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Implementation of Emergency Severity Index Training to Improve Accuracy of Triage Levels

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Executive Summary

Introduction of Problem

The Emergency Severity Index (ESI) is a form of triage used in the emergency department (ED) to categorize patients by their acuity. The use of ESI allows staff to identify patients who need to be seen immediately and determine those that can safely wait. Using the ESI properly can help shorten the length of stay times, door to provider times and reduce the number of patients that leave without being seen.

Unfortunately, the lack of education provided to nurses leads to minimizing the precision of their triaging skills, which will affect the accuracy of triage levels assigned to patients. If nurses continue to receive little to no education regarding ESI, the ED may not have a consistent workflow that is essential for patients to receive the best outcome possible. In response to this issue, this project aimed to develop an online learning module that will increase the nurses' knowledge on triage, which, in turn, should create accurate triage levels. This project was two-fold in purpose, as collected data was used to determine if the addition of an advanced practice nurse (APN) would be of benefit to the ED.

Literature Review

The benefit of proper training and understanding of the ESI triage system is to rapidly identify patients that need immediate attention. Gilboy and colleagues (2012) suggest that an internal two to four-hour training should be provided along with yearly recurring training to all ED nurses, physicians, advanced practice nurses, physician's assistants, and nursing assistants for successful implementation. Electronic learning is as effective as face-to face education with regards to increasing ED nurses' knowledge on ESI (Yazdannik, Dsatjerdi, & Mohamadirizi, 2018).

The over and under-triaging of patients has been found to be a limitation to the ESI system. Missing a high-risk situation can place the risk of a critical patient in the waiting room and delay care, which can lead to a poor outcome (Gilboy, Tanabe, Travers, & Rosenau, 2012). Nearly one in five patients was under or over-triaged by ESI on ED arrival (Hinson et al., 2018). Researchers have concluded that increased education on the ESI is indicated to prevent the under and over-triage of patients in the ED (Hinson et al., 2018).

With accurate triage levels, there may be an indication for the addition of an APN in the ED. Many triage policies support that ESI Level-4 and Level-5 and even Level-3 patients may be seen by a nurse practitioner in a fast track clinic or minor trauma area in the ED (Gilboy, Tanabe, Travers, & Rosenau, 2012). The use of APNs in the ED is beneficial because they are less costly than physicians, provide care in collaboration with a physician, and are widely accepted by patients (Hayden, Burlingame, Thompson, & Sabol, 2014). The implementation of an APN in the ED has shown promise in reducing wait times, increasing patient satisfaction and decreasing the rate of patients that leave without being seen (Hayden et al., 2014).

Project Methods

The goal was to increase knowledge of the ESI system to increase accuracy of triage levels in the emergency department. A convenience sample of ED nurses at a midwestern community hospital participated in this quality improvement project. The project method consisted of a pretest, a post-test and an online educational module created by the DNP students, in coordination with the ED director. These tests were identical and were comprised of 25 questions found in the ESI training manual. These tests were sent to the nurses in the form of an online quiz. The pretest was given to participants to determine understanding of the triage system and to evaluate baseline knowledge of the ESI. The educational module was sent to ED

nurses through their work email. The information used to create the module was compiled from the ESI manual, which included triage education, case scenarios and sample questions. The posttest was administered in the same manner as the pretest. Data was collected from both tests to determine if learning took place after the educational module. A chart review was conducted two weeks prior to the educational module. Improvement in accuracy of triage practice was evaluated by conducting a second chart review one month after the implementation of the educational module.

This project was deemed exempt from the Institutional Review Board at Southern Illinois University Edwardsville on April 30, 2018 and approved by the department head of the emergency department, and the legal team at the facility. Participation was voluntary.

Evaluation

Prior to the educational module, 133 charts were reviewed from all patients that presented to the ER from May 1-7, 2018. The chart review documented the time of arrival, chief complaint, length of stay, ESI level assigned to patient by triage nurse and the correct ESI level. This chart review indicated 67.67% (N=90) accuracy of triage by ED nurses. Over triage occurred in 16.54% (N=22) of patients and under triage occurred in 15.79% (N=21) of patients.

The pretest yielded 14 results, average of 14.07/25 points, a median of 14/25 points and a range of 9-21 points. The educational material created in PowerPoint, along with a link to the posttest was sent to the same 19 ED nurses through work email on August 20, 2018 and was completed on September 10, 2018. A total of nine participants completed the posttest. The posttest resulted in an average of 17.44/25 points, a median of 19/25 points and a range of 12-22 points.

A post-implementation chart review of 161 charts was done on October 10, 2018 using the same metrics. The post-project chart review indicated an 81.99% (N=132) accuracy of triage levels assigned by nurses. Nurses over triaged patients in 10.56% (N=17) of the cases and under triaged patients in 7.45% (N=17) of the cases.

The second aim of the project was to review the patient load of the ED to explore if an APN would be of value to this facility. However, an APN was added to the ED November 1st, without association to this project. The first week of May indicated that 44.36% (N=59) of the patients seen in the ED were Level 4 or 5. The first week of November showed that 40.99% (N=66) of the patient's presenting to the ED were Level 4 or 5. This data was a good indication that an APN would be of benefit to this ED, as they can examine Level 4 and 5 patients.

Impact on Practice

This quality improvement project impacted the ED in several ways. Qualitatively, nurses displayed satisfaction and further interest with this project as indicated by their comments throughout their workday. In addition, this project provided a foundation for future policies to be created, regarding nurses assigning appropriate acuity levels to the APN. This project can be expanded to nursing supervisors, physicians, paramedics and other nurses throughout the hospital. Moving forward, the project may be mandated to nurses' educational sessions that are required to be completed annually. This would ensure that all staff participate in the educational module. Lack of participation was one limitation to this project. In addition, the pretest and the posttest were the same, which caused a retest threat to validity of the project since the participants had already seen the questions when taking the posttest.

Conclusion

This quality improvement project demonstrated an increase in knowledge of the ESI system. Nurses' scores improved from the pretest to posttest, after reviewing an educational module on the ESI system. It was evident that nurses applied this knowledge to their practice as the chart review indicated an improvement. As nurses have knowledge on the ESI system, the accuracy of triage levels can continue, ensuring prompt and efficient emergency care. The design of the project is easily replicated in other emergency department settings.

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