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

Current UK Guidelines

- 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

Total cases	32
No. double reported	21
Number agreed	19
Number disagreed	2
No. single reported	11

Double reporting

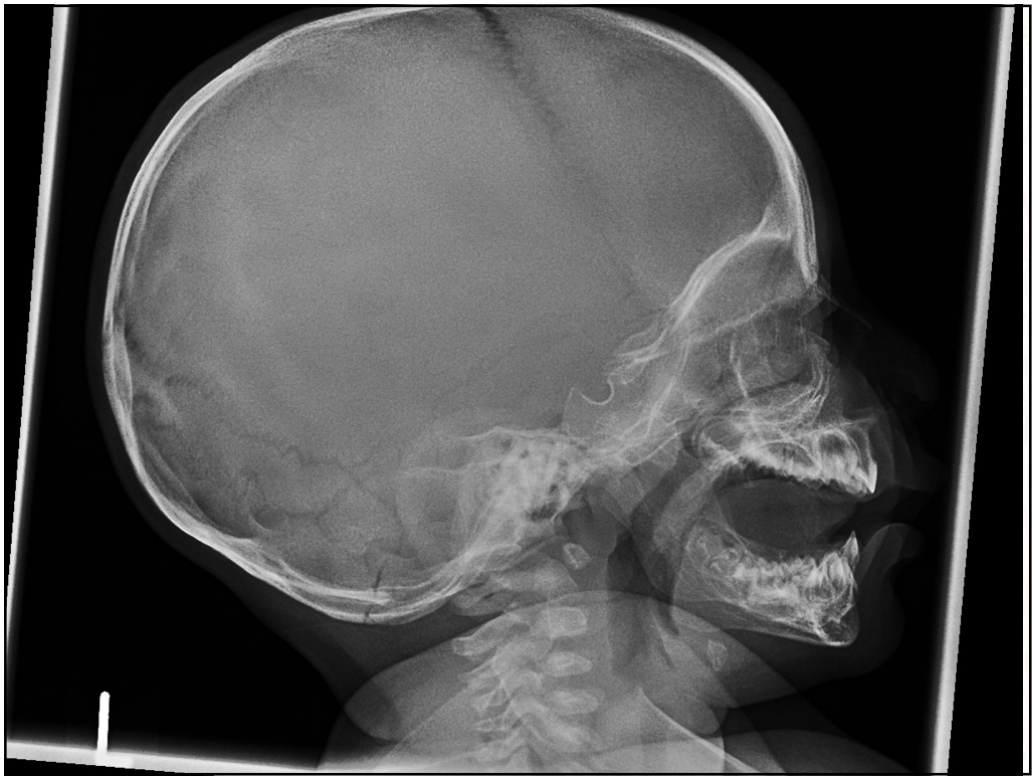
- Only 66% primary surveys were recorded as being double reported
- Why is this?
- Problem with reporting software - not easy to document 2nd radiologist's presence on the radiology information system
- No second report done - time pressure, no confident diagnosis

