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Artificial intelligence-derived software to analyse chest X-rays for suspected lung cancer in primary care referrals: early value assessment

Information for the public
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NICE has said there's not enough evidence to recommend artificial intelligence (AI)-derived software to analyse chest X-rays alongside clinician review for suspected lung cancer in adults referred from primary care. It's unclear how well the software identify the abnormal lung features that suggest lung cancer. Also, it's unclear whether they help to reduce time to diagnosis and treatment by prioritising some X-rays for review. So, the following software should only be used in research:

- AI-Rad Companion Chest X-ray (Siemens Healthineers)
- Annalise CXR (Annalise ai)
- Auto Lung Nodule Detection (Samsung)
- ChestLink (Oxipit)
- ChestView (Gleamer)
- Chest X-ray (Rayscape)
- ClearRead Xray (Riveraintech)
- InferRead DR Chest (Infervision)
- Lunit INSIGHT CXR (Lunit)
- Milvue Suite (Milvue)
- qXR (Qure.ai)
- Red dot (Behold.ai)
- SenseCare-Chest DR PRO (SenseTime)
- VUNO Med-Chest X-Ray (VUNO).

More research is needed on:

- if the software could mean that lung cancer is diagnosed more quickly
- the risks of the software reporting signs of lung cancer when a person does not have it (false-positive results) and the risks of the software not reporting lung cancer when a person does have it (false-negative results)
- whether the software works for people for whom it is harder to get high-quality X-rays, such as people with scoliosis or those living with severe obesity, or those who may particularly benefit, for example, people:
  - with multiple conditions
  - at higher risk of lung cancer
  - who are less likely to be diagnosed with lung cancer.

Software that uses AI-derived algorithms can be used to find signs of lung cancer on a chest X-ray. They can also help to prioritise X-rays for a healthcare professional to review, based on the chance that the person has lung cancer. If these software are used, a healthcare professional will always also review the X-ray for signs of lung cancer.

Questions to think about

- How well does it work compared with other tests?
- What happens if I do not want to have the tests?
- How long will the test take?
- How do I get my test results? Will there be a follow-up appointment?

Information and support

The NHS webpage on lung cancer may be a good place to find out more.

The Roy Castle Lung Cancer Foundation, 0333 323 7200, can give you advice and support.

You can also get support from your local Healthwatch.

NICE is not responsible for the quality or accuracy of any information or advice provided by these organisations.

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