

45

### EVALUATING THE EFFECTIVENESS OF A SIMULATION-BASED PERIPHERALLY INSERTED CENTRAL CATHETER (PICC) SKILLS TRAINING PROGRAM IN THE OUTPATIENT DEPARTMENT

Rumbidzai Anne Gumbie, Bukhari Elham, Genna Relojo, Linda Atiyeh. *Nursing Education, King Abdulaziz Medical City Jeddah*

10.1136/bmjoc-2019-PSF.45

**Background** Following implementation of the Outpatient Intravenous Antibiotic Program (OIVAP) clinic in the outpatient department (OPD), nurses were dealing with more patients receiving long-term intravenous antibiotic therapy via a peripherally inserted central catheter (PICC) line. Only 20% of 150 OPD nurses were competently managing these patients. However, because of staffing issues and increased demand, more nurses were required to cover this clinic. This presented a challenge because most nurses had not performed this skill before. A simulation-based educational workshop was conducted by the Nursing Education Department to fill this gap. Simulation training has a well-known history in military and aviation industries, but is relatively new to nursing practice. The hospitals' Nursing Departmental policy on educational requirements requires nurses to perform annual competencies for skills that are likely to cause significant patient harm if done incorrectly, calling for nurses to keep their knowledge and skills valid. This study aims to evaluate the effectiveness of the simulation-based training program on the knowledge and skills of OPD nurses.

**Methods** 13 workshops were conducted for 109 participants over a period of 3 weeks. A pre-assessment knowledge questionnaire was distributed. The workshop covered theory and practical demonstrations using a central line simulator model, in a simulated clinical environment. A post-assessment knowledge questionnaire was then distributed for comparison.

**Results** Out of those sampled, the pre-assessment results showed that 78% had not performed the procedure of administering intravenous drug therapy via a PICC line at all. The mean knowledge scale was 0 out of 7, which indicated that their knowledge about the procedure was better than their practical experience. Post-assessment results indicated that 67.8% felt confident to perform the procedure in an actual clinical environment.

**Conclusion** Simulation-based educational interventions are an effective way to address skills gaps where large numbers of nurses need to be trained while minimizing the chances of patient harm. More confident nurses ease the burden on staffing levels ensuring more referrals. This gives an opportunity for fewer hospital admissions for procedures that can be safely done in an outpatient environment. Above all, patients are safe when nurses are confident in their care.

46

### PATIENT SATISFACTION WITH THE CARE PROVIDED IN THE EMERGENCY DEPARTMENT AT A CARE CENTER IN SAUDI ARABIA

Amaney Alghamdi, A Aljudaie Atheer, S Alanzil Maryam, A Alghamdi Amaney, M Alanzi Amnah, H Alsughier Futoon, A Alamil Amal, Althibaiti Alaa, Alfarhan Ali. *College of Medicine, National Guard Health Affairs/King Saud bin Abdulaziz University for Health Sciences*

10.1136/bmjoc-2019-PSF.46

**Background** Patient satisfaction is an important issue in the healthcare process and plays a crucial role in measuring the effectiveness of healthcare delivery. It is of absolute importance in quality assessment activities as its comprehensive analysis can highlight noble and problematic aspects of each hospital. This study aimed to assess the emergency department (ED) patient satisfaction in a care center in Saudi Arabia and to determine the factors affecting satisfaction.

**Methods** In this descriptive cross-sectional study, the sample was selected from 375 patients admitted to the ED of KAMC between December 2016 to September 2017. For each patient, a validated questionnaire was filled and collected by non-random convenient sampling in two phases: August/September and December/January.

**Results** In total, 375 patients were entered into the study. The mean score of overall satisfaction was 57.59 (8.69) (range 19–70). The domain that had the highest excellent score was admission (171, 45.8%), while the domain that scored highest in poor satisfaction was nurses' care (141, 37.6%). Overall satisfaction was mostly good (96, 50.8%). Those who had been hospitalized in the last 3 days prior to filling the questionnaire, and those who waited a longer time to see the doctor had significantly lower satisfaction ( $p=0.007$  and  $p<0.001$ , respectively).

