Comisiwn Bevan Commission

Planned Care Innovation Programme

Ariennir gan **Lywodraeth Cymru**
Funded by **Welsh Government**

Cardiff & Vale UHB, Cwm Taf UHB,
Swansea Bay UHB, Betsi Cadwalader UHB
CEDAR
National Endoscopy Programme
Industry Partner - Medtronic

Piloting Colon Capsule Endoscopy (CCE) in Wales

- **Professor Sunil Dolwani, Professor of Gastroenterology, Clinical Lead NEP - Pathways**
- **Dana Knoyle, Managerial and Nurse Lead for Clinical Pathways, National Endoscopy Programme**
- **Naomi Davies, Senior Project Manager, National Endoscopy Programme**

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Background and Challenges

- Colonoscopy is used to diagnose lower gastro-intestinal (LGI) conditions such as colorectal cancer (CRC), inflammatory bowel disease, pre-cancerous conditions such as bowel polyps. However, it is an invasive procedure with significant demand on service and operator resources and time and length of time to achieve competence/ expertise.

- **Prior to the onset of the COVID-19 pandemic, the numbers of patients referred for endoscopy exceeded capacity across NHS Wales significantly, particularly colonoscopy. This situation has worsened** and patients in Wales currently face long waiting times for diagnostic procedures such as colonoscopy, leading to poorer outcomes.

- **Significant workforce pressures and marked variation between health boards (HB) in diagnostic capacity** and clinical expertise in new technology adoption.

- Colon Capsule Endoscopy (CCE) could contribute to solutions to colonoscopy capacity issues within the LGI cancer pathway, by providing another diagnostic option for clinicians to offer patients waiting for a colonoscopy.

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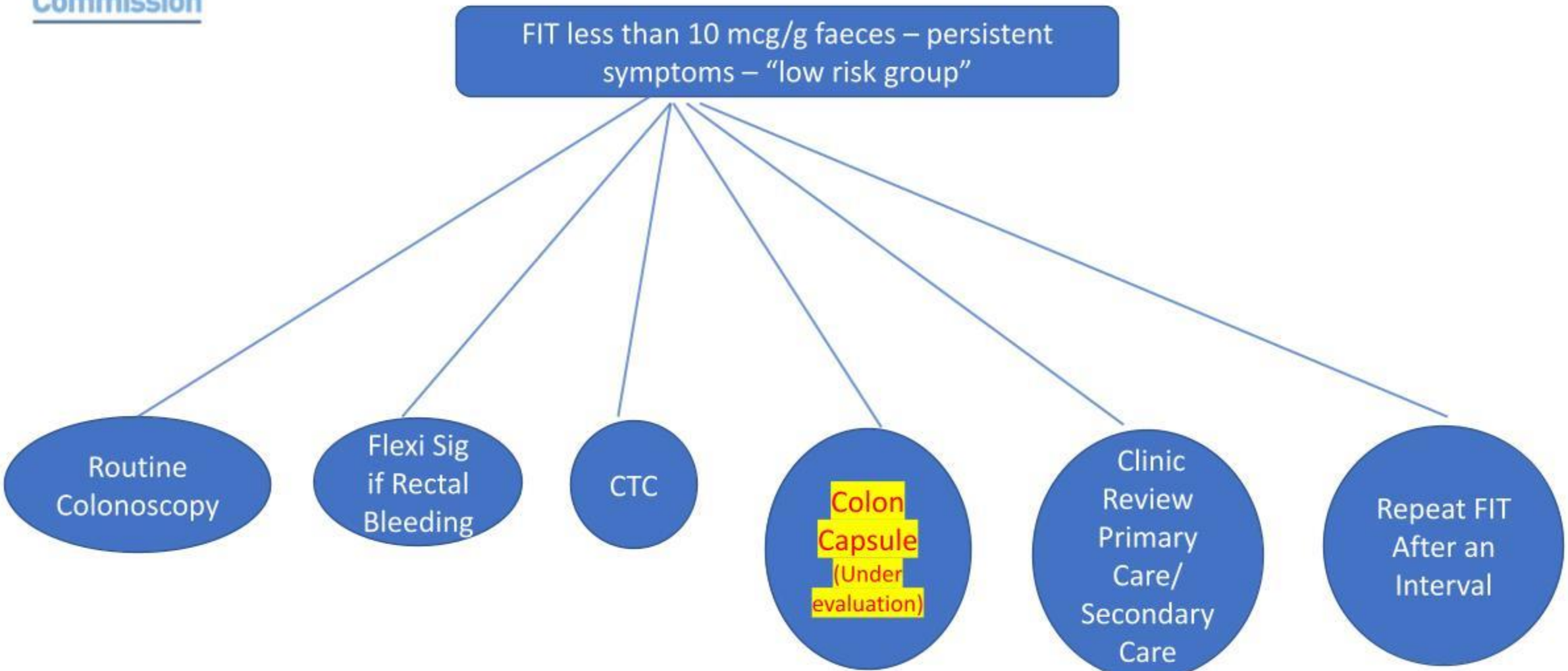
USC Referral from Primary Care – Lower GI Pathway Symptoms



