcers in the critical stage of illness for these patients.

Primary Aim: Investigate risk factors and outcomes associated with pressure ulcers in acute SCI.

Study/Project Design:

Design: Retrospective cohort study.

Setting:

Surgical Intensive Care Unit, Level I urban, academic trauma center.

Sample:

94 adult trauma patients admitted to the SICU over a 2 year period with a new diagnosis of SCI.

Procedures:

Data gathered from the trauma registry and medical records on patient baseline and daily clinical variables.

Outcomes: development of a new pressure ulcer, length of stay.

Findings/Results:

Results: n=94. Most patients (23.4%) were age 61 or greater, male (77%), and Caucasian (70%). Most SCI were due to falls (41.5%) or motor vehicle accidents (29.8%), resulting in C1-C4 incomplete injuries (33.8%). Chi square analyses indicated significant relationships between several clinical variables and pressure ulcer development: use of a fecal management system ($\chi^2=7.973$, $p=.047$), incontinence of stool and urine ($\chi^2=39.579$, $p=.000$; $\chi^2=9.518$, $p=.009$), acidosis ($\chi^2=36.506$, $p=.000$), type of support surface ($\chi^2=88.255$, $p=.000$), use of steroids ($\chi^2=5.052$, $p=.010$), and presence of additional equipment ($\chi^2=22.963$, $p=.000$). Logistic regression analyses revealed that hypotensive episodes were statistically predictive of PU development ($p=0.0497$).

Discussion/Conclusions/Implications:

Implications: Findings highlight risk factors for pressure ulcer development in the critical stage of illness for acute SCI patients. Nursing specific interventions aimed at these risk factors may decrease incidence of pressure ulcers, resulting in improved patient outcomes and hospital costs.

Research - R16

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

SBIRT: How to do it better.

Authors:

[Valerie Hanlon BSN, CCRN](#); Jennifer Knight MD; Alison Wilson, MD; Kimberly Honaker BA and Holly Thomas MSW

Background & Purpose:

The American College of Surgeons requires accredited Level 1 trauma centers to provide Screening, Brief Intervention, and Referral to Treatment (SBIRT) programs. This is an integrated and comprehensive approach to the delivery of early intervention and treatment service through universal screening for persons with substance use disorders and those at risk. We hypothesize that a specialized, licensed behavioral health specialist implementation of a screening tool protocol will identify more at risk patients and these patients will receive more appropriate interventions and treatment.

Study/Project Design:

The control protocol (CP) applied to admitted trauma patients from March to May 2009.

Setting:

Rural Level 1 Academic Trauma Center

Sample:

The control protocol (N = 390) resulted in 135 (34.6%) patients with a positive screen and referrals to psychiatry. The intervention protocol (N = 470)

Procedures:

The patients received a private, independent interview utilizing the CAGE-AID, pre-screen tool by a culturally sensitive, specialized, licensed behavioral health intervener trained in motivational interviewing. Positive pre-screens were further screened with the ASSSIT tool. The PHQ-9 was used to detect co-occurring disorders for all patients with positive screens. Positive screening results were then categorized into 3 separate levels.

Findings/Results:

The control protocol (N = 390) resulted in 135 (34.6%) patients with a positive screen and referrals to psychiatry. 199 (51.0%) patients were missed to screening. The intervention protocol (N = 470) resulted in 444 patients screened with 9.4% (p<0.0001) missed to screening. 189 (40%) patients had a positive screen and required further intervention resulting in 160 brief interventions, 22 brief treatments and 7 (1.4% p<0.0001) referrals to psychiatry. In the IP, 165 patients met the original screening criteria of the CP, resulting in an increase capture of 13%.

Discussion/Conclusions/Implications:

The implementation of a behavioral screening program resulted in the identification of more patients at risk for substance use/abuse and allowed for intervention, brief treatment and referral to treatment while reducing referrals to consulting services.

Research - R17

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Seat Belt Compliance among Hospital Employees: Trauma Center versus Non Trauma Center Is there a difference?