**Conclusion** Higher satisfaction levels were seen among patients who were treated in the main ED, admitted during morning shifts, who visited the ED during slow season (August/September), and were seen by the doctor with shorter waiting time. Patients were most satisfied with admission and least satisfied with nurses' care. Patient satisfaction reports can complement other sources of information about quality. Further research is recommended in order to measure specific aspects of medical care and how it has been provided.

47

### ANTICOAGULATION VARIABILITY AS A PREDICTOR OF BLEEDING IN PATIENTS WITH MECHANICAL HEART VALVES

Fadi Obeid, Fadi Obeid, Reem Sirryeh, Samia Refaeis, Iyad Farah, Samir Shnaikat, Azra Mahmud, Ahmed Alsaileek. *Cardiac Sciences, King Abdulaziz Cardiac Center, King Abdulaziz Medical City*

10.1136/bmjoc-2019-PSF.47

**Background** Patients with mechanical heart valves require life-long anticoagulation with warfarin. Variability of anticoagulation is a major concern in such patients. Previously, we found that mechanical heart valve patients spent only 66% of their time within the therapeutic range (TTR). However, there is currently little data relating quality of anticoagulation to bleeding risk in patients with mechanical heart valve prostheses.

**Methods** This was a cross-sectional study of patients attending a Nurse-Led Heart Valve Anticoagulation Clinic. Data analyzed included patient demographics, comorbidities, and concurrent drug therapy to calculate HAS-BLED and ATRIA scores. International normalized ratio (INR) values were used to calculate time spent in the therapeutic range (TTR) by the Rosendaal Method. The relationship between variables was analyzed using linear correlation (Spearman Rho) and logistic regression as deemed appropriate. Data were analyzed using SPSS (SPSS for Windows), with  $p<0.05$  considered significant.

**Results** The study cohort consisted of 260 patients with a mean age of  $54\pm 15$  years. The mean TTR was  $66\pm 16\%$ . 27

(10%) patients had HAS-BLED scores of more than 3 (high risk). Bleeding (cerebral, gastrointestinal, or hemoglobin <100 g/L) occurred in 32 (12.3%) patients; 12 (37.5%) of these patients had a HAS-BLED score of more than 3 ( $p=0.0001$ ). TTR was not different between patients with or without bleeding (64.1+19.4% versus 66.3+16.1%). On the other hand, mean HAS-BLED and ATRIA scores were significantly higher in patients who had bleeding. Using multivariate analysis, ATRIA score followed by HAS- BLED score was the best predictor of bleeding. Age, sex, and TTR as a measure of INR variability did not show a significant difference between the two groups.

**Conclusion** Similar to previous reports of patients with atrial fibrillation, ATRIA and HAS-BLED scores were the best predictors of bleeding in our cohort of patients with mechanical heart valves, with no independent contribution of TTR to estimation of bleeding risk.

#### 48 USING SIMULATION TO ASSESS COMPETENCY IN NEW NURSES

Mohamed Noor Osman, Sami Alyateem. *Nursing, Prince Mohammed Bin Abdulaziz Hospital Madinah*

10.1136/bmjoc-2019-PSF.48

**Background** Measuring competencies in nursing is critical to ensure safe and effective care of patients. Usually, new nurses struggle to cope with the demands of new roles and face difficulties in completing the required competencies on time. Being a clinical resource nurse based in the clinical areas and responsible for new nurses, I have observed that there is a gap in this area which may impact on patient safety. I work as a clinical resource nurse in Prince Mohammed Bin Abdulaziz Hospital in Madinah (PMBAH), Kingdom of Saudi Arabia. The focus of this paper is to assess the knowledge and confidence of newly hired nurses in PMBAH. Currently, new nurses are given 5 days of orientation in class and are then sent to clinical areas to start working under a senior nurse. The aim of this study was to assess the confidence and knowledge of new nurses hired by PMBAH.