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Aims and Objectives - Initiate/ Support/ Evaluate

- **Support HBs to establish CCE services for LGI patients** and explore translation of initial pilots into sustainable pathways.

- Pilot CCE as a novel intervention to **explore its potential impact with workforce pressures across clinical roles and HB geographical and demographic boundaries.**

- **Enable meaningful data collection, comparison, and analysis to inform service pathways** and associated patient outcomes as well as the impact on the service.

- **Evaluate an All-Wales Information Governance (IG) model** to enable equitable, efficient and safe diagnostic procedures for patients undergoing CCE.

- **Trial a new national model of working that enables cross HB reporting** to help with workforce pressure.

- **Improve patient experience**.

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Project Approach - Coordinated and Collaborative

- Expressions of i**nterest** - all HBs invited - 4 responded positively.
- Identification of HB teams and supporting **training** for consultants & specialist nurses.
- Supporting **equipment, software & consumables** in each HB.
- **Dynamic engagement** - setting up **working groups** with regular meetings, clinical, managerial and IT & IG - feedback from all 4 HB teams, regular weekly meetings with **industry partners** (Medtronic).
- **Standardised national approach** - clinical criteria, patient information sheets, IG – Data Protection Impact Assessment (DIPA) forms, evaluation datasets.
- **Patient and staff feedback surveys –** CEDAR unit.

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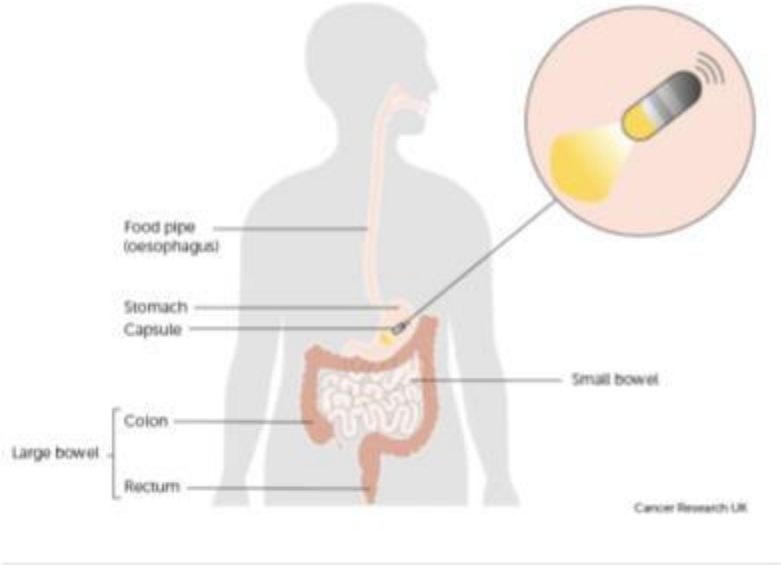

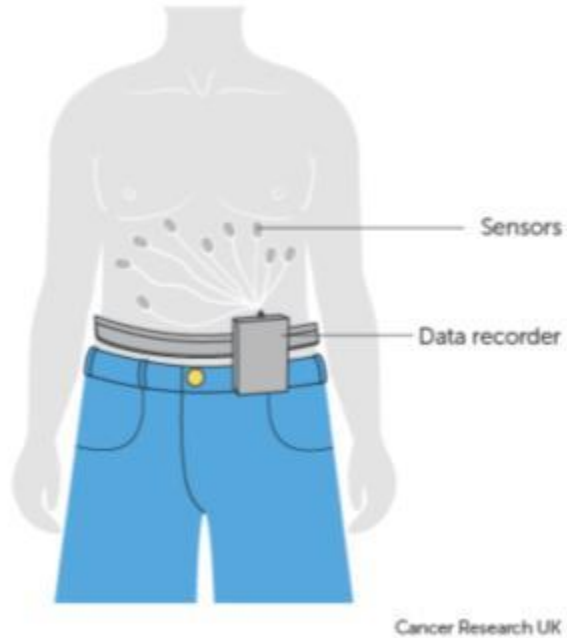

Pill camera - swallowed with a sip of water, prior bowel prep, takes thousands of images, passed normally, recorder belt worn around the waist,
downloaded, read on computer, reported by expert.

