

Houston Methodist Implements Rothman Index to Improve Patient Care

Highlights

- Patient's Electronic Health Record (EHR) data instantly interpreted and delivered in a color coded graph
- Clinicians better equipped to spot subtle signs of patient deterioration
- Study outcome shows 32 percent reduction in mortality rate

Background

Any clinician knows, the healthcare industry is ever-changing and evolving. Recent healthcare reform mandates shorter length of stay for patients, which means more patient handoffs in less time and an increased workload. With mountains of data from ERH (electronic health records) to absorb, staff shortages, and higher patient turnaround, clinicians can quickly become overwhelmed.

To optimize patient care and prevent staff burnout, Houston Methodist Hospital realized it needed a system to interpret patient data and help manage nursing assignments. In December 2014, the facility implemented PeraHealth solutions in 11 of its nursing units, which is comprised of approximately 300 beds.

Solution

PeraHealth solutions, powered by the peer-reviewed Rothman Index (RI), fills the need for patient data interpretation and monitoring. The RI is a universal score for assessing a patient's changing condition, which can be used to predict mortality risk and other factors. PeraHealth automatically aggregates data from any ERH health system and translates it into an RI score, presented it in easy-to-read, color-coded graphs. Clinicians can view these graphs in the EHR or in a side-by-side display on interactive monitors, where they can examine trending conditions for multiple patients simultaneously.

Besides providing early warning signals for subtle deterioration, the RI score allows clinicians to better identify patients that might be at risk for rapid response intervention or admission to the intensive care unit (ICU). It also promotes communication among the care team, since data that is already interpreted and delivered in a tidy package sparks more interest for discussion.

Nnenna Emelogu, MSN, RN, is the Director of Nursing Neurology/ Neurosurgery at Houston Methodist Hospital. In addition to assisting with nursing assignments,

Emelogu's staff also uses PeraHealth solutions during daily interdisciplinary rounds to prioritize patient bedside visits and to determine when to discharge patients and predict readmission risk.

"Every day I hear our nurses say, 'What's my patient's Rothman?'" said Emelogu. "It's the first thing they look at, and it helps us decide whether a patient should be in our unit or in a higher acuity area."

Outcome

Houston Methodist Hospital conducted a study analyzing 33,797 patient encounters over 18 months (January 2014 - June 2015), including nine months of prospective data review after implementation of the RI. The results disclosed:

- . Mortality rate fell 30 percent for the 11 hospital units using the Rothman Index.
- . Risk-adjusted mortality fell 32 percent for the 11 hospital units using the Rothman Index (p-value <0.001), while the risk-adjusted mortality rate for non-study control units remained unchanged.
- . The sepsis mortality index was 8 percent lower compared to non-study units.

Patient Example

In early 2015, a patient with an abnormally high fever was admitted for observation. Soon, the fever spiked and nurses documented that the patient's mental state was getting worse.

Nurses found the patient's Rothman Index score had dropped significantly, and quickly called for lab tests, which disclosed dangerously low hemoglobin levels. This prompted a CT scan that revealed gastrointestinal bleeding requiring immediate surgery. The patient spent a week in the ICU post-surgery before being transferred back to neurology, and was discharged shortly thereafter. The RI score was instrumental in guiding nurses toward action that saved the patient's life.