Retrospective audit:

**Double reporting of skeletal surveys in non-accidental injury**

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**Non-Accidental Injury**

- NAI is stressful for family, guardians & health workers
- Management of NAI requires vigilance, professionalism, communication
- Correct management and follow up is crucial
Current UK Guidelines

- Plain film NAI protocol - full skeletal survey
- Includes ALL bones in the body - up to 24 images
- Requires specialist knowledge to read the films
- “double reporting by two separate radiologists must be accepted as the preferred and ideal clinical standard” - Royal College of Radiologists, UK

Follow-up surveys are recommended 2 weeks later

- Focuses on areas of interest
- Plus includes oblique views of the ribs and a chest film
- No standard follow-up protocol in national guidelines, but research shows they may improve fracture detection rate by up to 46%*
- RACH uses a limited 3 view follow-up survey
Why audit?

- To assess our local practice of double reporting
- To identify whether double reporting makes a difference
- To assess the effectiveness of follow-up surveys
- To identify areas for improvement locally

Assessment Criteria

- Primary survey should be double reported - 100%
- Follow-up surveys should be performed - 100%
- Any failures should be documented
Results

All NAI cases reviewed

1st Jan 2010 - 12th Oct 2011

@ RACH, Brighton

<table>
<thead>
<tr>
<th>Total cases</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. double reported</td>
<td>21</td>
</tr>
<tr>
<td>Number agreed</td>
<td>19</td>
</tr>
<tr>
<td>Number disagreed</td>
<td>2</td>
</tr>
<tr>
<td>No. single reported</td>
<td>11</td>
</tr>
</tbody>
</table>
Double reporting

- Only 66% primary surveys were recorded as being double reported
- Why is this?
  - Problem with reporting software - not easy to document 2nd radiologist’s presence on the radiology information system
  - No second report done - time pressure, no confident diagnosis

Double reporting

- 10% had different findings on the second radiologist’s read
  - e.g. Difference in opinion on extent of skull fracture
  - or query missed rib fracture

- This proves the benefit of double reporting
Can you spot the fracture?

🔹 The next slide is a lateral skull, performed as part of the initial full survey
🔹 Can you spot the fracture?
Follow-up surveys

- 8% had new/different findings
- e.g. new rib fracture, tibial metaphyseal fracture

- Lower than the quoted 46%* - are we missing fractures by only performing a 3 view follow-up survey?

Follow-up surveys

- 78% had a limited secondary survey performed
- Variety of reasons for failing to do 2ry survey
  - e.g. did not attend, cancelled, not clinically indicated
  - Worryingly 4 cases (13%) had no documented reason for not having a secondary survey performed
Conclusions

- Double reporting at our hospital has not met UK Royal College recommendations - only 66% were double reported
- Follow-up surveys are not always being performed - only 78%
- 13% were lost to follow up
- What can we do?

Recommendation I

- Radiologists to ensure double reporting AND use standardized method of documenting the second report with no exceptions
- Need to discuss practicalities of documenting first and second reports on our radiological IT systems
Recommendation II

- Communication between clinical team and radiology department as to why patients are being lost to follow-up
- Reasons should be documented in the clinical notes AND on our radiological IT system

Recommendation III

- Discussion to be had over the value of a more detailed secondary survey - perhaps up to 15 views, as is performed elsewhere
Can you spot the fracture?

- The next slide is an oblique posterior view of the ribs, performed as part of a secondary survey
- Can you spot the fractures?
Looking Ahead

- Implement recommended changes
- Ensure double reporting and follow up systems are robust
- Re-audit with same criteria, ongoing over the next year
- Trial more extensive 2ry survey
Take home messages

- Double reporting by two specialist radiologists is demonstrably more accurate at picking up pathology in cases of suspected NAI.
- Follow-up surveys, 2 weeks after initial presentation, also improve fracture detection.
- Departments should have appropriate systems in place to ensure double reporting is standard practice, and no child is lost to follow-up.

Thank you

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