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Spring 5-30-2022

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Recommended Citation

Tuetken, Megan; Hamlin, Sierra; and Spaulding, Sydney, "Implementation of a Tele-Triage Protocol in an Emergency Department Setting" (2022). *Doctor of Nursing Practice Projects*. 187.

<https://spark.siu.edu/dnpprojects/187>

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Implementation of a Tele-Triage Protocol in an Emergency Department

Introduction of the Problem

Nationwide, the volume of emergency department (ED) visits has steadily increased over the last several decades. In the United States alone, ED visits rose by 14.8% from 2006 to 2014 (Joshi et al., 2019). This steady increase in volume frequently causes ED crowding and considerable delays in patient evaluation and treatment, which is associated with poor patient outcomes (Rademacher et al., 2019). In an effort to decrease door-to-provider (DTP) wait times, one level 1 trauma center ED in central Illinois initiated a teletriage process utilizing on-call nurse practitioners and physician assistants. Prior to this DNP project, no guidelines existed regarding the activation and usage of teletriage medical screening exams at this ED for patients in the waiting room, which led to inadequate and inefficient use of this process. The intention of teletriage was to improve patient outcomes by decreasing DTP wait times. Developing a protocol for teletriage could ensure consistency and efficiency of the ED team. According to Jarvis (2016), decreased DTP wait times result in increased positive patient outcomes and patient satisfaction. This DNP project developed a protocol for appropriate use of teletriage as well as educate the ED staff on use of the protocol.

Literature Review

According to the Health Resources and Services Administration (HRSA), telehealth for ED best practices include implementing the process at triage, promoting collaboration between providers transferring care through the teletriage process, and understanding that technical and medical staff are necessary for success of the program (2021). Using teletriage in an ED setting improves patient outcomes. The protocol must begin with patients who are suitable for a telehealth visit and identifying the appropriate staff person to initiate the protocol (Ko et al.,

2020). In one New York City hospital, patients who are deemed an Emergency Severity Index (ESI) level of 4 or 5 by a “greeter nurse” are viewed as appropriate for a telehealth visit. If the patient agrees to the visit, the appropriate staff person directs the patient to a private area where consent is obtained and the visit is performed (McHugh et al., 2018).

One measurement of the success of a telehealth protocol is decreasing DTP time. One retrospective study conducted at an urban hospital followed 13,912 ED patients over a 1.5 year time period and found an average DTP time of 32 minutes using a telehealth intake provider, compared to an average DTP time of 44 minutes when an in-person provider was used (Izzo et al., 2018). Moving patients, especially those of a non-critical nature, through the process quicker, utilizing telehealth providers, allows on-site physicians, nurse practitioners and physician’s assistants to be more readily available for critical patients, thus improving patient safety (Rademacher et al., 2019). Not only is over-crowding of EDs linked to decreased quality of care, negative patient experiences, and exceedingly long DTP times, it also leads to long wait times resulting in patients who leave without being seen (LWBS), which is a top concern (Joshi et al., 2019). A study by Rademacher et al. (2019) evaluated telescreening of patients versus previous in-person screening and LWBS patient numbers decreased from 25.1% to 4.5%. Reducing patients who LWBS can improve health for the general public, increase confidence in the healthcare providers, and increase satisfaction scores.

Project Methods

The goal of this DNP project was to develop a protocol for the utilization of teletriage in an Emergency Department in a level 1 trauma center in central Illinois in order to better utilize the already existing teletriage system and to improve patient outcomes. In keeping with the lean methodology framework, the secondary goal was also to ensure that the teletriage project did not

increase the workload of the staff in the ED. The initial phase of this process began in May 2021 with a stakeholder and team member meeting to expedite the process. The team included an Envision company representative who was hired by the facility to aid with teletriage process implementation, the medical director of the ED, and the lead ED nurse practitioner. The team researched and developed the protocol, decided when to implement the protocol and what patients were appropriate for its use. The project was submitted to the Institutional Review Board at Southern Illinois University Edwardsville and was approved as a Quality Improvement Project.

