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LEADERS IN EMERGENCY MEDICINE

Case Study Series

Redesigning Front End Patient Flow at Northwest Community Hospital

An emergency department that is proficient in its evaluation and management of patients usually has a high level of staff and patient satisfaction. Our Northwest Community Hospital team was inspired to redesign their patient intake processes during a significant renovation of their physical plant. Five major components were essential to successfully complete a project of this scope.

Organizational Support

As we considered ways to improve patient flow throughout the emergency department and maintain quality service during a period of phased reconstruction, it became clear that a redesign of the triage and front end patient flow processes would be necessary. This opportunity for improvement and redesign was important to communicate to our ED team and throughout the hospital.

Top-level support during any performance improvement project lends credibility to the project and facilitates the allocation of resources. It also ensures that there is appropriate alignment with the organization's initiatives. Our clinical performance improvement team was able to effectively communicate to the ED team and the organization the potential impact that the phased reconstruction and redesign would have on patient flow, patient safety and ED team morale. Our best opportunity to prevent compromises in quality of care, patient safety, patient satisfaction or potential loss of patient volume was to implement The Advance Triage Unit (ATU), a patient intake team and area.

Northwest Community Hospital, Arlington Heights, IL

Triage Champions

It was vital to include all stakeholders who would be impacted by the process. In our experience, people support what they help create. A team of providers, recognized as having either a proven track record in performance improvement or demonstrating a strong interest in participating, was assembled. Our team consisted of physicians, nursing representation from each shift, medical techs, phlebotomy, registration and radiology techs.

This group served as the core team for facilitating change. The initial tasks for the team included flowcharting the current patient intake process and identifying inefficient or unnecessary steps within this set of linked processes. With the process flow charts as a firm foundation, we harnessed the experience and the wisdom of the patient care team to design a new, more efficient set of intake processes.

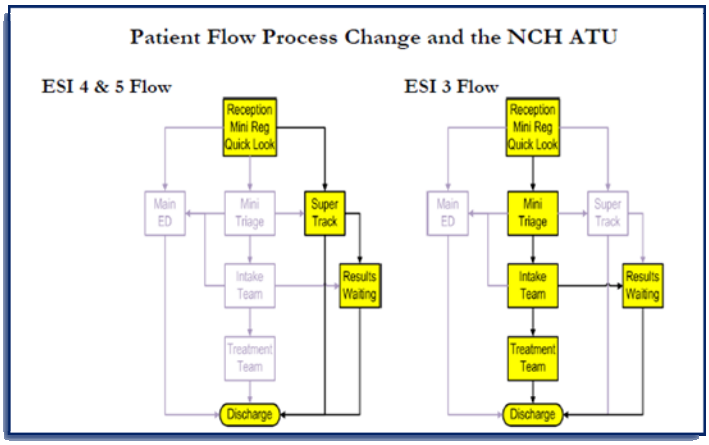
Data-Driven Design

An important step was to fully understand which patients could potentially utilize this service (understanding patient demand by hour of the day and day of the week). It was equally important to know how many clinicians and beds were necessary to deliver the service (forecasting service capacity by hour of the day and day of the week). We accomplished this by analyzing patient arrival data over a discrete period and forecasting the volume and acuity of patients coming to the emergency department. This analysis produced patient arrival and acuity data by day of week and by hour of day.

We developed an understanding of actual service times (the time necessary to perform a required clinical or support service) in the ATU. Knowing the times required to evaluate a patient each step of the journey allowed us to appropriately schedule and deploy physician and nursing staff. We could then estimate how many patients could be evaluated per hour as a function of various staffing levels, providing a sensitivity analysis as we developed the ultimate solution.

Staffing
Forecasting service demand allowed us to determine what mix of staffing would be required to make the ATU work. We defined a patient intake team as a clinician, nurse, tech and transporter. This team is deployed to the ATU during our periods of peak daily demand. The ATU now serves as the driver of patient flow at the front end of our emergency department.

Patient Segmentation
An understanding of resources (beds, nurses, techs, registration staff and clinicians) required to serve the incoming patients was a key aspect of performance improvement. Using the Emergency Severity Index (ESI) triage system, we were able to segment incoming patient care streams based on patient acuity. We were then able to segment service demand and allocate staff, beds and resources accordingly.



The Advanced Triage Unit uses the space adjacent to the waiting area to accommodate patients awaiting results and uses a tracking board to follow patients throughout the ATU. The results waiting area provides additional capacity, creating a cohort of "virtual beds," which are also monitored on the tracking board.

The Results that Matter to Northwest Community Hospital
The Advanced Triage Unit enables more patients to be seen and treated faster, with a more satisfactory patient experience. Combined Left Without Being Seen (LWBS) and left Against Medical Advice (AMA) rates have been below 0.25%. ESI level 5, 4 and some level 3 patients are now being discharged from the hospital in under 110 minutes.

Furthermore, the data do not capture the benefit to the department of the numerous patients who are evaluated and have their care front-loaded in the ATU and are then treated for the rest of their visit in the main ED. These patients also experience a reduced length of stay and higher satisfaction results. Overall patient satisfaction results have increased more than 10%.

This improvement in our front end processes has enabled the NCH Emergency Department to ensure patient safety, provide quality care and maintain a high level of patient satisfaction – all in the midst of a complex, multi-phase renovation process with significant physical space limitations.

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