Introducing Radiographer Reporting of Chest X-rays at a Cancer Hospital

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Introduction

The Christie is a specialist cancer centre and the radiology department offers a comprehensive imaging and interventional service for the 250,000 outpatient appointments and 18,100 inpatient admissions annually. The radiology department has 15 whole time equivalent radiology consultants, 1 specialist fellow and 3 radiology specialist trainees.
As an oncology centre, chest x-rays (CXR's) are regularly performed to evaluate disease status during and after treatment, for surveillance and for the full range of clinical symptoms that affect the chest. Over 85% of the plain film examinations are CXR's.

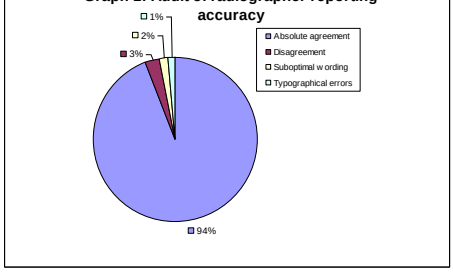
The main objectives for introducing radiographer CXR reporting in 2010 were:
- To reduce the turnaround time for chest x-rays (time from examination being performed to report being available for referring clinicians)
- To free up radiologist time to perform more complex radiology e.g. CT/MR reporting (as the waiting times for CT and MR was limited due to reporting capacity)
- To promote skill mix (RCR and SCoR, 2007) by introducing advanced practice for radiographers in reporting and to move towards the 4 tier structure (CoR, 2003)

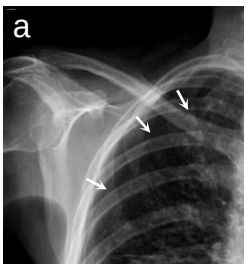
Two senior radiographers obtained the Postgraduate Certificate Clinical Reporting (Adult Chest) in Summer 2011. Due to the specialist nature of the radiology performed at The Christie, a further 12 month period of supervised reporting by a consultant radiologist was instigated. The radiographers have been verifying their own reports since May 2012 and now have 8 hours of reporting each, per week, with the same reporting allocation as a consultant. The supporting clinical governance framework includes: monthly audit of radiographer reports, attendance at the department's discrepancy, interesting cases and relevant multidisciplinary team (MDT) meetings, plus opportunities for continuing professional development and teaching radiographers/other staff groups within the trust.

Audit and Discrepancies

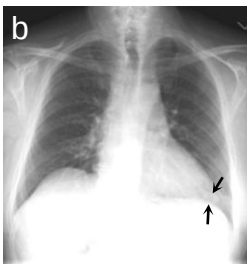
The radiographer's reports are audited monthly for accuracy and the findings from the 24 months of reporting are demonstrated in graph 1. The radiographer reporting accuracy from the audit is 97% which lies within the overall department reporting accuracy rates. In this period, there were an additional 3 reports discussed at the monthly departmental discrepancy meeting and agreed as discrepant. Examples of discrepancies are below (figs.a, b and c).

Graph 1: Audit of radiographer reporting accuracy

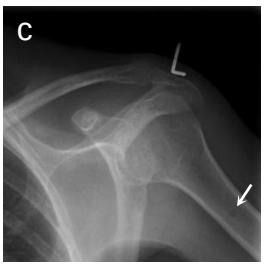




a. Status of known right apical pneumothorax not included in report



b. Hazy opacification left lower zone not included in a report for clinical query of chest infection

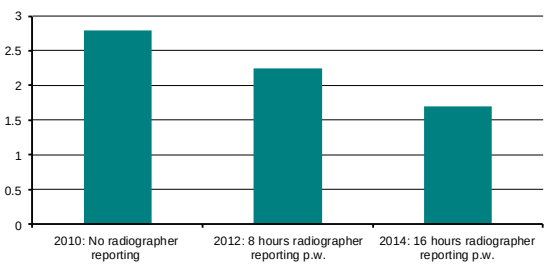


c. Small round lytic lesion in left humerus in a breast cancer patient with CT proven lytic bone metastases

Where we are now

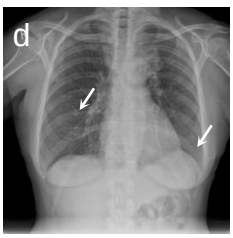
1. 34% of all CXR's performed are reported by the reporting radiographers
2. CXR's waiting 6 days or more for formal report has reduced from an average of 8.5% in 2010 to 0.15% in 2014
3. The average turnaround time has reduced since introducing radiographer CXR reporting by over a day from 2.8 days in 2010 to 1.7 days in 2014 (graph 2)
4. Flexibility to cover more CXR reporting e.g. radiologist leave changes at short notice such as sickness, reporting pressures in CT/MR scanning
5. Increased interest and awareness by general radiographers into value of optimal CXR technique and chest anatomy / pathology
6. Prepared for move towards initial clinical evaluation by all general radiographers, e.g. central line tip position
7. Awareness that CXR reporting also requires knowledge of musculoskeletal appearances
8. Gaining experience in viewing CT and PET CT scans as these may be the only images/report available to assist in analysing the current chest x-ray
9. Attending MDT and interesting cases meetings allows greater insight into disease processes, treatment and complications, which in turn enables a more specific conclusion

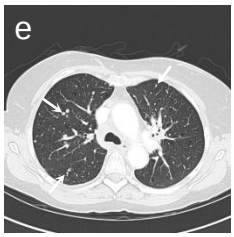
Graph 2: Average turnaround time from exam to verified report (days)



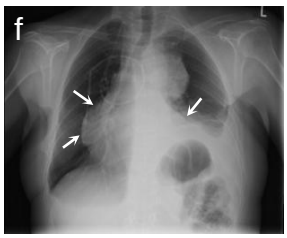
Good spots

Figs. d, e, ,f, g are examples of the 'good spots' that were identified during the monthly audit process and/or from clinician feedback.

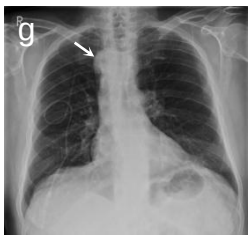




d and e. Detection of subtle nodularity on CXR suggesting pulmonary metastases in a patient with non-small cell lung cancer and confirmed as early progressive disease by CT scan



f. Short interval change in heart shape suggesting a pericardial effusion, confirmed by echocardiogram, in a patient with breast cancer. Other findings were new bilateral pleural effusions and an anterior mediastinal mass



g. Right-sided aortic arch noted as normal variant. This could be mistaken for metastatic disease in an oncology patient