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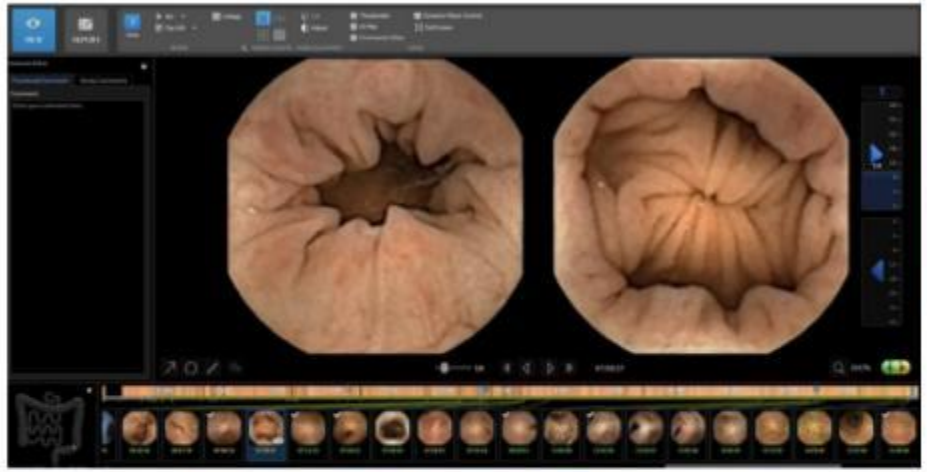

