

TRANSFORMING IBD MANAGEMENT WITH HOME CALPROTECTIN TESTING

CASE STUDY FROM AN NHS GASTROENTEROLOGY DEPARTMENT

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Inflammatory bowel disease (IBD) affects over 500,000 people in the UK,¹ and places a significant financial burden on the NHS, costing over £10,500 per year to treat one person with Crohn's disease or ulcerative colitis.² The condition demands continuous monitoring, and is characterised by unpredictable flare-ups and chronic symptoms, such as abdominal pain and increased urgency to pass loose, frequent stools, which may contain blood and mucus.

Although biotherapeutics have improved outcomes, many patients on biological therapies eventually experience a loss of response, making close disease monitoring essential. Faecal calprotectin is a sensitive and specific biomarker for intestinal inflammation, as it is released by neutrophils in inflamed mucosa, and subsequently excreted in stools. When disease activity intensifies or therapeutic control fails, research has shown that faecal calprotectin concentrations can increase, often before the symptoms of a relapse appear.³ This can alert patients and clinicians to potential disease flares before they happen, enabling timely intervention to prevent symptoms worsening.

The course of a patient's IBD can be tracked using a highly specific rapid lateral flow assay like [BIOHIT's SmarTest® Calprotectin Home test](#), which uses gold-conjugated antibodies to detect and quantify calprotectin levels in stool samples. Using the accompanying SmarTest app, the lateral flow test results are read, logged and shared directly with clinical teams. Having a reliable, non-invasive method to assess disease activity enables remote monitoring of IBD at home. These assays are particularly valuable where access to lab testing is limited, helping patients to act before symptoms worsen, and maintain tighter control over their condition.



Validated home faecal calprotectin tests can be equivalent to the laboratory tests that we would normally perform in secondary care. The digital integration of the home calprotectin test result with our My Medical Record system allows patients to essentially conduct their own digital outpatient appointment with virtual clinical supervision by our IBD team. Patients can review their results, fill out patient-reported outcome measures and message the IBD team, enabling us to quickly intervene and help people to manage their condition.

Dr Markus Gwiggner, Consultant Gastroenterologist and clinical lead for My Medical Record

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[University Hospital Southampton \(UHS\) NHS Foundation Trust](#) is a large UK teaching hospital that delivers advanced IBD care to a sizable regional population. Its gastroenterology department is a regionally recognised centre for IBD, supported by a forward-thinking clinical team and digital infrastructure. The UHS IBD team comprises six gastroenterologists with a special interest in IBD, six IBD specialist nurses, and one digital healthcare professional, and cares for approximately 6,700 active IBD patients annually. The service has fully embraced remote care technologies, including My Medical Record, a UHS-developed digital patient portal now used by over 80 per cent of the hospital's IBD patients to support communication, access to results, and treatment planning.

Meeting the urgent need for faster and more responsive IBD care

In the past, the team at UHS had to request lab-based calprotectin tests when assessing disease activity during potential flare-ups. Stool sample containers and request forms were sent by post to the patient at home, and samples were returned to the hospital for lab analysis. This process meant that patients experiencing flare-ups often had to wait up to four weeks for results and decisions about their care. Such diagnostic delays can increase the risk of unnecessary hospital admissions and emergency interventions, while also prolonging symptoms and impacting quality of life. Additionally, only about 50 per cent of patients who were sent a sample kit actually supplied a specimen for testing, largely due to the inconvenience and unpleasantness of stool collection, storage and postage.

There was clearly a pressing need to complement the existing diagnostic approach with a fast and patient-friendly alternative that was digitally integrated with the My Medical Record patient platform to help individuals take control of their condition as soon as they begin experiencing a possible flare-up. The hospital therefore sought a point-of-care test that could be performed at home, with the aim of transforming how IBD activity was monitored and managed. The team selected the SmarTest Calprotectin Home Test from BIOHIT HealthCare for its clinical validity and ability to generate rapid and reliable results that would feed directly into its patient portal, which features a specific IBD pathway and electronic health record (EHR) system. This

CE-marked, lateral flow assay is designed to provide quantitative detection of faecal calprotectin in a format that allows patients to collect and analyse a stool sample in the comfort of their own home using a straightforward testing device. Results are available in 15 minutes, and patients can use their smartphone to determine the result via the SmarTest Calprotectin companion app.