Authors:

[Antoinette Kanne, RN, MS, APRN B-C](#); Alexander Ledbetter; Bryan Troop, MD, FACS, FCCM; Pamela Bunting, DO and Rebecca Peick

Background & Purpose:

Motor vehicle accidents are the leading cause of death for United States citizens from ages 1 to 34. A 2008 survey and data analysis by the NHTSA (National Highway Traffic Safety Administration) found that 13,000 lives were saved by seat belts. Hospital employees regularly see the effects of seat belt usage with regard to injury severity and even death rates. INTRODUCTION: The purpose of this study was to determine a difference in seat belt use of employees of trauma centers compared to non trauma center hospital employees.

Study/Project Design:

This was an observational field study using visual recordings of presence or absence of seat belt.

Setting:

Seat belt use was monitored at three medical centers: one trauma center and two non trauma centers.

Sample:

This was a convenience sample size of 3,158 participants within observed vehicles spread across the three medical centers.

Procedures:

Members of the Trauma Service were stationed at entrances to each of the facilities with closest proximity to employee parking. Observations were specifically recorded from 0630 to 0730 to ensure the largest number of employees entering the medical facility. Typical shift start time for most hospital employees is at 0700. Only vehicles entering the facility were observed for seat belt compliance. Seat belt compliance was considered to be affirmative if the seat belt was visible across the occupant's shoulder. Seatbelt shoulder straps not present or worn incorrectly, were recorded as non compliant or absent. In most instances, two team members were present, one to observe and one to record observational findings.

Findings/Results:

At the level 1 Trauma Center, 1,485 were observed tallying 220 without seat belts resulting in an 85.2% usage rate. 824 observations were performed with a total of 140 without seat belts resulting in an 83.0% usage rate for the first of two non trauma facilities. The second non trauma facility had a total of 849 observations performed, 112 non compliant with seat belt usage resulting in an 86.8% rate of seat belt compliance. The results did not demonstrate a statistically significant difference in seat belt compliance between trauma centers and non trauma centers.

Discussion/Conclusions/Implications:

Employees of trauma centers did not wear their seat belts more than employees of non trauma centers. When examining usage percentages, there is not a statistical difference between facilities. All three facilities are located in a suburban setting with a higher per capita income when compared to other suburbs within the metropolitan area. Seat belt compliance may have been less if measured at an inner city or rural non trauma center. Does an annual seat belt survey impact seat belt compliance? Seat belt surveys are completed at many trauma centers as a prevention effort. Is it effective?

Research - R18

Oral Presentation - Thursday, March 31, 2011 - 2:15-3:15 PM

Abstract Title:

State of the Art Pain Control for Rib Fractures

Authors:

[Michael S. Truitt, MD](#)

Background & Purpose:

Rib fractures continue to be a challenge from both pulmonary and analgesia standpoints. The objective of this study was to report our cumulative experience on the use of a continuous intercostal nerve block delivered via the novel placement of an elastomeric infusion pump catheter (EIPC).

Study/Project Design:

Prospective non-randomized study

Setting:

Busy Urban Trauma Center with 1600 admissions per year.

Sample:

We evaluated 89 consecutive blunt trauma patients with $>$ or $=$ 3 unilateral rib fractures. Patients with any significant additional injuries were excluded.

Procedures:

We then utilized our technique to place catheters in the extra-thoracic, paravertebral space and infused local anesthetic to create a continuous intercostal nerve block. For each patient, preplacement numeric pain scale scores (NPS) and sustained maximal inspiration (SMI) lung volumes were determined at rest and after coughing. Sixty minutes following the placement of the catheters these values were repeated. We also reviewed pre/post placement respiratory rate and length of stay.

Findings/Results:

Mean age was 67 years (21-96), mean ISS was 14 (9-25), and the mean number of rib fractures was 5.8 (3-10). Overall, the mean NPS significantly improved (preplacement NPS at rest = 7.5, postplacement at rest NPS = 2.6, $p < .05$, preplacement NPS after cough = 9.4, postplacement after cough = 3.6, $p < .05$) and this was associated with an increase in the SMI (preplacement SMI = 0.4L, postplacement SMI = 1.3L, $p < .05$). The respiratory rate decreased significantly ($p < .05$), only 1/89 of the study patients required mechanical ventilation, and the average length of stay for the study population was 2.9 days. The catheters remained in place for an average of 122 hours (85-343), and there were no procedural or drug related complications.

Discussion/Conclusions/Implications:

Our results indicate that the placement of EIPC's is a safe, viable, and efficacious bedside procedure for the amelioration of pain and pulmonary risk secondary to rib fractures. It may be a preferable alternative to epidural anesthesia.

