

Artificial Intelligence for analysing chest x-ray images to diagnose lung cancer (provisional title)

Artificial intelligence (AI) software is available that could be used to assist healthcare professional's review and interpretation of chest X-ray images. This may help to detect abnormalities, such as pulmonary nodules, in chest X-ray images.

Pulmonary nodules are growths inside the lung. They are often found incidentally or from a chest X-ray that is done because of signs and symptoms suggestive of lung cancer. Most pulmonary nodules are benign and small, but some may grow and develop into lung cancer. Lung cancer is one of the most common types of cancer in England. People in the early stages of the disease may not have symptoms and so lung cancer is often diagnosed late.

A chest X-ray is often the first investigation when lung cancer is suspected but it does not give a very detailed image of the lungs. Pulmonary nodules may be easy to miss because of their small size, varying shape, and how close to other structures in the lung they are. Software capable of automatically detecting pulmonary nodules on X-ray images could lead to earlier lung cancer detection. An earlier diagnosis would ensure more treatment options are available and can mean better outcomes for people. The NICE diagnostics assessment programme will conduct an early value assessment pilot of artificial intelligence software for analysing chest X-ray images to help diagnose lung cancer. The assessment will map the evidence that is available on the technology, assess the potential clinical and cost-effectiveness and identify evidence gaps to help direct data generation.