Radiographer reporting: improving diagnostic capacity through team working

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Why is change required?
How radiographers can support emergency care
How radiographers can streamline lung cancer diagnosis
Impact of team-working: a case study
➢ Why is change required?
➢ How radiographers can support emergency care
➢ How radiographers can streamline lung cancer diagnosis
➢ Impact of team-working: a case study
Radiology across England

- Sustained and significant increases in radiology activity with significant reporting backlogs\(^1,2\)
- Chronic shortage of consultant radiologists\(^3\)
- Ambitious plans for improved cancer outcomes\(^4\)
- Unrelenting pressure on emergency medicine\(^5\)
- Evidence supports radiographer reporting\(^6-9\)

Why is change required?

How radiographers can support emergency care

How radiographers can streamline lung cancer diagnosis

Impact of team-working: a case study
Project 1: Emergency service

- ED activity at record levels\textsuperscript{1,2}
- Radiographer immediate reporting shown to be effective\textsuperscript{3}

\textsuperscript{1}Homerton University Hospital Quality Accounts 2014-15; NHS England HSCIC 2016; Hardy \textit{et al.} \textit{Br J Radiol} 2013;86:20120112
Project 1: Emergency service

- Radiographer-led immediate reporting of ED skeletal X-rays
- X-rays reported prior to patient leaving Radiology
- Reporting radiographer lead for all X-ray queries
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Project 2: Lung Cancer

➢ Lung cancer has poor outcomes\textsuperscript{1,2,3}

➢ Early, accurate diagnosis key to improvement\textsuperscript{2,3}

➢ Chest X-rays one of the most frequent performed radiology investigations\textsuperscript{4}

➢ Evidence supporting radiographer CXR reporting accuracy\textsuperscript{5-7}

\textsuperscript{1} Independent Cancer Taskforce 2015; \textsuperscript{2} Cancer Research UK 2015; \textsuperscript{3} ACE Programme 2017; \textsuperscript{4} NHS England DID 2016; \textsuperscript{5} Piper \textit{et al.} \textit{Radiography} 2014; \textsuperscript{6} Woznitza \textit{et al.} \textit{Radiography} 2014; \textsuperscript{7} Woznitza 2016 Thesis
Optimal

Research entry may be considered throughout the pathway.

Maximum times

Day 0

- GP
  - High clinical suspicion?
    - Yes
      - Urgent or routine CXR
        - Chest X-ray (reported before patient leaves dept., suspicious of lung cancer)?
          - Yes: CT same day/within 24 hours
          - No: CT abnormal?
            - Yes: TRIAGE (Respiratory physician triages with reported CT)
              - Lung cancer likely? (Triaged according to clinical and radiological features)
              - Yes: Fast track lung cancer clinic. Meet LCNS.
                - Diagnostic MDT
                  - Suitable for potentially curative treatment?
                    - Yes: Curative Intent Management pathway* (all tests requested at first OPA)
                      - PET-CT, meeting with LCNS and information as required:
                        - Treatment of co-morbidity, detailed lung function and cardiac assessment / ECHO
                      - No: High probability of lung cancer no biopsy (patient unfit or preference) or further discussion required?
                        - Yes: Full MDT discussion of treatment options
              - No: Urgent OPA (non-cancer or other cancer)
                - No OPA needed
                - Urgent OPA
                  - Respiratory clinic
                    - GP manages patient
                  - No: Write to GP and debrief.

Day 1

Maximum times

Day 28
Project 2: Optimal Pathway

Benefits?

➢ Patients receive results at time of test
➢ Immediate CT for cases suspicious for cancer
➢ Reduced burden on Respiratory Medicine
➢ Improved outcomes and better patient experience?
Project 2: Optimal Pathway

Considerations?

➢ Resource intensive
➢ New communication skills required for radiographers
➢ Stakeholder support
Immediate Reporting: Pilot Results

November 2016 – March 2017
1,687 CXRs
186 sessions

Immediate Radiographer
40 sessions (22%)
522 CXRs (32.7%)

Immediate Radiologist
Ad Hoc
6 CXRs (<1%)

Routine Radiologist
146 sessions (78%)
1,129 CXRs (66.9%)
Immediate Reporting: Pilot Results

<table>
<thead>
<tr>
<th></th>
<th>Immediate RR Mean</th>
<th>Immediate RR Median</th>
<th>Immediate CR Mean</th>
<th>Immediate CR Median</th>
<th>Routine CR Mean</th>
<th>Routine CR Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to Resp</td>
<td>5.5</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>5.7</td>
<td>6</td>
</tr>
<tr>
<td>Time to CT</td>
<td>1.8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6.5</td>
<td>8</td>
</tr>
<tr>
<td>Time to DMDT</td>
<td>6.5</td>
<td>8</td>
<td>2.9</td>
<td>2</td>
<td>5.8</td>
<td>6.5</td>
</tr>
</tbody>
</table>
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➢ Impact of team-working: a case study
Diagnostic Imaging: Case Study

Collaborative approach taken by the radiology department of Homerton University Hospital, London

- Integrated and established radiographer advanced practice
- Entire radiology team working at top of scope of practice

HCA → Radiographer → Advanced Practitioners → Consultant Radiologists

- 11 consultant radiologists, 14 reporting radiographers, 8 sonographers
<table>
<thead>
<tr>
<th>Modality</th>
<th>Waiting Times</th>
<th>Reporting Times</th>
<th>% Advanced Practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-ray</td>
<td>-</td>
<td>34 hours</td>
<td>74%</td>
</tr>
<tr>
<td>CT</td>
<td>1.2 weeks</td>
<td>16 hours</td>
<td>73%</td>
</tr>
<tr>
<td>MRI</td>
<td>1.7 weeks</td>
<td>72 hours</td>
<td>36%</td>
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<tr>
<td>Ultrasound</td>
<td>1.7 weeks</td>
<td>-</td>
<td>-</td>
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</table>
Contribution of Advanced Practitioners

<table>
<thead>
<tr>
<th>Year</th>
<th>Consultant Radiologists</th>
</tr>
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<tbody>
<tr>
<td>2013-14</td>
<td>3</td>
</tr>
<tr>
<td>2014-15</td>
<td>4.5</td>
</tr>
<tr>
<td>2015-16</td>
<td>6</td>
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</table>
Key Learning Points

➢ Short waiting times and rapid reporting times provide enhanced patient experience
➢ Team-based approach essential
➢ Radiographer reporting provides a significant contribution
➢ Effective, efficient, safe
➢ Essential component of patient focused service