GREEN GASTROENTEROLOGY
CHALLENGE

2026 GREEN GASTROENTEROLOGY CHALLENGE

Impact Report

BRITISH SOCIETY OF GASTROENTEROLOGY

CENTRE for SUSTAINABLE HEALTHCARE
inspire • empower • transform

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BACKGROUND

In February 2026, The Centre for Sustainable Healthcare (CSH) partnered with the British Society of Gastroenterology (BSG) to commence the 2026 Green Gastroenterology Challenge, fully funded by Micro-Tech UK. The Challenge is a national adaptation of the Centre for Sustainable Healthcare's Green Specialty Challenge and Green Team Competition – an award-winning, tried and tested leadership and engagement programme designed to transform healthcare by cutting carbon, improving patient care and staff experience, and saving money

CSH has worked directly with six clinical gastroenterology teams across UK, to add sustainable value within their service via mentoring in the use of Sustainability in Quality Improvement (SusQI) methodology. SusQI is an approach to improving healthcare in a holistic way, by assessing quality & value through the lens of the sustainable value equation (Figure 1). The participating teams were encouraged to consider each element of sustainable value to identify high impact improvement ideas then plan, implement & measure the impact of their projects.

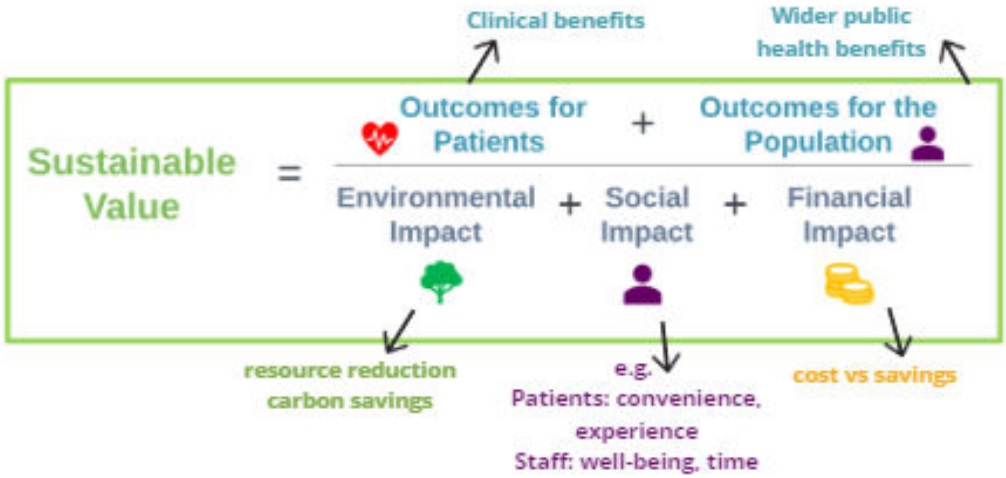
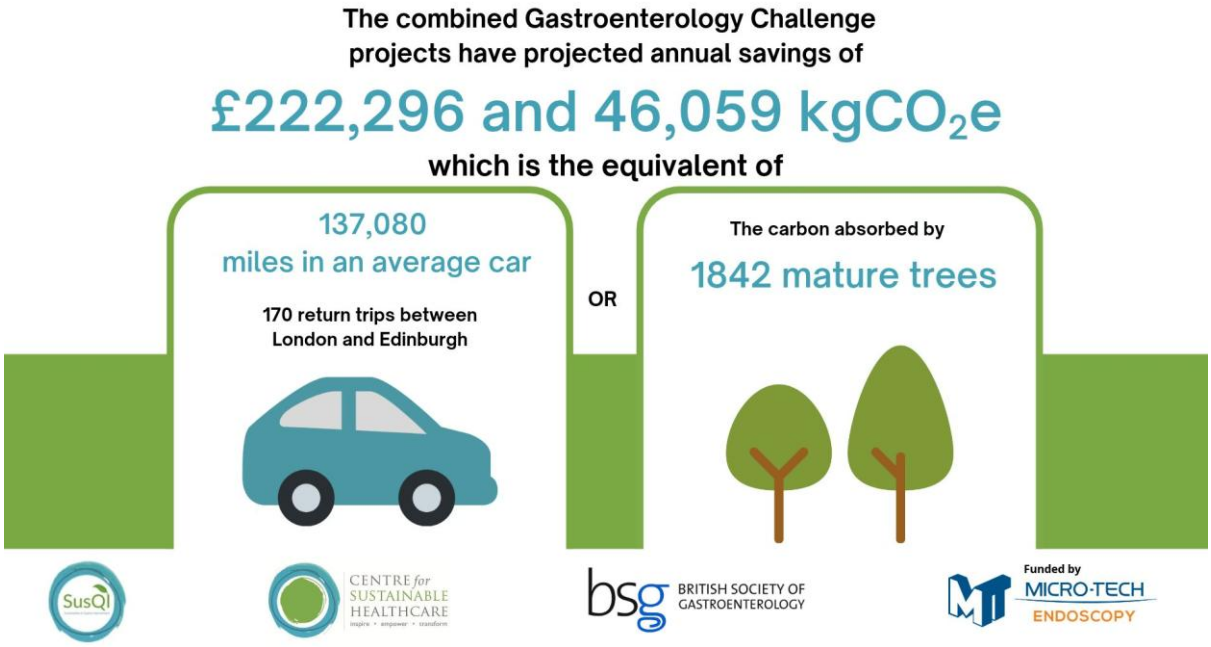