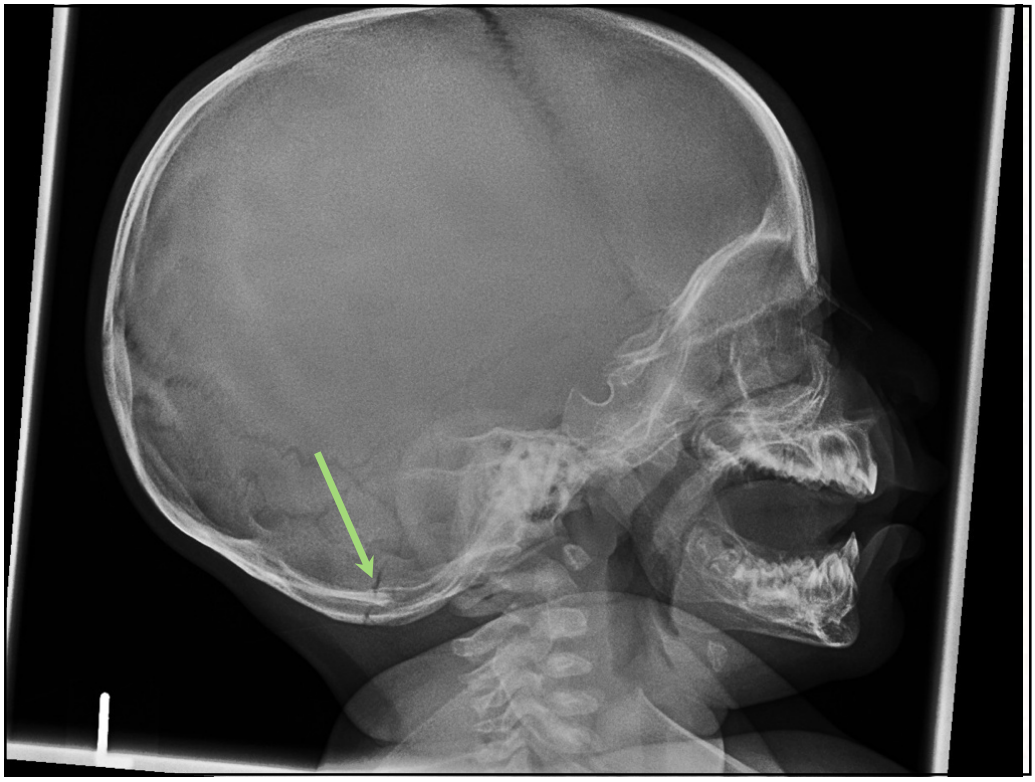
Double reporting

- 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?

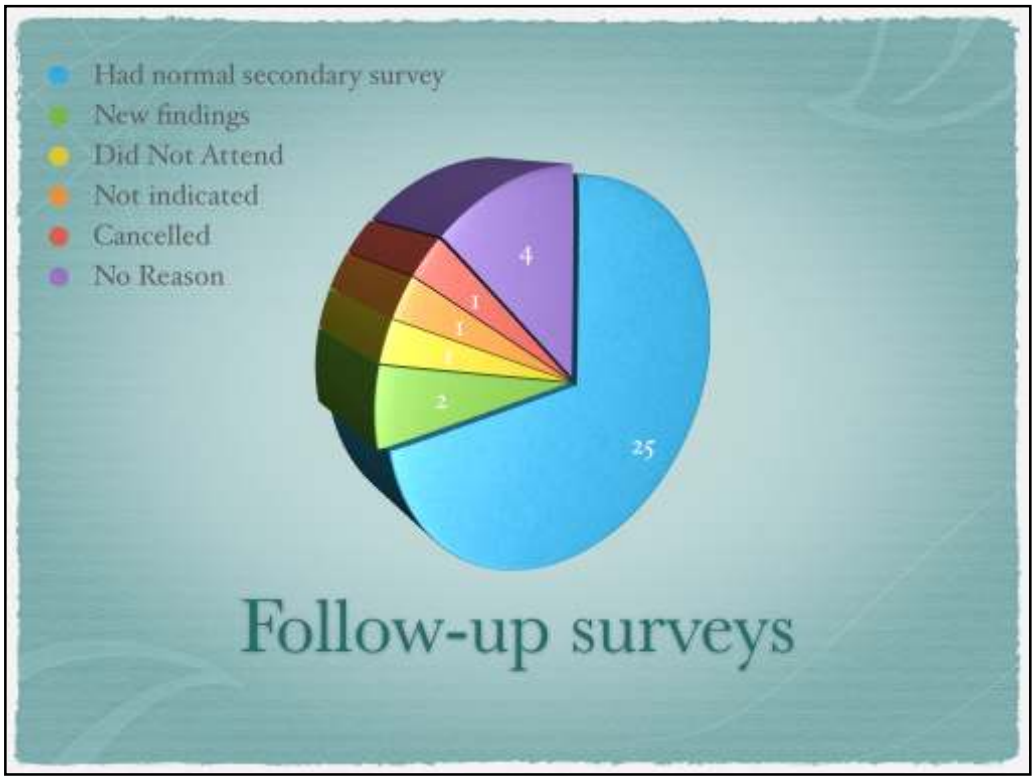




Follow-up surveys

- 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?

* Utility of follow-up skeletal surveys in suspected child physical abuse evaluations: S Zimmerman et al, Child Abuse and Neglect, Vol 29, Issue 10, Oct 2005



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
  - Worringly 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

