**Provisional reporting of Emergency Department radiographs and correlation with the final radiological report**

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**Purpose**
Sheffield Children’s Hospital (SCH) Emergency Department (ED) guidelines state that all X-rays seen by ED staff must have a comment (provisional report) added to PACS (picture archiving and communication system).

It ensures that the radiologist providing the final report knows the opinion of the ED doctor and allows the patient to be recalled to ED if required. If no comment has been added, it is assumed that any clinically relevant pathology or abnormality has been missed, which can generate unnecessary work.

A series of audits have been performed since 2009, designed to assess the level of provisional radiograph reporting by the ED. The November 2014 audit cycle was extended to assess the level of agreement between the provisional ED report and the final radiological report.

It is also important to identify and understand the reasons provisional reports are not documented by the ED clinicians to improve compliance with the guideline.

**Methods & Materials**
A PACS search identified all plain radiographs requested by the ED over a 2-week period in November 2014. The data collected was audited against the SCH ED guideline (local standard): 100% of radiographs seen by ED clinicians must have a comment.

A retrospective analysis of the radiographs assessed the presence of a comment (provisional report) and correlation with the final radiological report. Missed findings were categorised with reference to how obvious the finding was, as assessed by a junior radiology registrar (Table 1).

<table>
<thead>
<tr>
<th>1</th>
<th>Obvious finding</th>
<th>No ED report</th>
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<tbody>
<tr>
<td>2</td>
<td>Possible miss</td>
<td>No ED report</td>
</tr>
<tr>
<td>3</td>
<td>Definite miss</td>
<td>Disagree with ED report</td>
</tr>
<tr>
<td>4</td>
<td>Not fracture</td>
<td>ED fracture or fracture found</td>
</tr>
<tr>
<td>5</td>
<td>Normal report/Finding</td>
<td>No ED report</td>
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Table 1. Categorisation of missed findings as assessed by a junior radiology registrar.

Additionally, the collected data was analysed with respect to the body part imaged and differences between those radiographs provisionally reported in-hours (IH) versus out-of-hours (OOH).

Attitudes of the ED clinicians towards commenting was reviewed via an anonymous questionnaire.

**Example radiographs**

**Figure 1.** Lateral knee radiograph. Provisional ED report: No abnormality detected. Final radiological report: Joint effusion. No fracture. Other causes of knee pain and effusion need to be considered. ED informed. Category 3

**Figure 2.** DP and lateral radiographs of the right wrist. Provisional ED report: None provided. Final radiological report: Dorsal buckle fracture of the distal radius. Normal alignment. Category 1

**Figure 3.** AP supine chest radiograph. Provisional ED report: None provided. Final radiological report: There is consolidation throughout the right lung with volume loss and mediastinal shift suggesting collapse. Left lung is clear. Category 1

**Results**

**Quantitative results**
358 radiographs were included in this audit cycle. 241 (67%) had an ED comment, which is comparable with results from previous audit cycles (Table 2), in addition to 85% agreement. In those without agreement, there were 3 definite misses and 10 possible misses requiring patient recall. Of the 117 (33%) radiographs without an ED comment, there were 29 obvious, and 6 possible missed clinically relevant findings that required discussion with the ED and/or admitting team, and possible patient recall.

<table>
<thead>
<tr>
<th>Number of radiographs with ED provisional report (%)</th>
<th>2009</th>
<th>2011</th>
<th>2012</th>
<th>2014</th>
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<tbody>
<tr>
<td>67</td>
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<td>72</td>
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Table 2. Results of previous audits, commencing in 2009.

Radiographs of the chest (28, of which 14 had an obvious finding) and wrist (14) were the most common body part without an ED comment. More radiographs (202) were performed OOH with an ED comment, in comparison to those performed OOH (70% vs. 64%, respectively).

**Qualitative results**
57% (20/35) of ED clinicians responded to the anonymous questionnaire. All had access to PACS and knew a comment was required. 95% (19/20) knew their PACS account allowed them to add comments and felt comments were useful for radiologists.

When asked, “Why do you think Radiologists want us to comment on X-rays?” some respondents stated that:

- “It allows missed pathologies to be recalled”
- “It provides a safety net for patients”
- “It is a safety net for ourselves when it comes to their report if they are discrepant”
- “It is a safety net for themselves when it comes to their report if they are discrepant”

Two clinicians felt it was a good for trainee feedback and teaching.

Forgetfulness was the most common reason clinicians did not comment. Other reasons included that the patient was in resuscitation at time of X-ray, or lack of time. Two clinicians stated that they sometimes did not comment because they did not know how to describe the abnormality.

**Conclusion**
Provisional reports provide the reporting radiologist with information on patient management, providing a ‘safety net’ to prevent missed pathology.

Despite implemented recommendations following previous audit cycles, the level of provisional radiograph reporting has remained static (=68%) since audit inception (2009).

Further learning points from this audit cycle include:
1. Inclusion of the guideline in ED doctor induction.
2. Emphasising patient management in the provisional report, if there is lack of confidence in fracture description.
3. Even obvious findings require a provisional report to reduce the potential radiology workload.
4. Adjust guideline standard to 70% which better reflects working practice.

**References**

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