Figure 1. Sustainable Value Equation Source: Centre for Sustainable Healthcare

At the November 4th Showcase Event, the teams presented their projects, including the anticipated savings & opportunities to scale and spread, to their fellow teams, a judging panel and an audience representing relevant gastroenterology organisations and clinical networks.

TRUST WIDE - POTENTIAL ANNUAL SAVINGS



For a breakdown of savings & impact across the sustainable value equation, please see Appendix 1.

"It has been a pleasure to work with CSH over the last few months and to be part of this programme. This afternoon has highlighted the incredible innovation and commitment across all the participating teams, and it has been inspiring to hear about the important work being delivered. Having reviewed the reports, it is clear the teams have gained valuable insights through both the challenge itself and the mentoring and carbon footprinting support provided by CSH. We are extremely grateful to Micro-Tech for funding this initiative. At the BSG, we have wanted to launch a sustainability challenge of this kind for several years, and this sponsorship has made it possible. We would also encourage all participants to submit abstracts to BSG LIVE 2027 so that the wider gastroenterology community can learn from and celebrate the fantastic work that has been achieved through this programme."

Dr Sandeep Siddhi

Consultant Gastroenterologist, Aberdeen Royal Infirmary, BSG Sustainability Lead and Green Endoscopy Clinical Lead

"It's been a real pleasure to be part of the Green Gastroenterology Challenge and to see the creativity, passion and commitment behind these fantastic initiatives. What excites me most is their potential to grow beyond individual teams and make a real difference for patients, healthcare staff and the planet. It's wonderful to see sustainability being brought to life in such practical, novel and innovative ways".

Lucy Brown

Development Director, Centre for Sustainable Healthcare

COMPETITION ENTRIES - INDIVIDUAL PROJECT CASE STUDY REPORTS

Please click the links below which will take you to the project summary and report hosted in the CSH Sustainable Healthcare Resource Library. The resource library is hosted in the CSH Sustainable Healthcare Networks, which bring together patients, clinicians, researchers, educators, students, and managers interested in Sustainable Healthcare. They provide a platform for sharing resources, knowledge, and ideas and for connecting with like-minded individuals from around the world.

1. *Reducing unnecessary liver function testing*, **North Cheshire and Mersey NHS Foundation Trust.**

2. Evaluating methoxyflurane (Penthrox) as an alternative to Entonox for colonoscopy in the Scottish Highlands, **NHS Highland.**

3. *Improving Endoscopy Pre-assessment: Strategies to reduce failed bowel preparation,* **Barnsley Hospital NHS Foundation Trust**

4. *Biodegradable Stents in ERCP,* **Aberdeen Royal Infirmary - NHS Grampian**

5. *Swapping intravenous biological agents, to home sub cut regime for inflammatory bowel disease*, **Newcastle Hospital NHS Foundation Trust.**