**Methods** Simulation methodology was used to train new nurses in PMBAH. A 2-day training schedule was arranged with 2 hours for each competency session, with eight sessions in total. Each session included a short briefing about the scenario and introductory video followed by a demonstration by the simulation facilitator. The new nurse was then allowed to run the scenario with no interruption, followed by individual briefing directly to consolidate and transform the nurse's experience. Nurses were allowed to express their feelings in their own words. Pre and post self-assessment of participants' knowledge and confidence were later assessed.

**Results** There was a big difference in the pre- and post-assessment results; the majority of the nurses have shown increased knowledge and confidence after going through simulation sessions.

**Conclusion** We have identified that simulation positively impacts nurses' learning experiences by replicating the bedside setting in a mistake-free environment. Therefore, simulation sessions for new nurses are very helpful to raise knowledge, confidence, and the ultimate safe delivery of patient care. We can claim that simulation is an up-to-date and innovative learning strategy, especially when addressing direct patient care

aspects including nursing skills and procedures. With the current increase in medicolegal cases, we can conclude that simulation is both a safer and economically viable way of training nurses. Increased confidence and knowledge using simulation during orientation has been shown to reduce stress levels in clinical areas.

#### 49 PRESCRIBER BEHAVIORS THAT COULD BE TARGETED FOR CHANGE: AN ANALYSIS OF BEHAVIORS DEMONSTRATED DURING THE PRESCRIBING PROCESS

Mohammed Aseeri, Douha F Bannan, Aeshah AlAzmi, Mary P Tully. *Pharmacy, King Abdulaziz Medical City*

10.1136/bmjoc-2019-PSF.49

**Background** The prescribing process for children with cancer is complex, and errors can occur at any step. As a result, many interventions have been used to reduce errors. However, few of them have been designed based on an understanding of the prescriber behavior that can lead to errors. In order to design effective behavior change interventions, it is first important to understand the prescribing process and identify prescriber behaviors that could be targeted for change.

**Methods** This study used two sequential phases. First, the prescribing process was observed and then described using the hierarchical task analysis (HTA) method. Second, prescriber tasks were analyzed using the behavior change wheel (BCW) approach to identify promising behaviors for change. These identified behaviors were prioritized based on information collected from focus groups with prescribers and chart review of errors made in the ward. The hospital's Institutional Review Board approval has been granted.

**Results** The HTA results showed that the prescribing process was complex and involved multiple tasks performed in varying orders. Applying the BCW identified 32 candidate behaviors for potentially reducing prescribing errors. However, after prioritizing these behaviors, only two emerged as promising candidate behaviors for intervention: writing drug indications at the time of prescription and using a predefined order sentence when ordering medications.

**Conclusion** Applying the HTA and BCW methods was helpful in identifying potential behaviors for change. Having identified promising behaviors, future work could explore what needs to change with respect to individuals and their work environments to achieve the desired change in these identified behaviors.

#### 50 SUCCESSFUL IMPROVEMENT IN THE QUALITY OF CLEANING AND DISINFECTION AT A SPECIALIZED TERTIARY CARE HOSPITAL IN RIYADH, SAUDI ARABIA

Kassem Abou Yassine, Majid Alshamrani, Ayham Al Badawi, Nada Alrasheed, Mustafa Alhawtan, Basma Alaidan, Yahya Al Bakheet, Kholoud Alameer, Angela Caswell, Majid Malki, Aiman El-Saed. *Infection Prevention and Control King Abdulaziz Medical City*

10.1136/bmjoc-2019-PSF.50

**Background** Environmental cleaning is critical for reducing the burden of healthcare-associated infections and multidrug-resistant organisms. The objective of the current study was to improve the quality of cleaning and disinfection done by housekeepers.