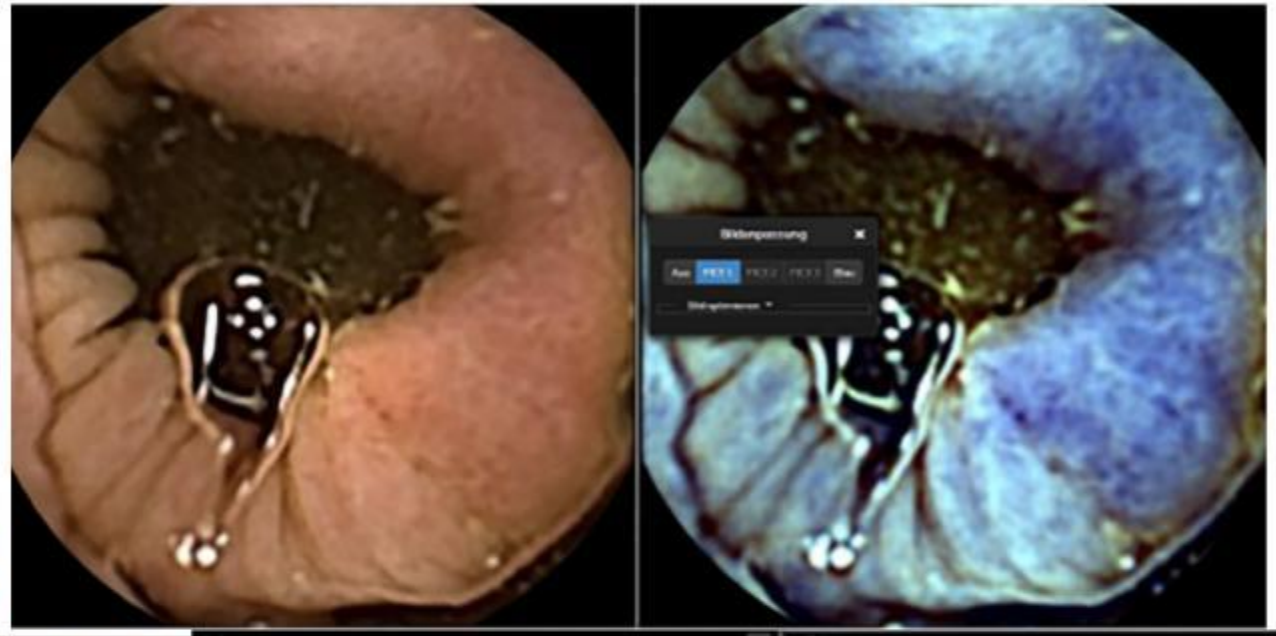

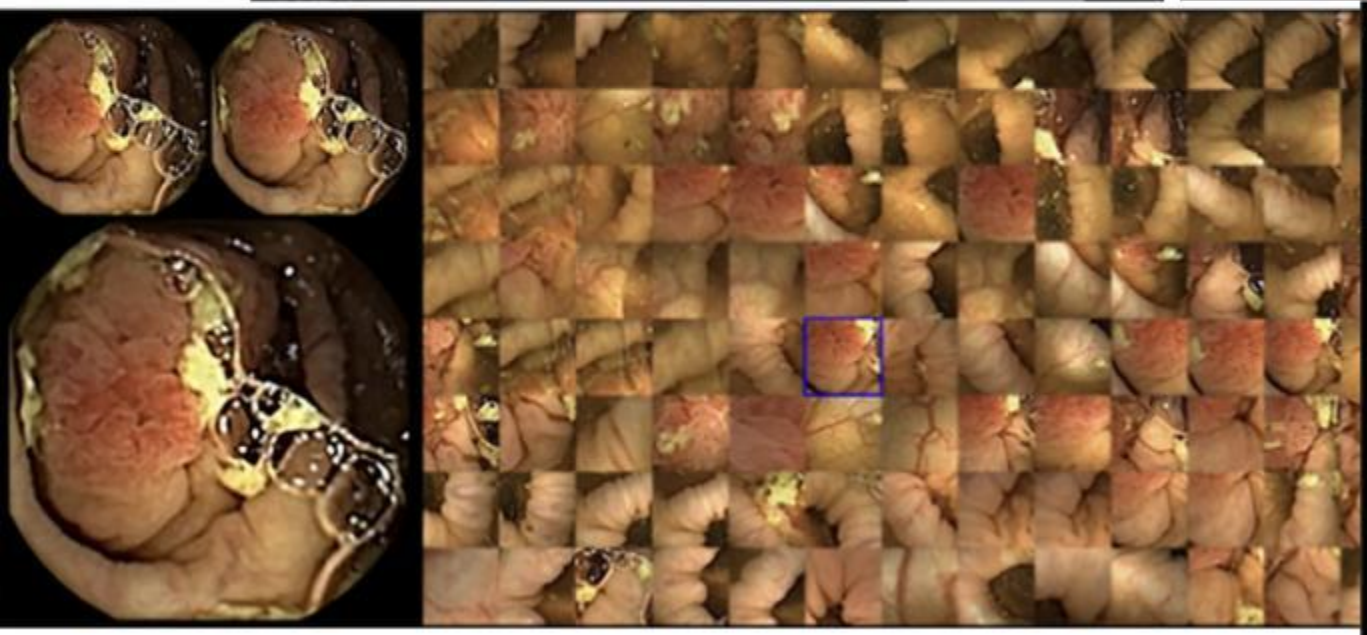

Therapeutic Advances in Gastrointestinal Endoscopy Volume 14, January-December 2021

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Project Outcomes

- 86% of patients had adequate bowel prep.
- 69% of patients completed the procedure (most common reason if incomplete - removing the sensor belt too soon).
- **57% - Significant bowel disease detected** (IBD/ polyps/ cancer/ diverticulae/ haemorrhoids).
- Action following CCE – Discharge to GP – 21%

  Back to referrer/secondary care – 17%

  FU in clinic – 12%

  Further investigation – 36%
- **Demonstrable potential for impact on colonoscopy demand and workforce pressures.**
- **4 HBs have now established quality assured colon capsule services in the pilot.**
- Remote reader - challenges with IG, cross HB working, contractual issues.

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Patient Impact and Feedback Surveys - Positives

- **Patient responses were very positive about the pilot** with all reporting that their overall experience of the pilot was *good* or *very good*.

- The majority of patients responded that they **trusted the procedure before having it,** with even more trusting the procedure afterwards.

- All patients responded positively with regards to how they were treated during their appointment, the instructions they were given, and that they were treated with respect.

- In regards to the use of Artificial Intelligence (AI), most patients were happy to at least allow AI to read images and the report reviewed by a specialist.

- Patients appreciated being able to leave the hospital and go where they wanted while the capsule passed through.

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Patient Surveys - Where to Improve

- Improvements could be made to the written information provided to patients as not all agreed it was clear and easy to follow, and that there was too much information provided within the booklet.