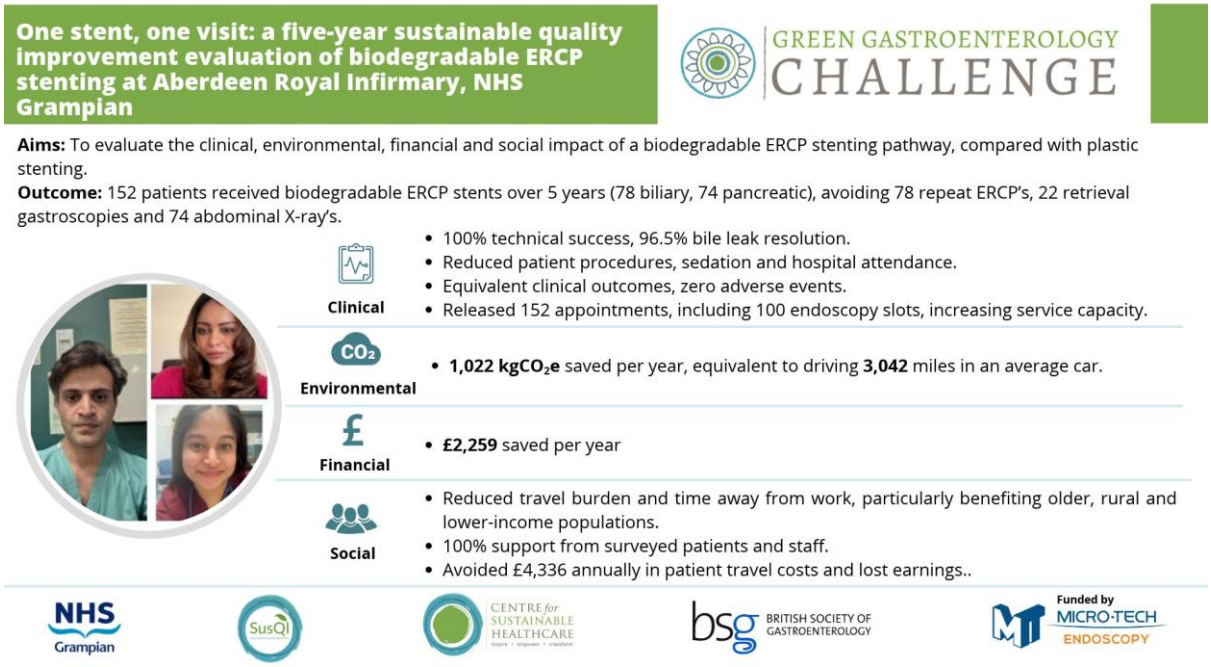
6. *Swapping Entonox to Penthrox for colonoscopies*, **Practice Plus Group.**



WINNERS: Aberdeen Royal Infirmary – NHS Grampian
HIGHLY COMMENDED: Newcastle upon Tyne NHS Foundation Trust and NHS Highlands.

Congratulations to the WINNING team, the Aberdeen Royal Infirmary, NHS Grampian team, led by Salman Idrees Bhutta, Subita Suparmanian and Akshita Agrawal.

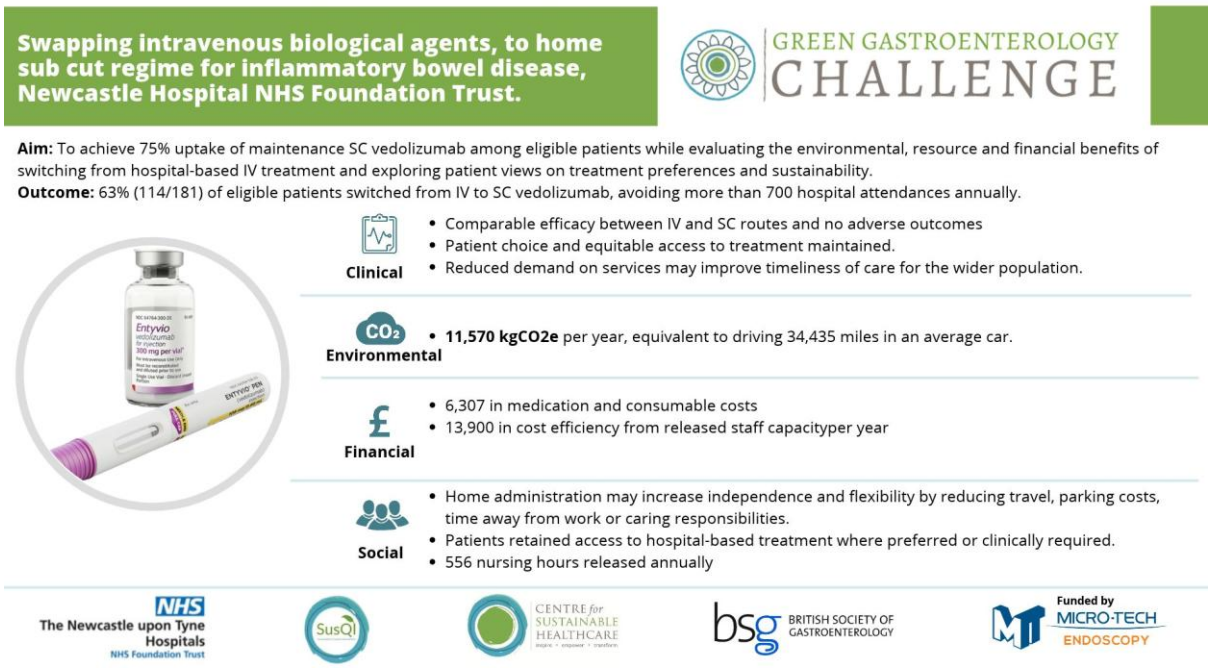
This project is a fantastic example of innovation in practice, introducing a truly novel treatment approach that is unique within its field. The team has taken a notably conservative approach to measuring impact, and it is likely that the true carbon and financial savings are even greater through the avoidance of unnecessary procedures. Most importantly, this work embodies the principles of value-based healthcare, placing patients at the centre of decision-making while simultaneously delivering environmental and economic benefits. We at CSH look forward to following the team's progress and seeing how this pioneering approach continues to improve patient outcomes and sustainable healthcare delivery.



