A Conceptual Model for Emergency Department Patient Experience

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Abstract

Emergency department (ED) patient experience continues to be a growing area of focus for ED physicians, administrators, and regulatory agencies. Recent literature has suggested a strong correlation between positive ratings of patient experience and important health system goals, including improved clinical outcomes and care quality, increased staff satisfaction, and reduced medicolegal risk. However, given the myriad of factors driving ED patient experience, identifying effective and synergistic interventions can present a challenge, especially in the setting of limited ED resources. Utilizing the themes identified in a recent systematic review of the ED patient experience literature, we developed a conceptual "logic model" of ED patient experience in order to provide a broadly applicable framework for practical intervention and to guide further study of ED patient experience interventions. The logic model was modified in an iterative fashion through review by local patient and staff groups as well as a national interest group until arriving at the current, comprehensive version. Here, we describe the creation of the logic model and, with the aim of providing a framework for readers to develop similar models for their practice settings, provide a case discussion of its use by an ED medical director.

Keywords

communication, emergency medicine, environmental design, interprofessional communication, leadership, measurement, quality improvement, wait times

Introduction

An emergency department (ED) visit presents a unique opportunity to establish a positive relationship based on a patient's opinion of the quality and value of the care received. However, in attempting to achieve excellence in patient experience, ED leaders are challenged by factors intrinsic to the ED care environment, including overcrowding, long waits, communication challenges, uncomfortable physical environments, and often unsatisfactory pain control and privacy (1–6). Given these challenges and an increasingly recognized correlation between ratings of patient experience and important clinical goals, including clinical outcomes, medication compliance, staff satisfaction, and frequency of lawsuits and complaints, ED patient experience continues to be a growing area of focus for physicians, administrators, and regulatory agencies (7–11). This work describes a novel tool for ED leaders to address these challenges and improve their departments' performance in patient experience.

Although drivers of ED patient experience and patient-oriented outcomes have been studied extensively, the relative value of these themes and the links between them have not been clearly established (1,4,12). Existing organizations, such as Healthstream, do offer ED patient experience surveys with "questions that most highly correlate with a patient's satisfaction," but the logic behind the identification of included themes is not publicly available (13). Likewise, while the development of the Hospital Consumer Assessment of Healthcare Providers (HCAHPS) survey was robust, this survey focuses on hospital inpatients as opposed to ED patients (14,15).

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Existing process improvement models, such as root cause analysis and the Ishikawa (fishbone) diagram, have been employed successfully in addressing patient experience in health care, but not in the ED setting (16,17). In the absence of an existing framework for the study and improvement in ED patient experience, we believe that logic modeling, a tool drawn from systems engineering, may provide a conceptual framework allowing for clear visualization of the relationship between underlying assumptions and realities and expected outcomes (18,19). This allows for a systematic approach demonstrating various components relevant to a plan for change, highlighting the relationship between these and underlying contexts and potential outcomes, and may assist in facilitating high-yield, focused interventions aimed at fundamental systems and process improvements (20).

Here, we demonstrate the successful use of a logic model framework for causal illustration of factors affecting ED patient experience through describing the creation and practical utilization of an evidence-based logic model. Drawing on published literature and systematic reviews, we developed a logic model which is useful both for practical intervention and to direct future study of novel ED patient experience interventions. Through a case study, we demonstrate how the logic model might be utilized by an ED director to create a plan for change.

Development of the Conceptual Model

Background

As reported elsewhere in the literature, a systematic review of the existing ED patient experience literature was conducted to identify the most frequently cited themes. Criteria for inclusion in the systematic review included peer-reviewed articles that were focused on patient experience, were specific to the ED setting, utilized observational or interventional methodology, were available in English, and had been published in a peer-reviewed journal. After a comprehensive literature search and screening process, 107 publications were identified for full review. Through modified grounded theory, a set of 15 thematic codes was developed, and utilizing qualitative data software, the authors reviewed and coded each publication.

The most commonly cited themes included staff–patient communication, followed by wait times and staff empathy and compassion. The least commonly cited themes included ED crowding, patient support (as defined by family and social support structures), ED leadership and policy factors, and staff experience (21).