- There were some reservations about the comfort of the belt and recorder, with some patients reporting that it felt uncomfortable to wear.

- Some patients expressed anxiety and concern before having the test, however these feelings were gone once the patient had been through their appointment and test.

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Staff Impact and Feedback Interviews - Positives

- Overall, staff were positive about the pilot and about the future of CCE in Wales.
- There was a recognition that CCE has an important role in future endoscopy care, and it **should be extended to all HBs in Wales.**
- Staff felt if CCE can be implemented well in Wales, it **certainly has a role in reducing waiting lists** and providing patients with an alternative to traditional colonoscopies, where appropriate.
- There was **particular positivity about the use of specialist nurses being able to read images**.
- Staff were generally positive about the future use of AI, although most agreed we are far away from the full use of AI in CCE.

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Staff Interviews - Considerations

- Staff mentioned various areas that need to be considered when it comes to rolling out the pilot everywhere.

- The understaffing in the nursing workforce will impact the ability to recognise the full potential of CCE. Considerations around nurse training for CCE need to be made as well, especially with regards to reading images.

- In regards to cross boundary working, considerations need to be made regarding IG and IT systems.

- Some staff also raised concerns regarding the knowledge and awareness of CCE. **Efforts need to be made to ensure clinicians recognise CCE as a viable pathway for their patients.**

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What Next?

- This pilot has enabled Wales to be at the top table - **Joint application with NHS Scotland and NHS England to the NIHR -**

The diagnostic accuracy of CCE compared to standard colonoscopy for the detection of significan bowel disease - The COLO-CAP Study.

- Our **unique/novel aspects in Wales.**
- **Reducing variation through a national standardised approach.**
- **Remote reader - creating a pool of multi-professional experts working across HB boundaries.**
- Initiating development and adoption of technology in a meaningful evidence-based manner (low risk cases for implementation prior to high-risk cases with less value of CCE).
- **Top reflection - learning point - fund and support the change not just the technology (Health Foundation).**

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Reflections

Significant Barriers/ Challenges

- IT/ IG processes and data protection impact assessments across 4 HBs.
- Recruitment numbers - addressing colleague anxieties, getting confidence in the service.
- Staff capacity and availability.
- Persuading continuity of adoption beyond the pilot phase in individual HBs **- invest to save - longer term perspective rather than short term cost.**

Enablers

- **Strong clinical engagement** from the outset - working groups.
- Working relationships, reporting structures and communication channels already in place between the National Endoscopy Programme and HBs.
- Project and programme management approach.
- Effective and transparent working relationship with industry partner - Medtronic.
- National, standardised, evidence-based approach thinking through the pathway & not just the technology a

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Conclusions

- **The pilot found that at least a third of patients could be discharged without further investigation following CCE** and the majority **(57%) of patients had a more rapid diagnosis of pathology** detected than if they had been on the waiting list for a colonoscopy instead.
- There seems a **high risk of the effort, resource and learning from the pilot being lost if not supported as an ongoing service** by all HBs given the clear benefit to patients and the health service.
- This pilot has had several other benefits in demonstrating that a single unified co-ordinated and **collaborative approach to innovation and new technology would be likely to be far more effective than an individual HB approach.**
- **National IG processes, staff contracts and guidelines for implementation** would ensure an efficient and agile cancer diagnostics new technology adoption for the NHS in Wales.
- **Skilling and development of our workforce with innovative cross HB working seems preferable to outsourcing/ insourcing to private providers and more cost-effective** in the longer term.

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Outputs and Accolades

Project and approach presented at -

- Welsh Association for Gastroenterology and Endoscopy - Annual Conference - October 2022
- Wales Cancer Network - Bowel Cancer Summit - January 2023
- International Colon Capsule Conference - April 2023

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Thank you to the Team

Health Board Colon Capsule Teams

- Betsi Cadwaladr - Dr Jonathan Sutton & Sandra Ewing
- Cardiff & Vale - Dr Jeff Turner, Dr Lawrence Sunderraj & Angela Green
- Cwm Taf Morgannwg - Dr Bee Lee and Diane Morgan
- Swansea Bay - Dr Mesbah Rahman & Frances Payne
- **CEDAR**: Dr Samuel Bird and Dr Kathleen Withers
- **The National Endoscopy Programme:** Professor Sunil Dolwani, Dana Knoyle, Naomi Davies and Dr Hayley Heard

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