"Being part of the Green Gastroenterology Challenge has been a truly rewarding experience. It brought us together as a team, allowing us to share ideas, learn from one another and look at our everyday practices differently. It encouraged us to explore realistic ways to make endoscopy greener without compromising patient care and reminded us that even small changes can make a meaningful difference. Winning was an unexpected bonus, but the teamwork, shared learning and experience made it truly special."

Subita Suparmanian
Aberdeen Royal Infirmary

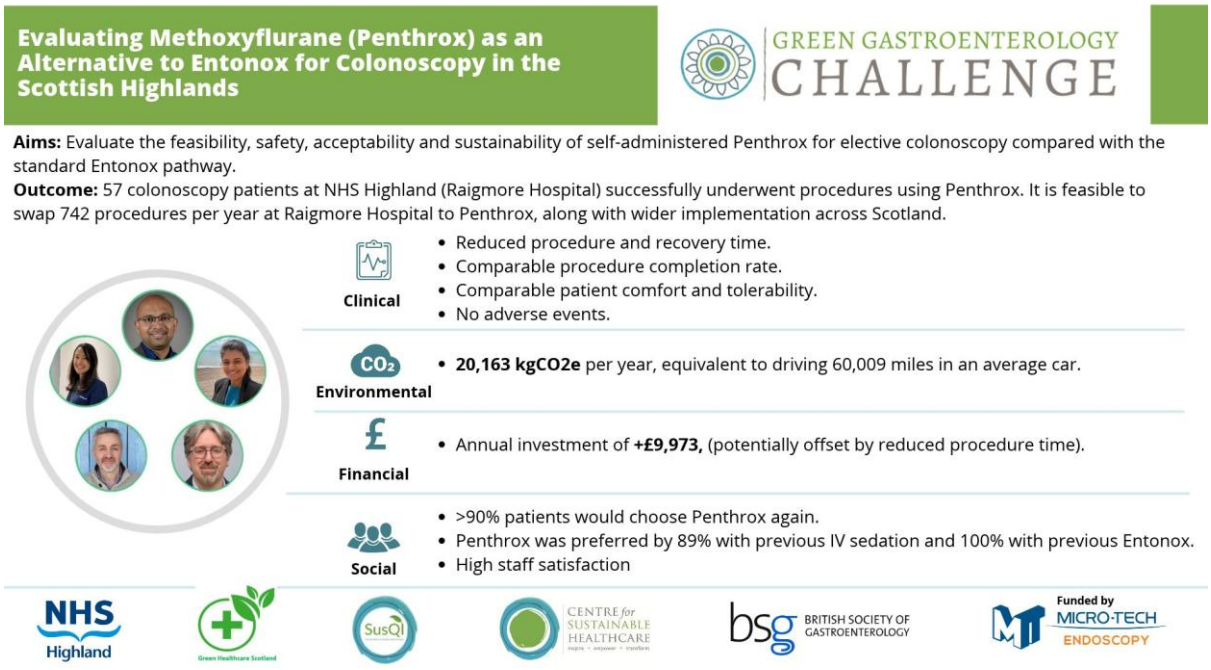
Congratulations to the highly commend team from Newcastle upon Tyne NHS Foundation Trust, led by Sophie Young and Jamie Catlow.