Drafting and Concept Mapping

The process of drafting the logic model began with collecting the broad array of themes related to patient experience, both from the extant literature and from the experience of the authors. Drawing on the themes identified in the abovementioned systematic review, the authors, including ED physicians and an ED administrator, developed a large list of thematic elements to be employed in the process of logic modeling and in order to create a comprehensive visual concept map. Of note, while appearance in the literature, and thus the systematic review, is not an absolute marker for the most important or influential factors affecting ED patient experience, given the absence of such a validated list, this was utilized to capture the majority of such themes. Next, the authors began to conceptualize various linkages between themes and consider opportunities for visual description of relationships. Utilizing the common logic modeling rubric of "structure, process, and outcomes," the basic identified elements of ED patient experience were grouped into "contexts," "service delivery," and "outcomes." This broad rubric highlighted the logical grouping of domains and aimed to emphasize the interplay and relationships between themes.

The authors shared this draft in a focus group format with an informal volunteer patient advocacy group of approximately 5 interested patient advocates and ED staff including physicians and administrative staff and gathered feedback on element grouping and prioritization. The model was subsequently challenged at our department's monthly multidisciplinary patient experience committee meetings (inclusive of nurses, physicians, physician assistants, and administrative staff) through both discussion and testing through practical usage with multiple local initiatives. Based on these discussions, the authors placed increased focus on patient perception and the importance of feasible change models and divided larger categories into more accessible domains to group individual elements. Fundamental contextual factors were divided into broad domains by role group for clearer organizational separation. The authors summarized subsequent service delivery elements as domains of "perception" of underlying contexts, specifically related to perception of the current state, and divided these elements by stakeholder role, including patient perception of the ED and staff, and importantly, staff perception of the ED and capacity. Two of the underlying contextual domains naturally and logically influenced each of these, which was noted in the logic model. Additionally, in the service delivery section, the authors placed emphasis on themes related to moving from a current to future state. Elements were divided into 2 broad domains of "change models": one aimed at ED-related interventions and another at staff-related interventions. Again, the underlying patient and staff perceptual elements fit logically into these domains. Lastly, the authors utilized a single domain of "outcomes" to summarize outcome elements and themes most frequently emphasized in our systematic review of ED patient experience literature and ordered this to recapitulate the structural organization of the remainder of the logic model. Feedback loops were then added to highlight the synergy between patient experience outcomes and the domains of patient and staff perception.

Finally, the authors presented the resulting model to a national society academic emergency medicine physician
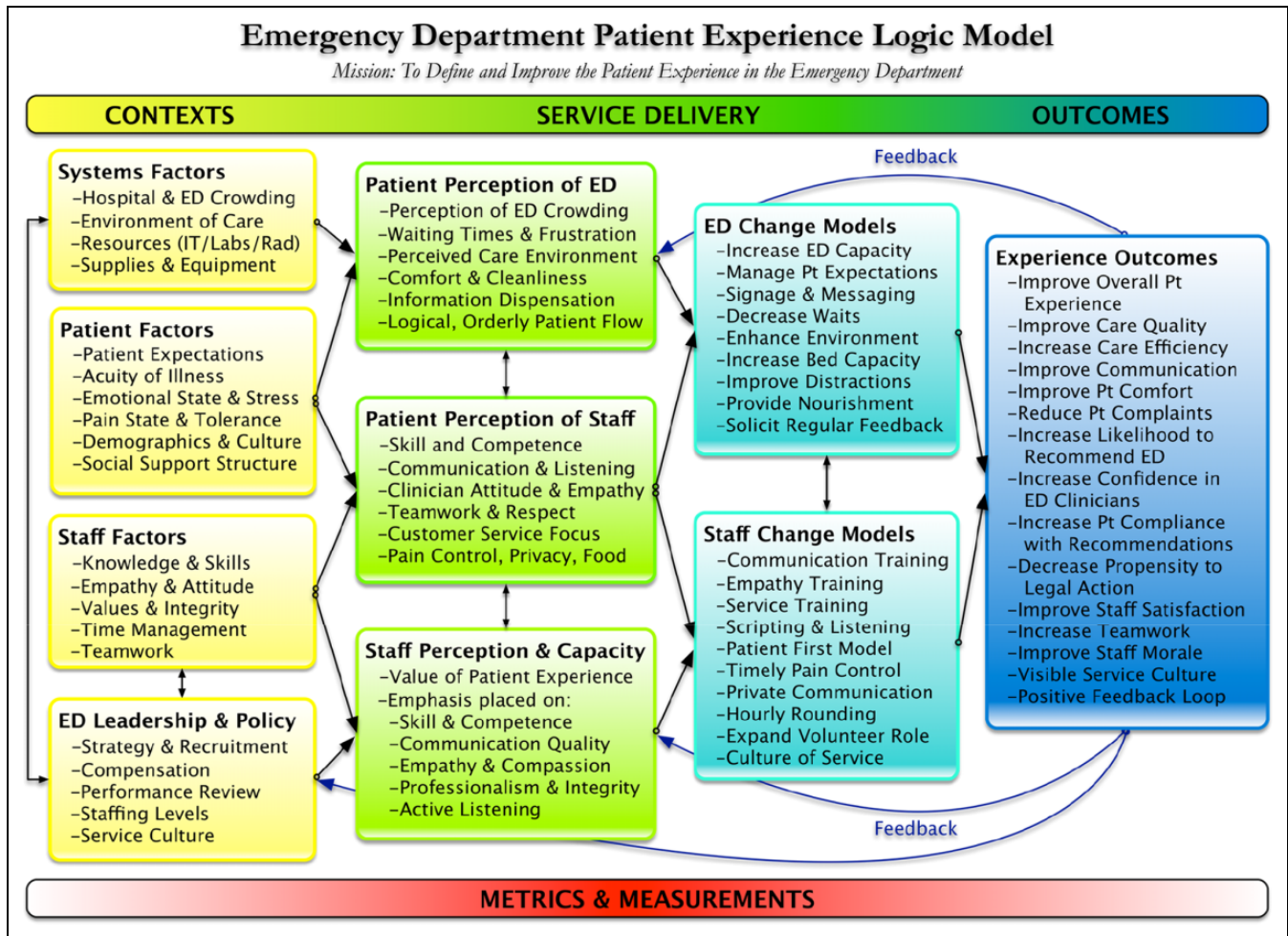
Figure 1. The emergency department patient experience logic model.

