

AI-assisted capsule endoscopy: Innovation in early bowel cancer detection

Case Study



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OUH
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AI-assisted capsule endoscopy

An international collaboration project between The Data Lab and 11 partners across academia and industry is using AI to help clinicians to spot the early warning signs of bowel cancer to save lives and reduce pressures on the NHS.

The Challenge

Bowel cancer is the second-most-common cause of cancer death in Scotland, with around 1,600 people dying of the disease each year.

The current detection method of a colonoscopy involves inserting a tube with a camera into a patient's colon that travels around the large bowel (colon). This procedure allows doctors to check for cancer. It is a painful and uncomfortable procedure for patients.

“Harnessing innovative technology to support the day-to-day management of patients is becoming increasingly recognised as one way that the NHS can deal with the significant challenges that it faces today.”

Professor George Crooks OBE,
Chief Executive Officer,
Digital Health & Care Innovation Centre

The Solution

Scottish health researchers are at the forefront of a €6m project, led by the Centre for Clinical Implementation of Capsule Endoscopy at Odense University Hospital, to make Artificial Intelligence-assisted capsule endoscopy a part of bowel cancer diagnostics. It will make detection less invasive for patients and potentially reduce the capacity pressures the NHS are experiencing.

Clinical Capsule Endoscopy (CCE) utilises a 'smart pill' containing cameras which, once swallowed by a patient, record images of the intestines as it passes through.

Initial investment from The Data Lab procured our data scientists to build a model to identify potential patients with a successful colon capsule endoscopy versus the more invasive traditional colonoscopy method.

The Outcomes

The diagnostic procedure is being rolled out across NHS Scotland through the ScotCap programme to support endoscopy service remobilisation.

Expected benefits include earlier initiation of treatment, less advanced staged cancers, fewer complications related to the diagnostic procedure, better patient acceptability and compliance and a significant reduction in costs from both diagnostics and treatment. It also has the potential to reduce the capacity pressures NHS health boards across the UK are experiencing.

This project could change colonoscopies for good and save our health systems a great deal of funding while efficiently managing the backlog of patients. The project poses a new way of treating patients with options for at-home treatment.



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