As busy clinical staff, the Centre for Sustainable Health really empowered us to take an idea into practical carbon costed project. You genuinely broadened the scope of our idea to think beyond the immediate clinical and financial changes to the wider social impacts.
We are also hugely thankful for the technical support from the team, being able to get a tangible estimate for the carbon benefit has been great for disseminating this work across our team and trust, and hopefully nationally!
Roll on the next project!

Jamie Catlow, Consultant Gastroenterologist

Congratulations to the highly commend team, the NHS Highlands team, led by Mr George Neelankavil Davis, Ms Sumathi Nadikuditi , Ms Leila Chandler, Mr Alan Grant and Dr Kenneth Barker.



Our multidisciplinary team at Raigmore Hospital, Inverness and Green Healthcare Scotland are incredibly proud to be recognized as Highly Commended in the Green Gastroenterology Challenge 2026. This achievement reflects our deep commitment to collaborative leadership and the immense value we place on cognitive diversity within our team. By scaffolding our approach—empowering every team member to contribute their unique perspectives—we have successfully transformed high-level sustainability goals into tangible, greener everyday practices across our clinical pathways. It is a true testament to what intentional team building can achieve in the pursuit of low-carbon healthcare.

George Neelankavil Davis

Trainee Endoscopy Lead, NHS Highlands and RCSEd Sustainability Committee Member

NEXT STEPS

Having run these pilot projects, we encourage the teams to build on this initial phase by embedding and spreading their projects, and/or continuing to work towards their longer term aims. The BSG would like to encourage the teams to submit abstracts for the BSG live 2027 to present in the sustainability symposium and nurses committee https://live.bsg.org.uk/abstracts/ (live 2nd December 2026 – 25th January 2027). We encourage teams to connect with their organisations sustainability, improvement and management teams, to seek ongoing support to spread suitable projects to other areas.

ACKNOWLEDGEMENTS

CSH would like to thank the teams for all their enthusiasm, dedicated work & creativity in devising and completing their projects.

Thank you to:
Include relevant thankyous e.g.

- Gareth Bullen, from Micro-Tech UK for generously funding the Green Gastroenterology challenge.
- The BSG for partnering with the CSH to support this challenge, including Dr Sandeep Siddhi, Nikki Husbands, Dr Leigh Donnelly and Professor Anjan Dhar.
- Harriet Gordon – President of the BSG for delivering the opening welcome and endorsing the challenge.
-

Thank you to our judging panel for your time and keen interest in the projects.

- Dr Sandeep Siddhi, Consultant Gastroenterologist, Aberdeen Royal Infirmary, BSG Sustainability Lead and Green Endoscopy Clinical Lead.
- Lisa Roffey-Harris, Nurse Lead - Strategy & Innovation, Midlands Endoscopy Training Academy, BSG Nurses Section Committee - Deputy Chair
- Lucy Brown, Development Director, The Centre for Sustainable Healthcare

Thank you to Dr Matt Sawyer, Senior Sustainability Analyst CSH, for his careful and highly skilled work in carbon footprinting. Matt supported the teams in carrying out the carbon footprinting and equipped teams with the knowledge and tools to carry out future project calculations for projects. Carbon calculations are essential to integrated project reporting and make plain the true cost and impacts of services to allow more responsible decisions to be made in healthcare organisations.

POTENTIAL ANNUAL SAVINGS

The following table provides detail on the **annual** impacts from the 2026 Green Gastroenterology Challenge. Savings in black text are based on actual changes implemented and post-change data projected across 1 year. Savings in blue text are based on pending or proposed changes with impact modelled on available data and assumptions.