operations interest group and then incorporated further feedback, including emphasis on efficiency, pain management, and further opportunity to define outcomes measures. The final model, developed over approximately 1 year, provides the user a framework for effecting change to ED patient experience by linking existing problems, potential interventions, resulting outcomes, and mechanisms for incorporating feedback (Figure 1). The model demonstrates that individual contextual and perceptual factors do not exist in isolation; similarly, outcomes resulting from individual change models have effects beyond their direct intention. Below, we include a case discussion to highlight how an ED director might utilize the logic model in addressing a patient experience problem in his or her department.

Practical Usage of the Logic Model: A Representative Case Discussion

The medical director of a large, urban, academic ED with approximately 115 000 annual visits receives a letter from a dissatisfied patient stating that she was "left waiting for hours" and "no one told [her] what was going on" during

her recent visit for abdominal pain. She states that despite being told to present to the ED immediately for what might be a dangerous condition, she waited "forever" to undergo imaging. The patient concludes by stating that she "would never recommend your ED to a friend" and hopes the ED will improve.

The director is disturbed by the letter but assumes it was an isolated incident on a particularly busy day. But, another letter arrives the following week, and over the next month, another five, and the themes are repeated: *I felt ignored, was made to wait without explanation, and no one seemed to care.* Given this disturbing pattern, the ED director reviews the logic model and sets out to define what is obviously a department-wide problem and develop a plan to address it.

Contextual Factors

These patients' negative experiences surrounding inadequate provider–patient communication may be related to multiple systems, patient, and staff/leadership factors. Most obvious may be ED overcrowding and resource (ie, computed tomography [CT] scan) availability, both systems factors.

However, patient factors including stress, fear, and importantly, expectations—in the example above, the expectation that the patient would be treated "immediately"—also may play a significant role in ED patient experience. Similarly, while this ED had made recent efforts to increase staffing (and decrease patient to staff ratios) for providers, nurses, and support staff, staff-specific factors including empathy and communication may lead to ED patients feeling ignored and uninformed.

Perception of Service Delivery

Each of these contexts led to the letter writers' perceptions of the ED itself and its staff. The long waits to be evaluated and to undergo CT scan led to the perception of the ED as overcrowded and disorganized with regard to patient flow, despite the fact that it was without staffing deficits and had achieved a median door-to-provider time of approximately 20 minutes. The sense that patients were ignored and left uninformed led to the perception of staff as lacking empathy and adequate communication and listening skills.

Change Models

After identifying these contextual and perceptual factors, the ED director considers strategies for change. Given limited resources, the ED director elects to focus on several discrete initial interventions.

First, patients clearly expressed becoming more dissatisfied based on the long wait for imaging. The director recognizes that it may not be practical to markedly decrease the time to CT given volume and resource constraints but notes that among possibilities for change at the *ED change* level is improvement in management of patient expectations. Thus, the ED director decides to focus on messaging honest time-to-CT estimates to patients. Signage is created stating estimated wait time ranges for studies including CT and is posted throughout the ED. To address ED staff change, a multidisciplinary team of interested providers and staff is formed to meet regularly to focus on how well the signage is working and what iterative changes might improve the initiative. This group champions the effort by messaging to colleagues during shifts about the importance of providing honest time estimates. Sample scripted language around time estimates and directing patients to the signage is created by the group and shared with staff. Additionally, reviewing the ED change models, the director recognizes that installing a phone charging station would be relatively inexpensive and provide distraction to patients and visitors during long ED stays. A clear link to an informative ED FAQ web site is also provided at the charging station.

