SUMMARY:
Use of an emergency alert system and telemedicine robot to facilitate care of stroke patients.

HOSPITAL: Baylor Medical Center at Irving

LOCATION: Irving, TX

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CATEGORY:
- A: Arrival
- C: Clinical Initial Evaluation
- D: Disposition Decision/ Throughput

KEY WORDS:
- Communication
- Consults
- Information Systems
- Telemedicine

HOSPITAL METRICS:
- Annual ED Volume: 70,081
- Hospital Beds: 296
- Ownership: Irving Hospital Authority
- Trauma Level: Not Designated for Trauma
- Teaching Status: No

TOOLS PROVIDED:
- N/A

CLINICAL AREAS AFFECTED:
- Ancillary Departments
- Emergency Department
- EMS
- Inpatient Units
- Radiology
- Pharmacy

STAFF INVOLVED:
- Administrators
- Ancillary Departments
- Communications
- ED Staff
- IT Staff
- Nurses
- Pharmacists
- Physicians
- Registration Staff
- Technicians
 Immediately upon patient identification, the nurse calls the nursing supervisor to activate a Code Stroke alert. Code Stroke notification consists of patient’s name and room number, time of arrival in the ED and last known well time. Activation of the alert system may also occur for EMS patients prior to the patient’s arrival. Notification is sent to radiology, pharmacy, laboratory, stroke coordinator and ED leadership team by email, telephone or text message via the emergency notification system. The ED provider completes a quick National Institute of Health Stroke Scale (NIHSS) before transport of the patient to radiology. The ED physician calls the neurohospitalist on-call within the first 15 minutes. A nurse accompanies patient to radiology for head CT scan without contrast. The nurse starts an IV and draws blood before transfer of patient to CT table. The robot is on standby in the patient’s room upon completion of CT. The radiologist reads the head CT and calls the results stat. The ED provider calls the neurohospitalist the second time. The neurohospitalist remotely obtains own patient history and NIHSS through the robot and collaborates plan of care with ED provider.

Background
The emergency alert system works via a web-based application. An alert is activated through the application, and alerts will be sent via email, text, and phone message to the selected individuals and departments. This application is the quickest way to get out mass communication to all pertinent departments to care for the stroke patient.

Due to our hospital being associated with a larger facility with 24/7 neurohospitalist coverage, it was decided that using a robot to conduct patient consults was the more efficient and cost-effective way. The robot is wheeled into the patient's room, the neurohospitalist can dial in from any location and be able to view, communicate with, and examine the patient. At the same time, the patient is able to see and speak with the doctor. The doctor has the capability to zoom in and out of the patients and swivel the camera around to look around the exam room.

Innovation Implementation
Both tools implemented required IS support and also training to use the applications. The cost of the RP Lite Robot is $2244 per month.

Timeline
The emergency alert system was a resource the hospital already had for use of notifying staff/administrators of emergencies such as Disaster or Severe Weather Alert. Adding an alert for Code Stroke was done by adding another alert in the system. The plan for the robot was more complex, the equipment itself was ordered, staff were trained on its use, and the plans for the go-live date were made.

Results
Since the use of the robot in 2013, there have been 58 activations of Code Stroke. All Core Measure targets were met in the last 6 months with 100% compliance on NIHSS performed within 45 minutes. Nineteen patients received Tissue Plasminogen Activator. The facility BMCI also received stroke process commendation by Joint Commission in the recent mid cycle review. One patient was featured on local television to share her success story on the use of telemedicine and how it saved her life.

Advice and Lessons Learned
- To make this a successful venture, key stakeholders from multiple departments were present during planning meetings.
- Clear patient outcomes and goals were established.
- The process was outlined specifically at an organizational level and the staff level.

Sustainability
Stroke cases are discussed monthly in a multidisciplinary, collaborative team effort. Opportunities for improvement are identified and action plans developed and implemented to address issues.