REVIEW ARTICLE

The role of the nurse in reverse triage: A review of the literature

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Abstract

Aim: Disasters often result in an unanticipated ‘surge’ of patients to hospitals requiring care. Hospitals are expected and required to have emergency operation management plans to expand surge capabilities to care for incoming disaster victims while continuing to care for current patients. Reverse triage for early discharge or transfer uses assessment of the clinical status of current inpatients and decision-making regarding discharge, transfer, and further definitive care to open hospital resources for a sudden surge of patients. This type of decision-making lies well within the scope of nursing practice; however, many nurses may be unaware of this patient management strategy or their role using it as a strategy to enhance hospital surge capacity.

Methods: A systematic literature review was conducted using a modified Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach. Inclusion and exclusion criteria were identified to query three databases (CINAHL, OVID, and PubMed) for literature addressing the role of the nurse in reverse triage of hospitalized inpatients in readiness for a disaster event patient surge.

Results: Twenty-six records were identified for full review. Of the 26 records, seven provided some reference but little information regarding the role of the nurse in reverse triage.

Conclusion: This review provided limited information regarding the role of the nurse in reverse triage. Nurses’ roles will be extended during disaster events that require a hospital to utilize surge capabilities and are integral to the process of operationalizing reverse triage. There is a lack of evidence to aide understanding of the role of the nurse in reverse triage.

Key words: disaster, hospital surge capacity, mass casualty, nurses/nursing, reverse triage

INTRODUCTION

A disaster is defined as “an event that creates a significant, short-term spike in the demand for emergency care services requiring extraordinary measures” (Institute of Medicine, 2007, p. 261). During disasters, hospitals are required to rapidly expand operations to provide safe care for a sudden influx of patients, known as patient surge or medical surge (Office of the Assistant Secretary for Preparedness and Response Hospital Preparedness Program [ASPR], 2012, Bonnett et al., 2007). The Joint Commission identified that hospitals should evaluate their capabilities to stand alone for up to 96 hours before outside assistance can be expected during a crisis event (Joint Commission [JCHO], 2012). Surge capacity is a hospital’s ability to expand resource operations for incoming patients while continuing to care for current inpatients. This circumstance often mandates the reallocation of resources including physical space, beds, staff, and medical and pharmaceutical supplies.

Early patient discharge is one option available to increase the number of available beds and enhance hospital surge capacity. It is a consistent strategy frequently listed within hospital emergency operation plans (Kaji & Lewis, 2006). Yet, recognizing that routine
daily discharge of hospitalized patients “is a complex process that is fraught with challenges” (Alper, O’Malley, & Greenwald, 2016, para. 1), rapid discharge of patients during, or in anticipation of, a disaster event brings significant risk of negative patient outcomes. Patients are generally not discharged from hospitals if a negative outcome or ‘consequential medical event’ is potentially foreseeable. However, a zero-risk policy, although desirable, is not feasible (Kelen et al., 2006).

“Reverse triage” is an early patient discharge process that allows the identification of hospitalized patients deemed safe for rapid discharge with continued out-of-hospital management for a period of time until the system recovers (Kelen, Sauer, Clattenburg, Lewis-Newby, & Fackler, 2015). This systematic decision-making process for early patient discharge or transfer disposition seeks to protect and provide safe quality care for current inpatients while increasing available inpatient resources for hospital surge capacity (Kelen et al., 2006; 2015). Reverse triage uses a risk stratification classification system to assess the clinical status of current inpatients and allow for decision-making regarding discharge, transfer, and further definitive care to open hospital resources for a sudden surge of patients. It seeks to identify critical interventions that, if eliminated, would not increase patient risk for negative outcomes if discharged or transferred (Kelen et al., 2009).

In military terms, reverse triage refers to treating those who are not seriously injured first to allow them to return to the battlefield sooner (Wiseman, Ellenbogen, & Shaffrey, 2002). Reverse triage expands the notion to the civilian medical model and includes consideration of early discharge of the least sick. With present constraints on hospital capacity, making the most of available resources, rather than hoping that plans to augment them can be implemented, becomes an important consideration. While the process of triage or ‘sorting’ is steeped in ethical decision-making, reverse triage for early discharge during a disaster is consistent with due care, “taking sufficient and appropriate care to avoid harm” (Beauchamp & Childress, 2001, p. 118), with intent to “do the greatest good, for the greatest number” (Beauchamp & Childress, 2001, p. 270) with the least amount of harm.

