Introduction

A chronic shortage of consultant radiologists and growth in demand for radiology services represent a persistent challenge for the National Health Service (NHS) (NHS Benchmarking Network, 2019).

In February 2016 three quarters of acute NHS trusts had a backlog of unreported studies; the bulk of which were plain radiographs with ~177,000 waiting over 4 weeks for a clinical report (RCR, 2016).

Clinical reporting by appropriately trained radiographers is an established role extension in the UK (Coft, 2013).

Reporting radiographers have been shown to reduce backlog and improve reporting turnaround times with no loss of quality (Snaith et al, 2015).

Aim and method

Aim: to audit of 1000 axial examinations double reported by 2 trainee reporting radiographers and 2 consultant radiologists.

Radiographs included patients referred from A&E, OP, IP and GP sources.

The radiologist’s report provided the reference standard and was compared with the radiographer’s to assess agreement.

Sensitivity, specificity and accuracy rates were calculated over the audit period.

A&E vs non-A&E referrals were compared, errors classified and error cases were reviewed and learning points highlighted.

Results

Of the total 1000 examinations, 915 reports were in complete agreement with the radiologist’s report and the remaining 85 required review.

The overall combined radiographer accuracy, sensitivity and specificity averaged across the audit period were 96.2%, 95.2% and 97.84% respectively.

Results for each period can be seen in Fig. 1.

Performance measures were compared for A&E and non A&E referrals (Fig. 2).

Errors were classified as False Positive (FP) or False Negative (FN) (Fig. 3), and reviewed to maximise learning; 3 examples are outlined below (A,B and C).

All errors were reflected upon, 15 of which affected patient management (Table 1).

Limitations

Inter-observer variation is common in clinical reporting (Robinson et al., 1999).

Double reporting may introduce ‘determinism’ if report is read first (Brady et al., 2012).

Intra-observer variability bias: inconsistency in scoring may skew performance measures (Brealey et al, 2002).

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Conclusion

Combined performance measures in final reporting period: Accuracy 98.3%, sensitivity 96.4% and specificity 100%.

Above ‘threshold’ criteria (see Figure 1) suggested by Paterson et al. (2004) and surpasses the 92.6% sensitivity and 97.7% specificity performance indices from the literature (Brealey et al., 2005).

No significant difference in accuracy between A&E and Non A&E referrals.

Key errors reviewed and reflected upon in order to reduce reoccurrence and minimise the degree of harm to the patient (Pinto et al., 2012).