According to the CDC, asthma in pediatric patients is on the rise (CDC, 2019). Children with asthma entering the Emergency Department (ED) for asthma exacerbations are not receiving asthma treatment in an adequate amount of time causing the asthma exacerbation to be much worse than necessary (O'Connor, Seville, Hartert, & Arnold, 2014; Bekmezian, 2013). General emergency departments may not be knowledgeable in treating pediatric asthma patients (Loggie & Patilnick, 2013). Even though many studies have shown that clinical pathways for asthma management improve adherence to evidence-based management, improve patient outcomes, reduce cost in EDs, and reduce hospitalization, there are still general hospital EDs without systematic guidelines to pediatrics patients (Loughran & Olson-Cline, 2010). General emergency departments may improve time to first treatment by adopting a standardized clinical guideline for dealing with pediatric asthma patients. Pediatric assessment triangle (PAT) is a simple, rapid, and accurate assessment tool supported by the American College of Emergency Physicians and the American Academy of Pediatrics. Currently, it is utilized in Pediatric advanced life support courses (PALS) (Hornback & Gauseme-Hill, 2010). The PAT will be used as a primary triage tool for pediatric patients with asthma exacerbations, to measure the time from triage to first pharmacological treatment. This pilot study aims to decrease time from triage to first treatment, identify patients who are emergent vs. non-emergent, improve accuracy and consistency in/it pediatric triage for patients with asthma, prevent complications of asthma exacerbations and improve overall successful outcomes. The study also aims to improve negative outcomes with pediatric asthma patients such as patient inhalation, prolonged hospital stays, and increased cost for hospitals.

Research Question

1) In pediatric asthma patients with asthma exacerbation, will the use of the Pediatric Assessment Triangle (PAT) tool decrease time to first pharmacological treatment compared to no use of the PAT tool during their visit to a non-pediatric ED?
2) Hypothesis: The PAT tool will decrease the time from triage to first pharmacological treatment in pediatric asthma patients with acute exacerbation of asthma.

Methods

Design: Six-month prospective observational PAT Study
Location: Non-Pediatric Hospital Emergency Department
Target Population: Pediatric patients with asthma exacerbation, newly or previously diagnosed

Independent Variable (IV): 1. Usual Care + PAT tool
2. Usual Care: This includes the nurses prior training, education, experience, and intuition when triaging patients within the ED.
3. Usual Care: This includes the nurses prior training, education, experience, and intuition when triaging patients within the ED.

Dependent Variable (DV): 1. PAT tool: Triage tool used to assess pediatric asthma status
2. Usual Care: This includes the nurses prior training, education, experience, and intuition when triaging patients within the ED.

Pilot Study

Prior to Study

1. IRB Approval:
   - Informed Consent Waiver for PAT Protocol
   - Data to be collected: age, diagnosis during visit, past medical history, whether PAT tool was used or not, the findings from the PAT tool, time of triage, time of first pharmacological treatment.
   - Education and training:
     a. Nurses will be formally trained in PAT tool use with a multimedia lecture in 4 - 1 hour sessions; to be completed during team meetings (practicing simulations and lecture)

Study Design: Each IV will be implemented on a weekly basis alternating weeks for a total of 12 weeks of PAT and 12 weeks of Usual Care.

Week 1: Usual Care + PAT tool
   - Usual Care only
   - Weeks will start on Sundays at a shift break (depending on the hospital) researchers will be on site at new week start to ensure use of an/or no use of PAT tool to be implemented
   - Charge nurse will remind the nurses to use the PAT or not use the PAT.
   - Charge nurse will place a poster that signifies to use PAT, within the triage area during week of PAT tool use

Week 2: Usual Care alone
   - Triage nurses will be responsible for documenting the use of the tool, findings from the use of the tool, and time the triage occurred.
   - Hospitals with computer charting will add a checkbox in charting system for use of tool
   - Hospitals with paper charting will use a triage form with PAT usage question

Data Collection & Outcomes/Measures

Randomly selected data from the patient charting system will be reviewed for the following outcomes:

Outcomes and Measures

1. The mean between the time of triage to first nebulization treatment using the PAT tool compared to the time of triage to first treatment, without using the PAT tool.
2. The data will be collected in minutes and seconds.
3. The data will be: age, diagnosis during visit, past medical history, whether PAT tool was used.
4. Analysis of missing data will be conducted based on how critical the missing data is to the study.

Data Collection

1. All at the end of the six month study period, we will review the medical records of pediatric asthma patients that were both triaged with the use of the PAT tool and those triaged without the use of the PAT tool.
2. We will collect data on those patients that are inclusive to the study.
3. The data will be age, diagnosis during visit, past medical history, whether PAT tool was used or not, the findings from the PAT tool, time of triage, time of first treatment.
4. Our data will be analyzed just look at the time from triage to time to first treatment.
5. The data will be collected in minutes and seconds.

Summary

The PAT tool will be implemented to one emergency department to assess the use of the tools effectiveness on time to triage to first pharmacological treatment.

Decreasing the time of triage to first treatment will improve overall patient outcome by providing more timely care to patients suffering from exacerbation.

The PAT tool will be implemented to other emergency departments and used as a universal measurement to assess pediatric asthmatic exacerbation once proven effective.

Implications for nursing practice—what will these interventions mean for nursing practice?
References