Project	Scale of change	Financial Outcomes	Environmental (kgCO2e) Outcomes	Social Outcomes	Clinical Outcomes
Reducing unnecessary liver function testing, **North Cheshire and Mersey NHS Foundation Trust.**	Unnecessary testing reduced by 25% (3,680) across three pilot wards.	6,698	1,266	• 93% (14/15) patients felt blood testing frequency was acceptable, but supported reduction based on clinical judgement. • 80% (46/57) staff felt LFTs were requested more than necessary and that reducing unnecessary requests should be a priority. • Education on testing guidelines was the most commonly identified solution.	• Fewer unnecessary investigations • Reduced potential for harm from testing unlikely to influence patient management
Reducing Entonox use in colonoscopy, **NHS Highland.**	742 colonoscopy patients at NHS Highland (Raigmore Hospital)	investment of +£9,973 (potentially offset by reduced procedure time)	20,163	• Highly favourable patient satisfaction feedback across all domains. • >90% would choose Penthrox again. • 89% of patient's with IV sedation experience, preferred Penthrox. • High staff satisfaction	• Reduced procedure time (2.3 mins) and recovery time (3.2 mins) with Penthrox. • Comparable procedure completion rate. • Comparable patient comfort and tolerability. • No adverse events.
Reducing the rate of failed lower GI procedures, **Barnsley Hospital NHS Foundation Trust**	Failed procedures reduced from 167 (11%) to 64 (7%).	208,407	3,024	• Fewer failed procedures reduces likelihood of patients having to take time away from work or caring responsibilities, repeat an unpleasant preparation, travel again to hospital and experience continuing uncertainty while awaiting diagnosis. • Staff and patients strongly supported reducing waste	• Service now meets the endoscopy Joint Advisory Group (JAG) target of fewer than 10% unsuccessful procedures. • Face-to-face pre-assessment improved opportunities for personalised patient education and support. • More responsive and effective care can be offered with 4.2 endoscopy sessions per month released, reducing waiting time from 41 to 26 days.

Project	Scale of change	Financial Outcomes	Environmental (CO2e) Outcomes	Social Outcomes	Clinical Outcomes
Biodegradable Stents in ERCP, **Aberdeen Royal Infirmary - NHS Grampian**	152 patients received biodegradable ERCP stents over 5 years (78 biliary, 74 pancreatic), avoiding 78 repeat ERCPs, 22 retrieval gastroscopies and 74 X-rays	2,259	1,022	• Eliminates need for a second procedure and additional hospital visit for every patient. • Reduced travel burden, time away from work, and disruption for patients, particularly benefiting older, rural and lower-income populations. • All surveyed patients (10/10), nurses (10/10) and doctors (2/2) supported the biodegradable stent pathway. • Returned an estimated £7,190 in avoided travel costs and £14,489 in avoided lost wages to patients over 5 years.	• 100% technical success • Maintained outcomes consistent with published evidence, including 96.5% bile leak resolution and no stent-related serious adverse events • Reduced exposure to additional sedation, procedural risks and hospital attendance from eliminated procedure. • Delivered equivalent clinical outcomes while simplifying the care pathway. • Released 152 hospital appointments, including 100 endoscopy slots, potentially improving service access for other patients.
Swapping intravenous biological agents, to home sub cut regime for inflammatory bowel disease, **Newcastle Hospital NHSFT**	63% (114/181) patients switching from IV vedolizumab; to home SC administration, avoiding over 700 hospital attendances annually.	6,307 in medication and consumable costs 13,900 in cost efficiency from released staff capacity	11,570	• Home administration may increase independence and flexibility for suitable patients, e.g., reduced need for travel, parking costs and time away from work or caring responsibilities. • Patients retained the option of hospital-based treatment where preferred or required, e.g. due to valuing professional support, not confident self-administering treatment, additional support needs • Released 556 nursing hours annually, increasing service capacity for other patients.	• Comparable efficacy expected between IV and SC Vedolizumab. • No clinical issues related to switching were identified. • Patient choice and equitable access to treatment were maintained. • Reduced demand on infusion services may improve timeliness of care for the wider patient population.
Swapping Entonox to penthrox for colonoscopies, **Practice Plus Group.**	Two endoscopy units replaced Entonox with Penthrox for colonoscopy and flexible sigmoidoscopy. Modelled for 50% patients (1,464) per year).	Annual investment of + 5,302 (potentially offset by reduced repeat procedures and recovery requirements	9,014	• Patients reported Penthrox was easy to use and effective for pain relief during procedures. • Reduced likelihood of abandoned procedures, helping patients avoid repeat appointments, additional travel, further bowel preparation and prolonged uncertainty. • Staff reported easier administration and improved workflow compared with Entonox, with broad support for the switch due to environmental benefits.	• Improved procedure tolerance with fewer abandoned or incomplete procedures. • Faster analgesia delivery and improved procedural efficiency were reported by staff. • Maintained safety and effective pain management
TOTAL		**£222,296**	**46,059 kgCO2e**		