HIMSS Analytics

HIMSS Analytics Stage 7 Case Study

Reading Health System

Profile

Reading Health System includes Reading Hospital, a 647-bed acute care hospital located in West Reading, Pennsylvania, and Reading Health Rehabilitation Hospital, a facility in Spring Township, featuring a 50-bed skilled nursing unit and a 62-bed inpatient rehabilitation unit. We also provide office-based primary and specialty care through Reading Health Physician Network, in-home nursing care through Affilia Home Health, and retirement living through The Highlands at Wyomissing. An extensive network of outpatient services are provided through offices and urgent care walk-in centers throughout the region. Reading Hospital was awarded HIMSS Stage 7 on September 28, 2015.

The Challenge

Since the inception of our stroke center, care processes have continued to evolve resulting in significant improvement in stroke mortality and length of stay. However, our percentage of patients eligible for IV tPA who actually received this treatment in < 60 minutes was low with a rate of 15% for 2012. Our stroke team functioned in a challenging environment which included multiple instances of an ambulatory EHR, separate vendors for the ED EHR and inpatient laboratory, imaging results and computerized physician order entry. A stroke patient in the ED could simultaneously have paper and electronic documentation as well as electronic orders from two separate electronic systems in addition to handwritten orders.

Implementation Overview

In the summer of 2012, Reading Health System began the implementation of EpicCare Ambulatory EHR and in February of 2013, its acute hospital and rehabilitation hospital went live in a “big bang” on EpicCare Inpatient, ASAP (ED), Stork (OB), Anesthesia, Optime, Willow (pharmacy), MyChart (patient portal), EpicCare Link (independent provider portal), ADT/Prelude (registration), Cadence (enterprise scheduling), and Resolute (hospital billing). Philips iSite PACS had been implemented several years prior to EpicCare.

Resulting Value / ROI

In order to improve door-to-CT initiation times, nursing work flow changed such that the stroke patient was brought directly to a CT scanner in the ED. Triage nurses now use a stroke narrator which provides them the ability to document the National Institutes of Health Stroke Scale (NIHSS) in a structured fashion and to document one-step medications all within work flow. In addition, ED physicians use a stroke navigator that prompts them to document inclusion and exclusion criteria for thrombolytic therapy. Clinical decision support tools within the navigator informs the physician whether the patient is a candidate for intravenous tPA or provides the opportunity to document why tPA was withheld. In addition, because the patient's weight is documented electronically, the pharmacist is able to more rapidly calculate the correct tPA dose for the patient.

Prior to the implementation of Epic, ED nurses had an electronic albeit manual documentation process for medication administration. This made it difficult to determine the exact time of tPA administration and as such, had limited the ED’s efforts to improve door-to-drug times. With the implementation of Epic, our ED nurses began to use a bar-coded medication administration which captured the time of tPA administration electronically. ED physician documentation captured through the navigator and electronic capture of the NIHSS through the narrator facilitates reporting and registry data collection and submission.

In the two years following Epic implementation, we have seen continued improvement in care processes and outcomes. The door-to-CT initiation and door-to-CT interpretations steadily improved reaching 27 and 31 minutes, respectively as of December 2014. The percentage of eligible patients receiving tPA in less than 60 minutes also improved dramatically. In 2013, there was a 60% increase in patients receiving tPA and in 2014 we exceeded the AHA/ASA target by achieving the 87% level on this metric. The entire stroke team has access to all the important data that supports timely decision-making and our neurology and interventional neurology consultants can access the patient's records, laboratories, and digital images remotely, obviating delays in care.

Reading Health System's Stroke Center has received numerous awards from Healthgrades including "America's 100 Best Hospitals" for stroke care three years in a row (2013-2015) and was awarded the AHA/ASA 2015 Get with the Guidelines Stroke Honor Roll Elite Quality Achievement Award.

Lessons Learned

Having the support of the Reading Hospital Board and Administration was a critical factor for success not only in the vendor selection process but also in setting expectations for mandatory training and actual use of the EHR by clinicians.

The engagement and input of our clinicians in the workflow validation process were invaluable. It would have been difficult to have achieved our level of success without them.

Ambulatory and inpatient optimization committees composed of practicing clinicians have provided valuable expertise and feedback regarding the effectiveness of order sets, alerts, and workflow in a rapidly changing practice environment.

A process for ongoing training and support of clinicians including at-the-elbow observation and system utilization analytics can provide key insights that can lead to improved efficiency and satisfaction.