Research - R19

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Timely Use of Proning Bed to Treat ARDS in Intensive Care Units

Authors:

[Michael Lloyd, MS, RN](#); Ercele Reyes, MSN; Celso-Ramon Garcia, MSN and Kelly Whartnaby, RN

Background & Purpose:

Background/Purpose: Prone rotational therapy is often used in ICU's to assist in the treatment of ARDS. A protocol driven process was developed by the Trauma ICU nursing staff to place the patient on the proning bed in a timely fashion. We monitored all patients placed on a proning bed in the ICU's and compare the protocol driven process against the non-protocol process. We hypothesized that the protocol driven process to obtain a proning bed will decrease the time from diagnosis of ARDS to placement on a proning bed and improve outcomes.

Study/Project Design:

Study/Project Design: This was a retrospective observational study.

Setting:

Setting: Single-institution, Level 1 trauma accredited hospital in urban area.

Sample:

Sample: All patients diagnosed with ARDS, admitted to the ICU and placed on a proning bed from April 2006 to October 2010.

Procedures:

Procedures: Beginning in 2006 we retrospectively collected data on all ARDS patients that were placed on a proning bed in the Trauma ICU. The first three patients were initially identified and the issue of placement of the patient on the proning bed when ARDS was identified was recognized as a concern. ARDS is defined as two consecutive PaO₂/FiO₂ ratio less than or equal to 200 within a 24 hour period. This resulted in the development of a guideline to place a patient on a proning bed when ARDS was diagnosed. We collected the following data on these patients: PaO₂/FiO₂ ratio, time from diagnosis of ARDS to placement on proning bed, PEEP, arterial blood gases (ABG), diagnosis/injuries, proning bed length of stay (LOS), ICU LOS, hospital LOS, and discharge status.

Findings/Results:

Findings/Results: We found 23 patients with a diagnosis of ARDS, admitted to an ICU and placed on a proning bed. A review of each case identified 14 (61%) patients that were admitted to the Trauma ICU and 9 (39%) were admitted to other ICU's. Of the 23 patients placed on the proning bed 7 (30%) survived and 16 (70%) expired. 5 (22%) patients were placed on a proning bed within 24 hrs and 4 (57%) survived. 6 (26%) patients were placed on a proning bed within 48 hrs and 2 (29%) survived. 12 (52%) patients were placed on a proning bed greater than 48 hrs (72 hrs to 936 hrs) and 1 (14%) survived (placed at 120 hrs). All patients that survived were admitted to the Trauma ICU.

Discussion/Conclusions/Implications:

Discussion/Conclusions/Implications: Given the high risk / high mortality and extended ICU length of stay for patients with ARDS, we plan on revising and implementing the guideline driven process to obtain proning beds in a timely fashion for patients diagnosed with ARDS for all ICU's. Additional factors that would be included and concurrently monitored would be: overall compliance with the guideline, clinical factors such as the timing of ABG's to determine the diagnosis of ARDS, proning bed LOS, ICU LOS, hospital LOS, clinical complications, costs, and discharge status.

Research - R20

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Trauma On Demand: The Use of a Telemedicine Consultation System to Enhance Rural Trauma Care

Authors:

[Regina Medeiros, DNP, MHSA, RN](#); Debra Kitchens, RN, CEN, NREMT-P; Elizabeth G. NeSmith PhD, MSN, RN; Kelli Vaughn, RN, MSN, CEN and Vibha Kumar, MD

Background & Purpose:

Disparities exist in trauma morbidity and mortality based on a rural or urban care setting. The relative risk of a rural victim dying in a motor vehicle crash is 15 times higher than in urban areas. Injury-related deaths are 40 % higher in rural communities than in urban areas and 87% of rural pediatric traumas do not survive to reach the hospital. The purpose of this project was to evaluate provider attitudes, perceived usefulness and provider satisfaction following a pilot test of a telemedicine clinical consult system

Study/Project Design:

Prospective, post-test evaluation using a survey-based tool.

Setting:

One Level I urban Trauma Center and four Rural Hospitals in the Southeast.

Sample:

This was a sample consisting of 12 trauma providers and five telemedicine coordinators.

