Decreasing ED CT Interpretation Turn Around Times in An Academic Radiology Department

Audrey Verde, MD, PhD; Yoan Kagoma, MD; Vera Mayercik, MD; L Jake Mickelsen, MBA; Bryan Lanzman, MD; Larry Chow, MD
Stanford University Department of Radiology, Stanford, CA

Background

Timely imaging is important in the Emergency Department (ED). Computed Tomography (CT) plays a key role given its speed of acquisition and the actionable information provided. In 2017, a total of 22,043 ED CTs were performed at Stanford. Decreasing CT report turn around time (TAT) can be difficult for several reasons; namely, a complex patient population, a desire for sub-specialty interpretations, and a dedication to preserving resident education opportunities.

In October 2017, ED TATs were targeted for improvement with a goal of increasing CTs read within 60 minutes from 72% to 85% by April 1, 2018. Read time was defined from exam completion to first published report.

Aims

1. To fully understand the workflow from CT exam complete to first published read.
2. To implement interventions to increase the percent of ED CTs read within 60 minutes from 72% to 85% by April 1, 2018.

Methods

To implement interventions to increase the percent of ED CTs read within 60 minutes from 72% to 85% by April 1, 2018.

Interventions / Countermeasures

<table>
<thead>
<tr>
<th>Key Drivers</th>
<th>Interventions / Countermeasures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximize efficiency in interpretation workflow</td>
<td>Create a DRAFT COMPLETE button in PowerScribe</td>
</tr>
<tr>
<td>Good communication between Residents &amp; Fellows</td>
<td>Fellows read out with residents using pre-read workflow; 12/18/17</td>
</tr>
<tr>
<td>Indication in PACs when a study is complete &amp; contains all images and reformats</td>
<td>Fellows look at ED cases in parallel with residents. 12/18/17</td>
</tr>
<tr>
<td>Minimize unnecessary interruptions for Radiologists</td>
<td>Keep list up during read out. If ED cases pop up, take it next. 12/18/17</td>
</tr>
<tr>
<td>Visualize Performance and Results</td>
<td>Dr. Chow as Director of Emergency Radiology Dept. 1/29/18</td>
</tr>
<tr>
<td>Good relationship between Radiology &amp; the ED</td>
<td>On call resident and fellow establish a method of communication at beginning of shift. 1/31/18</td>
</tr>
<tr>
<td>Residents focus on ED exams. Fellows to read non-emergent inpatient exams after hours. 1/31/18</td>
<td></td>
</tr>
<tr>
<td>Residents &amp; Fellows TAT emails. 2/27/18</td>
<td></td>
</tr>
<tr>
<td>24 hour reading room assistants to field phone calls.</td>
<td></td>
</tr>
</tbody>
</table>

Results

Percent of CT Exams for ED Patients Read in 60 Minutes

- 94% of CT exams were read within 60 minutes by April 1, 2018.

Sustaining Success

1. Make successful interventions permanent.
2. Continue monitoring and analyzing CT TAT data to understand outliers.
3. Integrate on call attendings in to TAT emails and automate daily email.
5. Implement 24 hour reading room assistants.
6. Choose a PACs with transparent ED study TATs.
7. Revisit project in the future after new PACs installation in order to implement IT interventions for increased workflow efficiency.

Acknowledgements

We would like to thank our project sponsors Dr. Payam Masaband and Dr. David Larson for this RITE experience, Dr. Roger Goldman for insights on the radiology call workflow, and Dr. Laleh Gharabaghian for insight into ED workflow.

References