



KEY POINT SUMMARY

OBJECTIVES

To describe the conception, preparation, and implementation of a split-flow process in an emergency department, and to assess the resulting improvement outcomes.

Ready-JET-Go: Split flow accelerates ED throughput

Bish, P. A., McCormick, M. A., & Otegbeye, M. 2016 | *Journal of Emergency Nursing*. Volume 42, Issue 2, Pages 114-9

Key Concepts/Context

Emergency departments (ED) in America have seen large increases in demand for emergency services over the last decade. This increased demand for ED services has resulted in delayed treatment for patients, increased rates of patients leaving the ED without receiving treatment, and decreases in satisfactory ED visit experiences. In response, different healthcare institutions have tried and tested their own methods to better accommodate the growing numbers of patients requiring ED care. One such method is the “split-flow” design, in which incoming patients are classified as either “less sick” or “more sick” in order to optimize patient flow, time and resource allocation. While the effectiveness of split-flow implementation is well documented, there is a need for literature detailing the behind-the-scenes process involved in planning, implementing, and sustaining the split-flow design in an ED.

Methods

Preparation, education, and implementation of the split-flow process in the ED culture referenced within this study were derived from a framework made by the Institute of Medicine (IOM).

Initially, ambulatory patients meet with a triage nurse who gathers vital signs, a chief complaint, and a list of associated symptoms and comorbidities. This abbreviated triage interview allows nurses to delineate between patients who are “sick” and “not sick” using a 5-level scale known as the emergency severity index (ESI), which prioritizes patients based on acuity and the resources that will be required for care.

Priority 5 patients, who may have a simple rash, or priority 4 patients, who may have simple orthopedic injuries, move to a Rapid Care treatment area. Patients deemed “sick,” who may have chest pain or other conditions that indicate likely admission to the hospital, are priority 1, 2, or 3 horizontal, and are moved immediately to open ED beds. Priority 3 vertical, or those who are “not sick” but still



considered a lower-level 3, go directly to a dedicated split-flow treatment area known as the Joint Evaluation Treatment (JET) area. Once treatment is initiated in the JET area, the patients are moved to JET Continuing Care (CC) so that the movement of patients from intake to discharge is streamlined.

Over a period of four months, ED staff learned about the new split-flow process through relevant journal articles, organized workgroups, and a webinar. Simulated exercises using the process were also conducted. Areas of the ED were reconfigured to better suit the expedited flow of patients involved in the process. Historical data were extracted from the emergency department information system (EDIS) to make staffing recommendations and room requests (such as an extra radiology room) for certain times of the day.

Findings

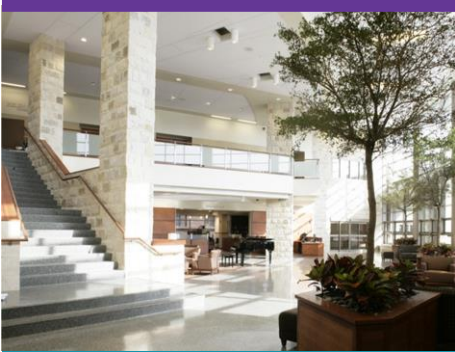
After implementation of the split-flow process, median arrival-to-departure time was reduced by 42% from 192 minutes to 112 minutes. Door-to-diagnostic evaluation dropped by 58% from 72 minutes to 30 minutes. Patient satisfaction scores for nurses, physicians, and the ED as a whole rose to the 90th percentile compared to common scores previously in the 60%-80% range. All of this occurred despite a 10% increase in patient volumes after split-flow was implemented.

Limitations

The study only briefly describes any structural or physical design changes that occurred during the implementation and use of the split-flow process. Relocation of beds to accommodate the new flow of patients and renaming of certain spaces such as “waiting room” into “lobby” to promote expedited action was mentioned, but the study focused almost entirely on personnel preparation and organization. Staff feedback on the process was briefly touched on and described as largely positive; however no in-depth or diverging perspectives from staff were shared.

Design Implications

If a split-flow process is being implemented, designers should consider the rate at which patients will flow through certain areas of the ED (such as the JET and JET CC described in this study) and accordingly provide enough space for bodily movement and enough beds to keep the spaces productive and the lobby uncongested. When creating a new floor plan to decide which rooms will assume which role within the split-flow framework, hallways or passages through which patients will be escorted



from one area to the next should be uncluttered and low in traffic. Privacy curtains could be made available during information-gathering steps.

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