FACTORS INFLUENCING PATIENT ASSIGNMENT TO LEVEL 2 AND LEVEL 3 WITHIN THE 5-LEVEL ESI TRIAGE SYSTEM

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Introduction: Prospectively assessing factors that influence triage nurse assignment of patients to the higher risk level 2 compared to the lower risk level 3 has not previously been explored within the 5-level Emergency Severity Index (ESI) triage system. Considering the large amount of information available about the patient, less experienced triage nurses often struggle in deciding what patient information is truly relevant when assessing if a high-risk situation exists. The primary aim of this study was to identify specific factors used by triage nurses to differentiate level 2 patients from level 3 patients.

Methods: A convenience sample of triage nurses was recruited from 2 ED sites. If at the completion of the nurse-patient triage interaction the nurse assigned the patient to either level 2 or level 3, the triage nurse then completed a questionnaire related to factors that influenced patient assignment.

Results: Overall, 18 triage nurses participated in the study with a total of 334 nurse-patient triage interactions collected. Patient age, vital signs, and need for a timely intervention were found to be significant factors that influenced patient assignment to level 2 while expected number of resources influenced patient assignment to level 3.

Discussion: Utilizing experienced triage nurses on average, this study identified specific, objective factors that, combined with factors already delineated in the ESI Version 4 Implementation Manual, have useful implications for less experienced triage nurses by providing a more comprehensive and relevant foundation for data gathering and decision making.

Key words: ED nursing; Triage; Emergency Severity Index; Clinical decision making

The current emphasis on evidence-based practice for clinical decision making is reflective of present day thinking that health care providers are expected to combine individual clinical expertise acquired through experience practice (the intuitive approach) with the best available external evidence derived from systematic research (the analytical approach).[1] One type of clinical decision making is the process of triage in the emergency department. Triage involves an initial sorting of patients who present to the emergency department, ensuring that patients with life-threatening conditions are quickly identified and treatment is started.[2] The primary goal of triage is to decrease morbidity and mortality for all ED patients. A gap in knowledge exists regarding the real time reasoning process of clinical decision making that occurs during ED triage.[3,4] Improved understanding of this decision-making process could provide transparency regarding the factors that health care providers use to identify patients at a higher risk of an adverse outcome and thus need intervention sooner rather than later. The assignment of a patient to an inappropriate acuity level during triage has the potential to increase morbidity and have a significant impact on the patient's health care outcomes. Although it may be difficult in today's crowded ED settings, it remains essential that patients be assessed appropriately and assigned a triage acuity that accurately reflects their severity of illness so they receive safe and timely care.

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The major goal of the clinical decision-making process should be accuracy; however, clinical decision making involves probabilistic judgments that are at risk for being inaccurate.[5,6] Clinical decision making specific to the ED triage setting includes the unique characteristics of time constraints and lack of previous exposure to the patients presenting for treatment.[7] These characteristics create situational complexity and uncertainty in the decision-making process. Additional factors influencing the decision-making process include patient characteristics, such as chief complaint, age, medical history, visual cues, vital signs and communication barriers; nurse characteristics, including education, training and experience; and the method of information collection by the nurse.[8] The American College of Emergency Physicians and ENA state that triage should be performed by experienced registered nurses with proven clinical judgment and decision-making skills.[9] It has been suggested that clinical decision making in the triage process combines multiple methods of reasoning: intuition, heuristics, and analytical. Expert nurses tend to view algorithms and protocols as decreasing their options and suppressing their ability to accurately assess patients.[10]

In the past 10 years, instrument-driven triage systems have been developed that apply an analytical approach to the triage process. The Emergency Severity Index (ESI) 5-level triage system is one example of an instrument-driven triage system.[11-13] The ESI provides a standardized algorithm for the triage process using a systematic approach and utilizes both intuitive and analytical approaches to clinical decision making. When using the ESI the triage nurse stratifies the acuity of patients into 5 levels, with patients assigned at a level 1 acuity requiring immediate intervention to preserve life or limb. Level 2 focuses on identifying high-risk patients who need time-sensitive treatment or meet predetermined criteria. Assignment to level 2 requires the highest level of clinical decision making by the nurse. Key components of ESI level 2 criteria are obtained by the triage nurse with use of the following questions: (1) Is this a high-risk situation? (2) Is the patient experiencing new onset confusion, lethargy, or disorientation? and (3) Is the patient experiencing severe pain or distress? Patients who do not fit the level 2 criteria are assigned to level 3, 4, or 5. Assignment to the lower acuity levels is based on estimated resource utilization; that is, level 3 requires 2 or more resources, level 4 requires one resource, and level 5 requires no resources.[11,12]

Previous studies testing the 5-level ESI triage system have examined characteristics that differentiate patients assigned to level 1 versus level 2 and patients assigned to levels 3, 4, and 5. Tanabe and colleagues[14] addressed the need to more clearly define the distinction between ESI level 1 and level 2 criteria by looking at predictors of need by triage patients for immediate, life-saving interventions. Seventeen predictors were identified, with the strongest predictor being the triage nurse's clinical judgment of the need for immediate intervention (odds ratio [OR] 10.2; confidence interval 3.3 to 31.8; $P < .01$). For patients assigned to levels 3, 4, and 5, ESI studies have focused on resource utilization.[11-13]

Information guiding the decision of the triage nurse to assign a patient to the high-risk ESI level 2 includes pre-established criteria by consensus opinion of the ESI Triage Group and the individual nurse's clinical decision making. Currently little information is available to guide the triage nurse in the determination of acuity level 2. To our knowledge, assessment of factors that influence the triage nurse's assignment of patients to the high-risk level 2 and the lower risk level 3 within the 5-level ESI triage system has not previously been explored. Considering the large amount of information available relative to each individual patient, less experienced triage nurses often struggle to decide what patient information is truly relevant when assessing whether a high-risk situation exists.[15] The stated ESI criteria for level 2 are not specific enough to guide less experienced nurses, and determination of acuity level is open to individual interpretation by the triage nurse. To increase the validity of nurses' assignments of patients to levels 2 and 3, the level 2 criteria need to be more explicit and be drawn from actual nurse clinical decision-making examples of how nurses consider patient characteristics when assigning patients to these levels.

The primary aim of this study was to identify factors used by triage nurses in their assignment of patients to triage level 2 or level 3 in the 5-level ESI triage system. A secondary aim was to validate the ESI criteria presently used by triage nurses to assign patients to levels 2 and 3.

Methods

A prospective correlational design was used for this study. Data collection was conducted between February 2008 and May 2008 in 2 emergency departments, one in a large county hospital with a trauma center and the other in a large academic institution. The study was approved by each institution's Committee on Human Research.

SAMPLE

A convenience sample of 18 triage nurses was recruited from the 2 emergency departments. Only ED triage nurses who had successfully completed the ESI training program in the past 12 months and were certified by the institution