The next phase consisted of educating the staff of the new teletriage process and protocol as well as the use of the new teletriage technology. Nurse technicians, registered nurses, and mid-level providers in the ED were included in this education, which was conducted in May 2021 by attending staff huddles, on-site training, and posting the protocol throughout the ED. During this time, data was also gathered from the ED regarding DTP wait times, patient length of stay, and number of patients LWBS in order to have a baseline comparison for later in the project. This data was obtained through deidentified automatically generated electronic medical record queries. Implementation began in June 2021. A 4-week trial of the new teletriage system occurred. The trial took place on Mondays and Tuesdays from 1130-2130 although the staff was unable to implement the protocol on three of the pre-established trial dates due to staffing issues. Per the protocol, teletriage was activated when more than one patient was in the waiting room longer than 10 minutes with zero available ER rooms or when there was a patient surge, meaning volume or acuity level increased relative to rooms or providers available. Criteria set forth by the protocol for teletriage patient eligibility included an emergency severity index (ESI) level 4 or 5 patient, ESI level 3 patients who required labs or radiology, or a behavioral health patient willing

to be treated in the ED. Following the trial period, data was collected on DTP wait times, patient length of stay and number of patients who LWBS and compared to similar time frames in the ED prior to the utilization of the protocol. ED staff was then anonymously surveyed regarding their views of the sustainability of the current teletriage protocol and were given the opportunity to make suggestions for the process. Data was then collected in order to evaluate the success of the protocol based on the DTP wait times, patient length of stay, and number of patients LWBS.

The project had several limitations. Prior to the implementation of the project, the ED was facing a critical nursing and nurse tech shortage. This shortage affected not only the timing of project implementation but also team members' perceptions towards the project in a negative view. Another limitation that was encountered during the project implementation was a shortage of providers willing to participate. There were three occasions where the protocol was not implemented on a planned day due to no medical provider available or willing to be on-call. Strengths of the project included the adaptability of the protocol to fit the needs of the department and the potential further development of the protocol to assist in decreasing patient to provider and length of stay times long term.

Evaluation

Data was analyzed using descriptive data, percentages, and average differences. Pre-implementation data was collected and averaged from a 5-month period between January 2020 and May 2020. Data collected from June and July 2021, on days the protocol was implemented, was averaged. The average DTP time decreased from 20 minutes to 17.37 minutes (13.15%). The average percentage of patients who LWBS decreased from 3% to 2.96%. The overall length of stay decreased 17.44% from 178 minutes to 146.95 minutes. Overall, the implementation of the protocol was successful. ED staff were surveyed anonymously post implementation for

feedback. A Likert scale was used for staff to rank their opinion regarding if the protocol increased their workload, improved efficiency, should be continued, and if they would have found it helpful if they were a patient. Surveys included free space for opinions or recommendations. Overall staff did not feel their workload was increased and felt the process improved department efficiency. Surveys were split regarding if the process should be continued. Major themes included recommendations to change the location of the teletriage process (from the same room as the triage nurse to a separate room), as well as having additional staff to help run the protocol smoother. Overall, they felt as though the process would be beneficial when appropriate staffing was available.

The project had several limitations. In the United States there is currently a healthcare staffing shortage due to the COVID-19 pandemic. A shortage in nurse practitioners, registered nurses, as well as nursing technicians contributed to the project limitations. On three separate occasions, the teletriage protocol was unable to be activated due to no on-call nurse practitioner available. Also due to staffing shortages, there were occasions when the registered nurse was not able to “activate” the on-call nurse practitioner for the protocol. Initially due to the lack of additional nurse technicians available, the protocol location was modified in order to use the current nurse technicians to collect patient vitals as well as assist with the use of the teletriage technology.

Impact on Practice

The implementation of the teletriage program resulted in a positive outcome. Patients were able to be assessed by a medical provider faster, fewer patients LWBS by a medical provider, and an overall decrease in length of stay for patients discharged was reported. This can improve patient outcomes and patient satisfaction. The long-term impact of the DNP project is

predicted to continue according to data projections. The more teletriage protocol is utilized, the faster patients are evaluated by a medical provider. However, adequate staffing with a nurse and nurse technician to support teletriage are needed for successful teletriage implementation. The eventual goal is to have the teletriage protocol fully staffed between the hours of 9am and 11pm 7 days of the week. Expansion of this project could include implementing the teletriage protocol to other emergency department facilities and growing the protocol to give the teletriage providers the ability to not only assess patients virtually but also discharge them when appropriate. This would further decrease the overall length of stay for patients being discharged. However, until staffing needs are met, these goals are not be feasible.

Conclusions

This DNP project resulted in an overall successful implementation of the teletriage protocol. A decrease in DTP time for patients, decrease in overall length of stay and a decrease in the percentage of patients who LWBS was found. Several limitations were faced during the implementation of the protocol including difficulties with staffing shortages which resulted in inability to activate the protocol on several occasions. Other recommendations from staff included moving the teletriage process to a private room with a nurse technician who was solely responsible for assisting with the teletriage program. Overall, the project was successful and further investigation is recommended to assess the potential for the project results to be repeated at other ED as well as expanded to include the ability for providers to discharge patients through the teletriage protocol.

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