Second, noting that a common theme among dissatisfied patients was feeling uninformed regarding updates to their plans of care, the director returns to the logic model seeking additional areas for change. Ultimately, the ED director meets with nursing and provider leadership and develops a plan for hourly rounding, through which patients and their families are updated on the current status of their care process at least once per hour by a member of the ED staff.

Outcomes and Feedback

Changes are made, and over the next several weeks, a selection of ED patients is called by a nurse practitioner for feedback. Each is asked targeted questions addressing the recent changes, including the following:

1. Did you notice signage in the ED with estimated wait times for testing?
   a. If you did, was it helpful?
2. Did you feel informed throughout your ED stay?
3. Were you visited at least once hourly with an update regarding your care?
   b. If you were, did this make you feel more informed?

After reviewing call back data on 500 patients (approximately 1 month), the ED director discovers that only 25% of patients noticed the signage. But, of those who did, 85% found them helpful. This *feedback* is provided to the multidisciplinary group and a larger, brighter sign is designed. The group finds that some signs were not placed in clearly visible areas, so new spaces are identified.

Regarding communication, 50% of patients reported feeling informed during their ED stays. However, only 35% of patients reported that they were updated at least once hourly. Of those who stated that they were visited hourly, 95% did feel informed. The ED director is both pleased that the hourly rounding is improving patients' perception of being informed and concerned that this practice is only occurring for the minority of cases. The ED director again reaches out to nursing and provider leadership and hears that the staff is already overworked and frequently does not have the bandwidth to complete these additional tasks. Alternative ideas are discussed, and ultimately, plans are made to increase ED volunteer staffing during the busiest hours so that those bedside visits in which medical information does not need to be discussed (ie, assessing comfort and offering warm blankets, providing general information regarding testing wait times) can be performed by nonclinicians.

The new and improved signs are hung, volunteer staffing is increased, volunteers are trained on making scheduled hourly visits to patients, and a plan is made to review feedback and reassess in 1 month.

Research Applications

While the logic model serves primarily as a tool for practical ED patient experience intervention, it also may be used as a guide for research efforts and policy efforts both within and beyond emergency medicine. Using the previously discussed example, the postintervention survey data could be utilized for research: pre-

and postintervention survey data could be obtained to determine whether an intervention, such as posting signage, had a significant effect on an outcome, such as whether patients report feeling informed. Additionally, the model may suggest additional outcome measures to explore based on their relationship to others. Returning to the previous example, after reviewing the experience outcomes of the logic model, a researcher aiming to measure the effect of installing a mobile phone charging station on reported patient comfort might also investigate its effect on a patient's likelihood to recommend the ED.

Limitations

Our logic model has several limitations. First, given that ED environments and care models vary, some contextual factors which may be relevant to one ED may not be germane to others. To improve generalizability, the model was created based on the extant literature, and with the intention of being as widely applicable as possible, without focusing on systems, patient, or staff factors specific to our ED. Second, many of the change models suggested do require additional resources to implement. While these are often minimal and do not require additional staffing, even minimal increases may not be feasible in all practice settings. Finally, because the logic model was developed following review of existing ED patient experience literature, there may be other equally or more important contributing factors which have not been previously studied and therefore are not addressed. We hope that the iterative process including vetting with multiple ED patient experience experts and thought leaders has minimized this risk of omission.

Conclusion

Patient experience with ED care is a rapidly growing area of focus for ED leaders, policy makers, and researchers. Through our systematic review of the existing ED patient experience literature, we developed the logic model as a guide for both practical intervention and further academic inquiry. While the model was developed at our institution, it is widely applicable across a variety of ED practice settings and addresses a wide array of ED patient experience challenges. Future work should focus on testing and improving the model through use and updating the model in real time as additional relevant ED patient experience factors are discovered.

Declaration of Conflicting Interests

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Benjamin White, MD, is an assistant professor of Emergency Medicine at Harvard Medical School and an attending physician at the Massachusetts General Hospital Department of Emergency Medicine. He also serves as the director of Clinical Operations, and is the co-chair of the ED Patient Experience Committee. Ben's academic work has focused on ED operations and systems improvement, with an emphasis on systems engineering, process flow, and patient experience improvements.