Reducing Emergency Radiology Report Turn-Around-Times

The Problem
- Emergency radiology reports need to be dictated, transcribed, edited, and approved in a timely fashion to appropriately triage patients and aid in clinical management decisions of patients in the ER
- Departmental guidelines indicate a mean report total turn-around-time (TAT) goal of less than 12 hours, however, section mean total TAT within the first 6 months of 2014 exceeded this value (14.9 hrs)
- On weekends in particular, transcription of emergency radiology reports were delayed by several hours due to unavailability of transcription services
- In the ER, cross-sectional radiology exams require a preliminary wet read to be typed into a computer system different than the transcription system. As a result, trainees often delayed dictating and editing reports in order to provide timely wet reads

Aim/Goal
The aim of this project was to reduce emergency radiology report mean total TAT within a 6-month period (7/1/2014-12/31/2014) to below the departmental guidelines of 12 hours when compared to the 6-month period from 1/1/2014-6/30/2014.

The Team:Radiology
- Karen Lee, MD, - Emergency Radiology Attending
- Robin Levenson, MD- Chief, Emergency Radiology
- Elisa Flower, MD – Emergency Radiology Attending
- Sejal Shah, MD – Emergency Radiology Attending

The Interventions
- Implement Fluency Voice Recognition (VR) system to 1) decrease time to dictation through the use of integrated reporting with PACS and standardized templates and 2) completely eliminate transcription time
- Utilizing one streamlined system (VR) to enter wet reads and dictate reports rather than a separate computer system to type in ER wet reads
- Changing emergency radiology practice workflow by urging residents to dictate as they review radiology studies rather than entering wet reads initially and saving final report dictations until the end of shift
- Attending radiologists using VR to immediately sign reports once dictation is completed, thereby decreasing the time to final approval of reports

The Results/Progress to Date

<table>
<thead>
<tr>
<th>Radiologist</th>
<th>Time to Dictation</th>
<th>Dictation to Transcribed</th>
<th>Transcribed to Approve</th>
<th>Total TAT</th>
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<tbody>
<tr>
<td></td>
<td>Pre 7/1</td>
<td>Post 7/1</td>
<td>Pre 7/1</td>
<td>Post 7/1</td>
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<tr>
<td>#1</td>
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</table>

(Values are in hours)

Lessons Learned
For all members of the emergency radiology section, VR successfully helped decrease the time for all three stages of radiology report creation: time to dictation, time for dictation to be transcribed, and time for a report to be approved once transcribed. Furthermore, after 7/1/2014, when all interventions were acted upon, the section mean total TAT met the departmental goal value of below 12 hours, and even surpassed the goal (9.1 hours).

Through VR, radiology reports are immediately transcribed, enabling more complete preliminary reports, and not just wet reads, to be viewed by ER and clinical staff in a more rapid fashion, thereby facilitating clinical decision making and patient disposition.

Next Steps/What Should Happen Next
- Time for reports to be approved by the attending once the reports are transcribed can still be improved for all section members and comprises the largest component of the total TAT. Residents will be encouraged to assign reports to attendings once reviewed and dictated, to facilitate faster final attending approval of reports, which can aid in patient discharges from the ER and inpatient service
- ER wet read system is redundant now that preliminary reports are readily available. Will work with ER to improve integration of viewing of preliminary reports on their dashboard system
- Increase template driven reporting among trainees

For more information, contact: Karen Lee, MD kslee@bidmc.harvard.edu