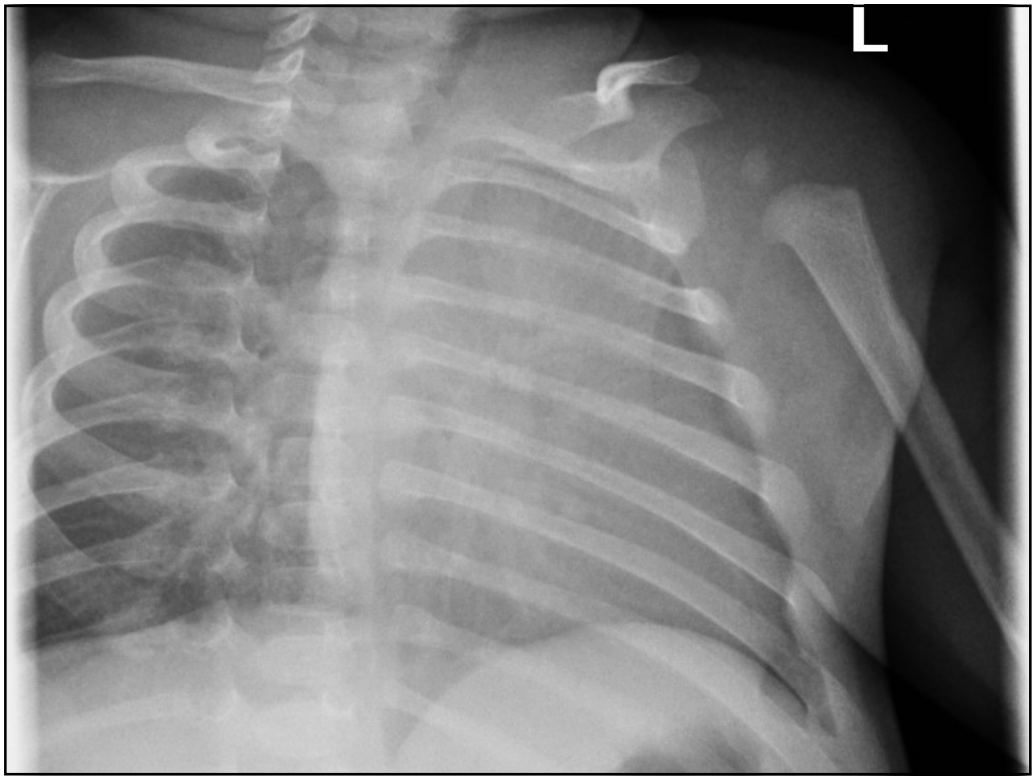
- Communication between clinical team and radiology department as to why patients are being lost to follow-up
- Reasons should be documented in the clinical notes AND on our radiological IT system

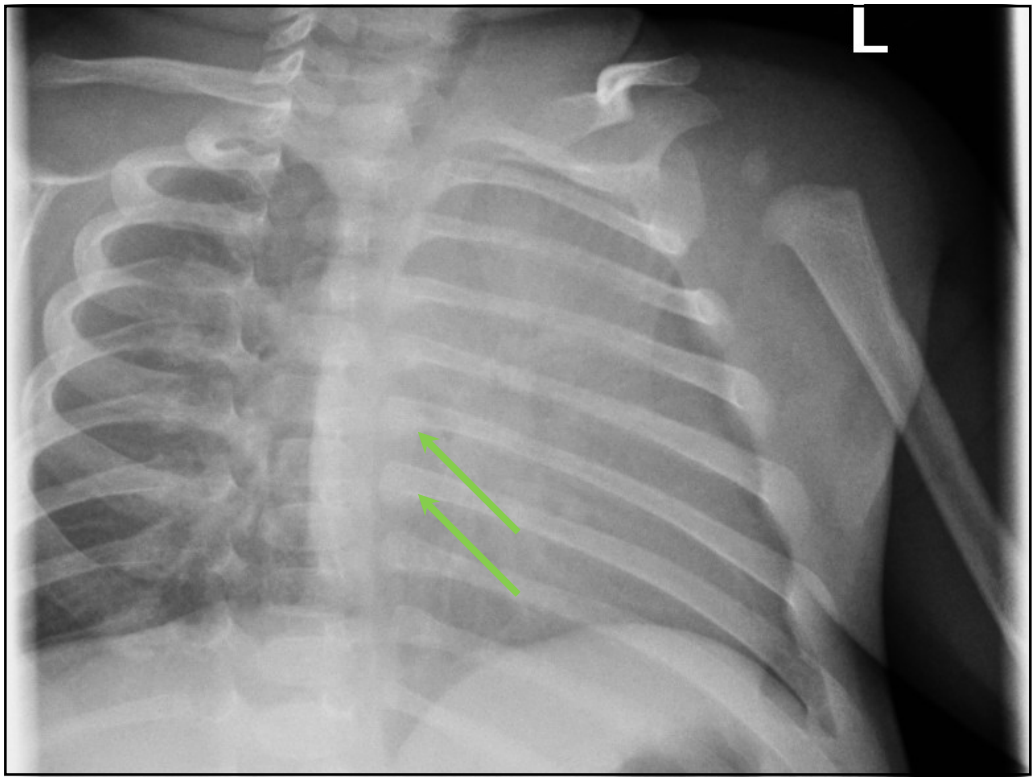
Recommendation III

- 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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