Nurses as members of the healthcare team can play an important role in enhancing hospital surge capacity by participating in reverse triage. Recognizing that nurses have hourly contact with inpatients, they would have critical data that could contribute to reverse triage early discharge decisions. Nurses are well versed in the operationalization of bedside assessments such as acuity, functional abilities, or resource needs of inpatients contributing to early discharge decision-making during disasters.

This literature review sought to identify the existence of any published research that explored the role for nurses using reverse triage. This research is critically important to our understanding of reverse triage as a disaster nursing strategy, and to identify best practices in reverse triage decision-making.

Establishing priorities for patient management is a key nursing responsibility. This type of decision-making during a disaster may be critical to the success of the response effort and lies well within the scope of nursing practice. However, little is known of nursing’s role in reverse triage to assist decompression of the current inpatient census when a disaster incident occurs. Healthcare facilities are expected to increase available resources for an incoming patient surge that may be well above usual bed capacity.

Surge and surge capability is a challenge consistently identified in the published disaster literature. Healthcare facilities are required to plan to provide care to both current and expected patients during a patient or medical surge, with capabilities to provide the highest level of patient care using available hospital beds, staffing and care resources (ASPR, 2012). In the United States, risk assessments, gap analysis, and provisions of care standards regarding the estimated medical surge exist to help guide healthcare facility capabilities (ASPR, 2012). A measureable healthcare facility coalition goal has been established for immediate bed readiness whereby 20% of staffed hospital beds are available for higher acuity patients within 4h of a medical surge incident (Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response, 2014; Hunt, 2013).

These recent guidelines serve a purpose in articulating expectations for hospitals following a disaster incident. Healthcare personnel roles, including nursing, tested methods to achieve stated goals, and exemplars of use and research to accomplish capacity and reallocation of resources to manage a surge are scant and not well defined in the literature. It will likely be a nurse’s assessment, as a member of the largest healthcare sector (American Association of Colleges of Nurses [AACN], 2016), that will contribute to the success of hospital reverse triage decision-making. Nurses’ exact role and responsibilities during the reverse triage process to achieve hospital readiness for a surge has yet to be fully investigated. The purpose of this paper was to identify relevant research addressing nurse’s roles and experiences operationalizing reverse triage for early patient
discharge to increase hospital surge capabilities.

METHODS

Search strategy
We conducted a search of peer-reviewed literature on the subject of the role of the nurse in hospital inpatient reverse triage during disasters that result in a medical surge. We used a modified Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guided search and review method with pre-specified inclusion and exclusion criteria, definition of terms and documentation of selection decisions, as recommended by Kastner et al. (2012) and Moher, Liberati, Tetzlaff, Altman, and The PRISMA Group (2009). The systematic search methodology, including the search terms, was developed in collaboration with an expert health sciences librarian and was specific to the topic of nursing’s role in hospital reverse triage during disasters that result in a medical surge. Medical subject headings (MeSH) included nurse, nursing, reverse triage, disaster, mass casualty, hospital surge capacity.

Data sources and searches
A comprehensive search was conducted of the MEDLINE (PubMed), CINAHL, and Ovid databases. These three electronic databases were included in the search, based on relevance to the research question and feasibility of yielding appropriate results. Additionally, the reference lists of the final accepted articles were hand searched to ensure that pertinent and eligible articles were not missed.

Eligibility criteria and study selection
For inclusion in this review, articles must have included the search terms (Table 1), been directly relevant to the topic of interest, and must have been published in a peer-reviewed journal in the English language between 2005 and June 2016. This time period was selected to capture all relevant literature published just previous to, or following the work of Kelen et al. (2006), as his sentinel article on reverse triage represented the beginning of early discharge research trajectory. Eligibility was limited to English, as the researchers had no access to translation resources. The search was limited to published literature in three databases to identify the most current studies available.

