Lung Cancer: Moving Imaging to the Front of Outpatient Pathways

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In the UK, traditional referral pathways require patients suspected of having lung cancer to be first referred to a specialist for a clinic assessment where a decision is made on whether imaging is warranted. If a CT is deemed appropriate by the lung cancer specialist, and the imaging shows evidence of lung cancer the patient is investigated and treated as needed. If not, then the patient is discharged back to their primary care provider to be first referred to a specialist for a clinic assessment where a decision is made on whether imaging is warranted.
**Lung cancer pathway**

- Streamline system by moving CT to the front of the pathway & allow radiologists to refer patients for a CT if they report a suspicious XR
  - Replicate cost saving benefits of early imaging seen in inpatient studies (*Batlle et al., 2010*)
  - Reduced time to diagnosis allows faster treatment
    - The reduction in time to treatment is not likely to have a significant effect on clinical outcome as the difference is a matter of days/weeks
  - Less patient anxiety with faster time to diagnosis

**“Straight to CT” pathway**

New referral pathway gives family doctors direct access to CT imaging if they suspect lung cancer. A radiologist vets the requests to ensure the referral is clinically appropriate.

If a radiologist suspects lung cancer when reporting a CT, the lung cancer clinic are automatically notified without waiting for a primary care provider’s referral.

If a radiologist suspects lung cancer when reporting a radiograph, MRI, or nuclear scan, a CT is automatically scheduled without waiting for a primary care provider’s referral.

Concerned Family Doctor — New referral pathway gives family doctors direct access to CT imaging if they suspect lung cancer.

Concerning CT — If a radiologist suspects lung cancer when reporting a CT, the lung cancer clinic are automatically notified without waiting for a primary care provider’s referral.

Discharge — If a radiologist suspects lung cancer when reporting a radiograph, MRI, or nuclear scan, a CT is automatically scheduled without waiting for a primary care provider’s referral.

Lung cancer clinic — If a radiologist suspects lung cancer when reporting a CT, the lung cancer clinic are automatically notified without waiting for a primary care provider’s referral.
“Straight to CT” pathway

- Analysed lung cancer referrals for a year from 6th Jan 2014 to 6th Jan 2015 after new referral pathway was brought into practice

- The new “straight to CT” pathway has three routes into the lung cancer clinic (total = 843):
  1. Concerned Family Doctor: 230
  2. Concerning XR/MR/nuclear imaging: 322
     - Plain film: 317
     - MRI: 4
     - Nuclear scan: 1
  3. Concerning CT: 291

Concerned Family Doctor pathway

- Majority of CTs requested via the concerned family doctor were normal. Of the 35% suspicious scans, 65% were proven to be cancerous by final diagnosis.
Concerning XR/MR/nuclear pathway

Majority of CTs (61%) requested via the concerned XR/MR/nuclear pathway were suspicious for cancer, with a high proportion (78%) proven to be cancerous.

Concerning CT pathway

More than half (56%) of the CTs with suspected cancer were proven to be lung cancer. This does not include the CTs that were requested via the other two pathways.

OOR = out of region
DNA = did not attend
“Straight to CT” vs old pathway

- “Straight to CT” is faster and more cost-effective
  - 42% cost saving compared to previous year
  - Faster referral means quicker diagnosis & less patient anxiety
- Role of radiologist in “Straight to CT” pathway
  - Radiologist reviews referral from family doctors to ensure appropriateness, which does add to radiologist’s workload
  - CTs marked as suspicious for cancer by thoracic trained radiologists were significantly more likely to be proven to be cancerous (78%) than CTs marked by non-thoracic trained radiologists (53%). May need thoracic trained radiologists to report CTs to maximise value
- Loss of the lung cancer clinic to filter requests for CT imaging may lead to more imaging being performed
  - However, our results show a similar number of CTs performed before and after the new referral pathway

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