

graphical representation of key performance indicator (KPI) trends, and the dashboard with color-coded visual indicators are also important features.

**Conclusion** A well designed e-OVR system has a significant positive impact on the effectiveness and efficiency of any healthcare risk management system.

### 57 ASSESSMENT OF THE EFFECTIVENESS OF PAIN MANAGEMENT AMONG TRAUMA PATIENTS IN THE EMERGENCY DEPARTMENT

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**Background** In every emergency department (ED), pain is the most common chief complaint, especially among trauma patients. However, two-thirds of trauma patients are discharged from EDs with moderate to severe pain. Therefore, pain management is an important part of care in trauma patients in the ED. According to a study, 27% of trauma patients were discharged although they still felt pain, and 48% of patients were not reassessed. Previous studies have reported inadequate pain control in the ED, and pain is frequently requested to be eliminated by patients despite their conditions. To our knowledge, our study is the first of a kind that addresses pain management among trauma patients in the ED in the Kingdom of Saudi Arabia. The objectives of the study were to:

- Determine whether trauma patients receive pain assessment and/or reassessment.
- Determine whether trauma patients receive the proper pharmacological and/or non-pharmacological intervention to relieve their pain (according to clinical practice guidelines of King Abdulaziz Medical City [KAMC]).
- Relate triage score to appropriate pain management.
- Measure the differences between male and female responses towards pain management.

**Methods** This retrospective cohort study included all adult trauma patients who attended the ED at King Abdulaziz Medical City in Jeddah from the period June 2016 to July 2018. Sample size was calculated based on the number of trauma patients presenting to the ED and 403 files were reviewed. After excluding any patients younger than 18 years old, intubated patients, and patients with GCS level below 13, the number of remaining patients was 332. Data were collected from the health information system (BestCare). Data were analyzed using SPSS version 24.

**Results** Our results showed that the mean difference between pain scores before and after pain management is 1, which is not clinically significant. The percentages of patients that were not assessed or reassessed were 31% and 29%, respectively. The median time between arrival and initial assessment was approximately 19 minutes. The percentage of patients who were administered the right drug was 36.7%. The triage scores were not aligned with their conditions. There was no statistical difference between males' and females' change in pain score.

**Conclusion** Compliance to pain assessment and reassessment in trauma patients is suboptimal. This reflects on the management of pain in trauma patients. Furthermore, appropriate

pain management in relation to pain scores was also suboptimal. Knowing the negative short-term and long-term effects of poor pain management in this subset of patients raises the need for improvement using pain assessment and management tools. We recommend staff education of the importance of pain management. Additionally, a quality improvement project is recommended to enhance pain management in trauma patients. Further studies should be carried out in the Kingdom in different centers for trauma and non-trauma patients to assess and improve the performance in this important aspect. Relating this to patient satisfaction and long-term consequences is also recommended.

### 58 EFFECT OF IMPLEMENTING AN EARLY WARNING SCORING SYSTEM ON PATIENT OUTCOMES

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**Background** Patient safety is a key priority for hospitals, a public health problem, and a human rights issue. Acute patients usually exhibit warning signs before experiencing critical health problems. These signs are often not recognized, which increases patient risk. Early recognition of deteriorating patients may improve the quality of healthcare and prevent severe complications. This study aimed to implement an early warning scoring system (EWSS) in an acute medical ward at King Abdulaziz Medical City (KAMC), and assess the effects of EWSS on patient outcomes.

**Methods** The improvement project applied a FOCUS-PDSA model, by first identifying the problem and then implementing EWSS as an intervention. Physicians and nurses were educated about the EWSS application. Nurses were trained on how to measure, calculate, and take actions upon scores, and when to call physicians for emergency assistance when a patient score reached an abnormal value based on the EWSS actions. A pocket-sized version of the EWSS tool was distributed to staff as an announcement and motivation. The intervention was carried out in small PDSA cycles and repeated, which enabled potential errors to be tackled, ensured accuracy of nursing documentation, validated the EWSS tool, and refined the implementation process. To assess the intervention, a total of 296 patients were observed for 6 months (November to April) before and after implementing EWSS for changes in three main indicators: mortality rate, intensive care unit (ICU) transfers, and CCRT reviews. To assess perception and satisfaction, a cross-sectional survey was administered to a convenient sample of staff in day and night ward shifts. Data were collected daily during the study period, entered into an Excel file, then imported to SPSS for analysis.

**Results** After implementing EWSS, mortality rate ( $p > 0.05$ ), ICU transfers ( $p < 0.05$ ), and CCRT reviews ( $p > 0.05$ ) were reduced. Staff perception towards EWSS implementation was high; 86% indicated a good understanding of the purpose of the intervention, 71% stated that EWSS helped in recognition of patients before deterioration, and 50% perceived the intervention as successful and recommended its implementation in other areas of the hospital.