Procedures:

Subjects completed a survey which assessed attitudes, perceptions and satisfaction following each telemedicine encounter and an additional survey at the end of the pilot period. Surveys had 30-40 items and were tailored to provider or coordinator interest. Both qualitative and quantitative methods were used to analyze the data

Findings/Results:

The majority of respondents reported positive attitudes toward use of the telemedicine system, with approximately 73% (n=11/15) indicating that using telemedicine is a good idea and 80% of respondents (n=12/15) noting that using telemedicine is a positive step. A high percentage of respondents (approximately 87%, or n=13/15) reported that they plan to use telemedicine in the TeleTrauma project in the future. In terms of perceived usefulness of the telemedicine system, approximately 53% of the respondents (n=8/15) noted that using telemedicine increases their effectiveness on the job and approximately 58% (n=7/12) find telemedicine to be useful in their jobs. Of the three rural physicians, approximately 67% (n=2/3) reported that using telemedicine makes it easier to evaluate patients. Approximately 69% (n=9/13) of the respondents indicated that they were satisfied and pleased with use of the telemedicine system

Discussion/Conclusions/Implications:

The clinical teletrauma application constitutes improvement of access to specialized trauma services. It is anticipated that further significant benefit will accrue to the trauma care delivery system as clinical applications evolve and mature. The degree of success experienced by clinical applications was limited due to the Level I's abbreviated schedule to provide teletrauma services to the four rural hospitals. Future plans include a Phase II expansion which will bring the total number of participants to four Level I Trauma Centers and fourteen Rural Hospitals

Research - R21

Poster - Available for viewing beginning 11:00 AM Thursday, March 31, 2011 until 2:15 PM Friday, April 1, 2011

Abstract Title:

Trauma Registrar Demographics, Skills, Responsibilities, Recruitment, and Retention

Authors:

[Suzanne Day RN, BSN, MA](#); Jolene Fox RN, AD and Kathy Cookman BS, CSTR, CAISS

Background & Purpose:

Publications about cancer registrars describe their role and include recommendations for designing professional standards and recruitment strategies. Similar studies have not been done for the trauma registrar group. Our purpose was to describe registrar: demographics, skill sets, responsibilities, recruitment and retention practices, and to make recommendations to promote career commitment.

Study/Project Design:

Survey, descriptive

Setting:

Hospitals employing trauma registrars in the US and Canada.

Sample:

Registrars, program managers/coordinators, NTDB user group, American Trauma Society membership, state trauma programs, and respondents referrals.

Procedures:

An IRB approved, on-line survey was developed and distributed. Questions focused on Registrar demographics, job requirements, skills, responsibilities and recruitment/retention practices. The number who responded to each item is given as the denominator. Respondents rated the utility of a variety of skills (not helpful, desirable and required). Respondents rated the importance of factors that may affect retention. (1 least important to 5 most important) and mean ratings were calculated.

Findings/Results:

502 responded, 263 had registry duties (226 exclusively). Of 502, 88% worked at Trauma Centers. Mean years of experience was 6.5. Education requirements were: High School 28%, College no degree 16%, Associate 36%, Bachelors 17%. Certification requirements included: CSTR 11%, CAISS 5%, CCS 3%. CCA 2%, CPC 2%; 25% were compensated for costs. Required skills included: medical terminology 66%, anatomy 64%, ICD9 Code 32%, database management 65%, Word 63%, Excel 58%, PowerPoint 26%, Access 14%. Of 392, 105 (27%) had multiple registrar job grades; of the 105 (93.3%) reported compensation by grade. Of 391 (35%) had difficulty with retention and 388 (26%) with recruitment. Ratings of reasons for leaving the job were: Salary (mean 3.9), Advancement (3.5), Tedium (3.2), Personal issues (2.7), Social (2.1). Ratings of long-term retention reasons were: Job Satisfaction (mean 4.2), Commitment to Organization (4.0), Salary (3.8), Benefits (3.6), Personal (3.0), Advancement (2.9), and Social (2)

Discussion/Conclusions/Implications:

Few institutions required college or certifications. Most required experience and computer skills. Results indicated that recruitment and retention was not a universal problem. Trauma Center level and workload differences may account for differences in retaining and recruiting. Job satisfaction and organizational commitment were keys to successful retention. For facilities having recruitment and retention difficulties, managers may wish to focus on standardized training, tiered job descriptions with opportunities for advancement, education and salary adjustments.