CASE STUDY

IDx Lung

Early Cancer Detection in Wessex and Yorkshire

The IDx Lung project is using the SDE to help improve the early diagnosis of lung cancer.

Accessing the SDE, researchers can use me, a linked dataset, made up of blood and nasal swap test results, CT scans and patients' background information like age, gender and illness history.

Lung cancer is the third most common form of cancer. Nearly 50,000 people get diagnosed in the UK each year. GPs in some parts of England and Wales identify people aged 55 to 74 who smoke or who used to smoke and offer them Lung Health Checks…

…At the health check, blood and nasal swap samples are taken to help diagnose lung cancer. Then those get sent to partner labs for testing.

I hate putting those sticks up my nose.

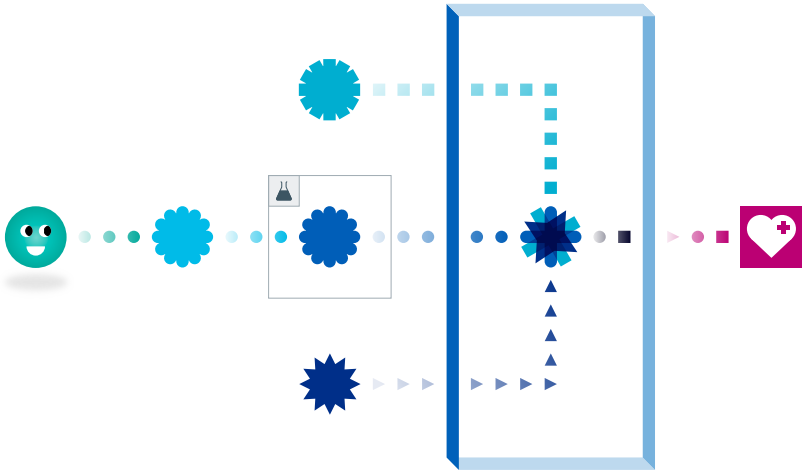
As these people get follow-up checks, including CT scans, this data goes into the SDE, allowing researchers to track what happens over time.

Why do the researchers need to know things like their age and gender?

This information helps researchers find patterns in data that might have to do with gender, age or ethnicity. It can help researchers look for health inequalities.

To make sure these patients cannot be personally identified, all this data is pseudonymised, individual details are removed. IDx Lung researchers have no way to access patient records, instead they are looking for insights that can improve early diagnosis for future patients.

By creating linked datasets like me, the IDx Lung team also helps future researchers. Improvements in early diagnosis can hopefully increase the current 10% survival rate — benefiting patients, as well as their family and friends, like you.



The process starts with **you** having **blood and nasal swab** at the testing station. Your sample results are sent for testing in the **industry partners' labs**. **Results** are then uploaded to the **SDE**. To be able to link datasets together securely, the NHS research team also uploads **demographic data** (age, smoking history, education, previous cancer, etc.) and the low dose **CT scan results** (negative, indeterminate or positive scan) to the SDE. To see if these early detection tests are useful, the clinical outcome data (lung cancer, other cancer, no cancer) will later be uploaded to the SDE in intervals for three years. The **combined data created a large dataset to work with in the future** and vitally supported **early diagnosis, improving care, and saving lives**.

Patient and Public Benefits of this research
Our team wants to find out if using tests on blood and tissue samples, as well as the CT scan results, can help to improve the diagnosis of lung cancer. This research can help patients and the public in the future by improving early cancer diagnosis and intervention. This can enhance care and save lives.

NHS Data to be used: low dose CT scan results, cancer diagnosis outcome data, demographic data and medical history (age, smoking history, education, previous cancer, etc.)

Additional Data: Results of the blood samples and nasal swabs (clinical trial data)

Background
For this project researchers worked with industry partners to trial tests for early cancer detection that uses blood samples and tissue samples taken from inside your nose (called a nose swab). To gather these samples, people undergoing a Lung Health Check were approached and asked if they were willing to participate in a study to help identify lung cancers earlier. Consenting participants provided a nasal swab and blood sample and agreed that the research team could access their CT scan results and their medical records.

What's Next?
The iDx project is looking to expand their trial to 10 more sites, recruiting another 10,000 participants from across the county for iDx Lung 2. In IDx 2 researchers are working with new partners to assess the usefulness of new tests for early diagnosis. More participants will mean more data can be collected, improving the quality and detail of the researchers' findings. Data from test results can be requested for other research users, and after the team has had time to collect follow up data, results from this long-term research study will also be made available through the SDE.

Research led by: University of Southampton Clinical Trials Unit with the iDx Lung Consortium

Test kits provided by: Oncimmune (now Freenome), Innovate (now Neogenomics), J&J and Roche

Database developed by: BC Platforms

NHS Lung Health Check is a service offered through GPs in some parts of England and Wales. It aims to help diagnose lung cancer at an earlier stage when treatment may be more successful.