**Conclusion** The findings showed that EWSS implementation was promising and well-perceived by staff as an efficient management tool towards patient safety. Yet, there is an urgent

need to automate EWSS before implementing it at a large scale to decrease workload, record duplication, and score calculation errors. More efforts need to be carried out in staff training, motivation, and support as they are key aspects towards success.

### 59 REDUCING IV INFILTRATION AND POTENTIAL HARM IN THE PEDIATRIC EMERGENCY DEPARTMENT – KASCH

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**Background** There was a significant increase in intravenous (IV) infiltration in the month of March 2016 in the Pediatric Emergency Department - KASCH. The Acute Care team noted an increase in IV-related incidence and there were 30 generated safety reporting system (SRS) reports from January to March 2016. This prompted the unit leaders to create a task-force in order to review the causes and the factors leading to incidence and causing patient harm.

**Methods** Using the PDSA (plan-do-study-act) quality model, the quality improvement team collected data generated through the SRS on IV infiltration/extravasation. The reports were analyzed as to the causes and harm of the incident. Using a cause and effect diagram, the team identified the root causes as non-adherence to the insertion and sterility technique, staff competency on IV insertion and monitoring, type of dressing used, lighting, and lack of guidelines to support the practice. In order to draw a reliable conclusion, several PDSA cycles were tested and implemented: (1) data collection and audit tool design; (2) staff education and standardized documentation; (3) formulation of the escalation process and guidelines; and (4) continuous monitoring and auditing of IV infiltration/extravasation and regular reporting to the daily key performance indicator (KPI).

**Results** For the initial throughput of the project, the IV Watchers on the Move Team noted a marked decrease in infiltration in August 2018 as evidenced by the nurses' compliance in IV infiltration prevention strategies - i.e., (1) hourly IV site checks, (2) mandatory use of smart pumps, and (3) timely and accurate documentation of IV assessment.

**Conclusion** The IV Watchers on the Move QI Project was able to design a mechanism to reduce the potential harm caused by infiltration. Part of the intervention was the hourly assessment and early recognition of impending infiltration. Nurses were instructed to be cautious when administering highly concentrated medications. With all of the efforts and initiative shown throughout, the pediatric patients benefited from the successful interventions that finally led to the safe delivery of nursing care.

### 60 EFFECTIVENESS OF PROCEDURE EXPLANATION IN REDUCING ANXIETY FOR PATIENTS UNDERGOING MAGNETIC RESONANCE IMAGING

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**Background** Magnetic resonance imaging (MRI) is potentially considered as the greatest invention in the world. In addition, all the people in the medical field have been surprised by the capability of MRI in the past 25 years. There has been a massive increase in the use of MRI in the clinical field. More than 80 million MRI procedures occur every year around the globe. Patients who are undergoing MRI examinations infrequently experience anxiety as a consequence of the procedure or the environment. Reducing patient anxiety is considered as one of the most common concerns affecting the outcome of the MRI scan. The purpose of this study was to investigate the effectiveness of procedure explanation on controlling anxiety levels in adolescent patients undergoing MRI.

**Methods** The Institutional Review Board (IRB) ethics committee approved this cross-sectional study. Convenient sampling techniques were used to select 37 adolescent patients (19 females and 18 male) who attended the MRI appointment unit at the Medical Imaging Department of King Abdulaziz Medical City, Riyadh, Saudi Arabia. Three tools were used to collect data: the sociodemographic data sheet, patient assessment knowledge sheet, and the State-Trait Anxiety Inventory (STAI) questionnaire. STAI is a self-report test designed to measure patient anxiety level; 40 questions are divided into two subcategories; 20 state (defined as fear, nervousness, discomfort, etc, and how the person feels right now), and 20 traits (defined as stress, worry, discomfort, etc, that the person experiences on a daily basis).

**Results** The state anxiety level showed a statistically significant difference in patients' knowledge between the pre-test and post-test with or without instruction. For the group with instruction, their anxiety level significantly reduced. The trait anxiety level showed no significant difference between pre-test and post-test with or without instruction.

**Conclusion** Because of lack of awareness about the procedural instructions for the patient before undergoing MRI, it may affect the procedure prognosis and outcome. Our suggestion for the future is to increase awareness about MRI and to improve communication skills of MRI staff to educate the patient in a good way to reduce patient anxiety.

### 61 SUCCESSFUL IMPROVEMENT IN POST-EXPOSURE OUTCOMES AMONG HEALTHCARE WORKERS EXPOSED TO VACCINE-PREVENTABLE DISEASES IN A HOSPITAL SETTING

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**Background** Healthcare workers (HCWs) working in hospitals are at higher risk of exposure to patients with different infectious agents, particularly measles, mumps, rubella, and varicella. Identifying the HCWs who are at risk and initiating post-exposure management is critical to reduce the risk of further spread to other patients and HCWs. This is especially important in high-risk hospital areas such as emergency departments. The objective of the current study was to assess the impact of a multi-partner intervention on the outcomes of post-exposure management.