Physician at triage results in an increase in Radiology Requests

Nadine Thompson\textsuperscript{a}
Michelle Moscova\textsuperscript{b}
Amith Shetty\textsuperscript{d}
Jason Chan\textsuperscript{d,f}
Poppy Sindhusake\textsuperscript{c}
Noel Young\textsuperscript{e}

\textsuperscript{a} – San Radiology, Sydney Adventist Hospital
\textsuperscript{b} – School of Medical Sciences, University of New South Wales
\textsuperscript{c} – School of Medicine, Western Sydney University
\textsuperscript{d} – Emergency Department, Westmead Hospital
\textsuperscript{e} – Radiology, Westmead Hospital
\textsuperscript{f} – The University of Sydney
Background

• Westmead Hospital is a major tertiary referral and trauma centre with one of the busiest Emergency Departments in the southern hemisphere

• National Emergency Access Target (NEAT) introduced in 2012 to reduce patients waiting times, requiring 90% of patients to be discharged from ED within 4 hours by 2015

• NEAT was associated with 23%-60% increase in imaging requests between 2012-2014²
SAFE-T Zone Initiative for patients with Australian Triage Scale (ATS) 3-5

- Initiatives, including modified physician at triage model (known as “Senior streaming Assessment Further Evaluation after Triage” = SAFE-T³), were introduced to meet NEAT, improve patient flow and overcome access block¹-³

- SAFE-T Zone, introduced in February 2011, comprises of 2 assessment beds and 5 early treatment chairs

- Proven to reduce patient length of stay in the Emergency Department

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Diagram:

- **Triage**
  - **ATS category 1**
    - Triage bypass to resuscitation bays (exclusions)
  - **ATS category 2**
    - Triage to acute bed space in ED (exclusions)

- **ATS 3-5**
  - Triaged to acute bed when available
  - Seen initially in SAFET when bed not available

- **Triaged to Urgent Care Centre- minor injuries (Exclusions)**
To evaluate whether SAFE-T zone (modified physician at triage) and other initiatives contributed to increase in radiology services observed after introduction of NEAT at a major trauma teaching hospital in Sydney, Australia.
Materials and Methods

- Ethics approval from WSLHD HREC file number 4767
- Retrospective analysis of imaging requests from ED during Aug-Oct 2011 (prior to NEAT) and Aug-Oct 2012-15 (after NEAT introduction)
- Data collected from ED Information System and Radiology Information System, analysis performed using SPSS v.17
Materials and Methods

• Multivariate logistic regression model was constructed to evaluate if being treated in SAFE-T zone was independently associated with increase in radiology requests after introduction of NEAT. Model was adjusted for the following factors:
  - triage category (ATS)
  - Presenting problem
  - NEAT status (whether patient met NEAT)
  - Working hours (whether request was placed in or out of hours)
Results

- 81,322 patient presentation
- 98,925 imaging requests
- There was a significant increase in the imaging requests received for patients treated in the SAFE-T zone after NEAT introduction
Imaging requests received from SAFE-T zone (% of total requests from ED) before and after NEAT introduction

2011 - requests from SAFE-T zone prior to NEAT introduction
Treatment in a SAFE-T zone is an independent predictor of increase in imaging requests after NEAT introduction.

<table>
<thead>
<tr>
<th>Year</th>
<th>No of requests from SAFE-T zone</th>
<th>Unadjusted OR</th>
<th>95% CI</th>
<th>Adjusted OR**</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>894</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2012</td>
<td>2,672</td>
<td>2.32*</td>
<td>2.14-2.51</td>
<td>2.61*</td>
<td>2.41-2.83</td>
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<tr>
<td>2013</td>
<td>4,185</td>
<td>3.37*</td>
<td>3.12-3.64</td>
<td>4.34*</td>
<td>4.00-4.70</td>
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<tr>
<td>2014</td>
<td>3,689</td>
<td>2.82*</td>
<td>2.62-3.05</td>
<td>3.48*</td>
<td>3.21-3.77</td>
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<tr>
<td>2015</td>
<td>3,937</td>
<td>3.41*</td>
<td>3.16-3.68</td>
<td>4.14*</td>
<td>3.82-4.49</td>
</tr>
</tbody>
</table>

*Change is statistically significant (p<0.05) compared to 2011 (pre-NEAT)

**Adjusted for triage category (ATS), presenting problem, NEAT status, working hours
Discussion

• This is the first investigation to identify impact of SAFE-T zone\(^3\) on imaging requests after introduction of NEAT

• Initiatives in ED impact other services, this needs to be considered when interventions are implemented
Conclusion

- ED initiatives impact radiology

- Patients seen by a physician at triage have a higher volume of radiology requests compared to patient not seen by a physician at triage

- The SAFE-T zone initiative has contributed to an increase in radiology requests after NEAT introduction
References

1. Thompson, N et al. Do delays in radiology lead to breaches in the 4-hour rule?, In ASMMIRT 2016 Rise and Shine, Brisbane, Australia, March 2016

2. Tse R, et al., Do delays in radiology lead to breaches in the 4-hour rule?, Clinical Radiology (2016), http://dx.doi.org/10.1016/j.crad.2016.02.008