Inclusion criteria encompassed reference to the role of the nurse in hospital inpatient reverse triage within articles retrieved or referenced the nurse’s role in decision-making in disasters (Table 1). Articles that were initially selected for full text review. Because the nurses’ role in reverse triage was the primary focus of this search, excluded articles were carefully scrutinized for the terms nurse, nursing, or reverse triage in the title or abstract to ensure that no pertinent articles were missed. No additional articles were found using this additional strategy. Two more records were identified for inclusion through a review of the references in the first set of articles bringing the total number of full text articles for review to 26.

Data collection
Full texts of the 26 records were obtained and reviewed. Nineteen additional articles were excluded because they did not contain information pertinent to the search. Seven articles were retained. Five of the seven articles were focused solely upon other aspects of patient management during disaster response were excluded. Definitions of key terms are described in Table 2. In total, 396 articles were retrieved in PubMed, 520 in CINAHL, and 587 in Ovid (Figure 1). Title and abstract screening of the articles was first conducted to rule out and delete any obviously irrelevant articles that the search retrieved. After removing duplicates and applying exclusion criteria to 1,349 articles, 1,325 articles were eliminated and 24 were initially selected for full text review. Because the nurses’ role in reverse triage was the primary focus of this search, excluded articles were carefully scrutinized for the terms nurse, nursing, or reverse triage in the title or abstract to ensure that no pertinent articles were missed. No additional articles were found using this additional strategy. Two more records were identified for inclusion through a review of the references in the first set of articles bringing the total number of full text articles for review to 26.

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RESULTS

The results of the systemic review produced a largely negative literature search. Only seven articles were retained and none of the articles retrieved fit into the specified requirements, including concentration on all four focus themes (i.e., nursing, decision-making, reverse triage, and disasters). When reverse triage or early patient discharge was mentioned within the studies, the role of nurses was rarely specified. Often, the role of the nurse was implied rather than clearly stated. All included articles were published between 2005 and 2009. Table 3 lists article findings for the role of the nurse and reverse triage. Melnyk and Fineout-Overholt’s (2011) evidence hierarchy was used to assign level of evidence.

DISCUSSION

The articles reviewed confirmed the sudden unanticipated demand for healthcare services or patient surge as a consistent, perplexing conundrum for hospitals when a disaster occurs. Unfortunately, our literature revealed little regarding nurses’ role in hospital reverse triage. Chapman and Arbon (2008) described from their review
of the existing literature that nurses will likely have extended practice roles during a disaster incident. Toulson and Wroten (2007) acknowledged extended roles for the nurse and suggest that one of the nurse’s roles would be evaluating current bed availability, of which planning and executing early discharge would be identified in the facility emergency operation plan. Kaji and Lewis (2006) cited results from a Los Angeles county survey of hospitals whereby 98% of their emergency plans included an early discharge policy, but
fail to mention nurses’ role within the plan. The nurses’ role in reverse triage has indirect evidence of action when Challen and Walter (2006) identified that nursing notes are used for decision-making for early patient discharge, because this documentation is readily available. Jen, Shew, Atkinson, Rosenthal, and Hiatt (2009) and Van Cleve, Hagan, Lozano, and Mangione-Smith (2011) acknowledged nurses and nurse leaders as members on interdisciplinary discharge teams. The research by Davis et al. (2005) identified nurse managers as decision-makers using clinical assessments for reverse triage decision-making during a hypothetical mass casualty incident, while Jen et al. (2009) identified the nurse role in reverse triage as one of communication because dialogue occurred between the multidisciplinary discharge planning team and the nurse(s) and physician(s) of the primary care team.

**CONCLUSION**

Reverse triage for early discharge operationalizes risk stratification that allows the timely identification of hospitalized patients deemed safe for discharge whose care can continue out-of-hospital for a time until the system recovers. It is a critical patient management strategy during a disaster event. This literature review provided little evidence regarding the role of the nurse in reverse triage and, in fact, revealed that very little research has been conducted in this area. No evidence was located that described nurses directly at the bedside using patient’s acuity, functional abilities, or resource need assessments as a basis to make early discharge disposition recommendations.

Certainly, nurses will play a critical role, as their assessment and decision-making skills can contribute to increasing a hospital’s capacity to respond to victims of a disaster event. The articles we reviewed did articulate a need to support and prepare nurses for extended roles during a disaster. Additional research is needed to better understand the role and responsibilities of nurses in hospital reverse triage for the purpose of enhancing medical surge capacity.

**REFERENCES**


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