The user-friendly smartphone-based interface guides the patient through each step of the home test, from sample preparation to result scanning and sharing. Results are easy to view in the SmarTest Calprotectin Home app, and clearly indicate inflammation severity across a clearly defined threshold scale – normal, borderline or elevated – enabling patients to initiate their own follow-ups when they require clinical support.

“ Occasionally, endoscopy biopsy results are not completely clear, making it difficult to reach a definitive diagnosis of IBD. In contrast, if the SmarTest Calprotectin Home assay shows that a patient has a high faecal calprotectin level, we can be more confident in our assessment. Having results available as soon as possible is very helpful for the nurses and consultants in making prompt clinical decisions, including referring patients for additional tests. ”

Claudia Silva Moniz, IBD Specialist Nurse



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Crucially, the BIOHIT solution allows test results to be shared securely with the individual's IBD care team via a QR code system. BIOHIT also provided all the necessary APIs and technical support to ensure the smooth integration of app data into patients' clinical records via My Medical Record. Point-of-care testing results are now automatically uploaded into the hospital's clinical systems and made visible to clinicians within 12 hours, supporting faster interventions and treatment decisions. A built-in image capture also ensures visual verification of test accuracy, giving doctors confidence in the results.

“ Working with BIOHIT has been really smooth and straightforward. The learning curve for the SmarTest app was short, and we were able to quickly integrate it with our own digital health record system. The team at BIOHIT was always very helpful and responsive when answering any questions we had. It's unusual that a supplier is so willing to share full access of their app and site with a customer, and BIOHIT's transparency made the onboarding process so much easier. ”

Nour Alharakeh, System Developer, My Medical Record

Improving outcomes and empowering patients

The hospital began using the SmarTest Calprotectin Home test in November 2023 as part of an NHSE-funded pilot study that aimed to transform how IBD activity is monitored and managed.⁴ This study showed that home-based testing led to quicker turnaround times, with results from the SmarTest app seamlessly integrating into the My Medical Record portal, and being transferred to the hospital's electronic health record for that patient by 10:00 am the next day. This accelerated the diagnostic process by eliminating the time usually required for posting samples and waiting for the laboratory assay to be completed, reducing time-to-results by three to four weeks per patient. This integrated approach also

enabled patient-initiated follow-up (PIFU) via secure My Medical Record messaging, allowing clinicians to make faster decisions and intervene earlier during flare-ups.

PIFU has also helped to reduce the number of hospital visits, and may prevent some admissions through early intervention. Results from the pilot study show that the IBD team at UHS has been able to extend the time between in-person outpatient appointments from 118 days in January 2023 to 364 days in January 2025.⁴ Reducing the number of appointments has significantly alleviated the workload on medical staff, enabling them to focus more effectively on patients with more urgent needs, or those who are unable to use digital tools. Dedicating more time to each individual appointment is key to providing the best patient experience and quality of care.

“ Testing at home and sharing data in real time – rather than attending an inconvenient physical appointment – enables patients to track their flares instantly, and trigger follow-ups themselves when needed. For some patients, the ability to access treatment and symptom relief for flare-ups faster than ever before has been life changing. ”

Evangeline Ganeshamoorthy, IBD Digital Healthcare Assistant

“ Patients and doctors previously had to wait weeks for calprotectin results due to issues with postage and testing backlogs, delaying interventions and potential symptom relief. Being able to pull data from BIOHIT's SmarTest app into a patient's electronic health record makes the patient journey complete, and allows the treatment pathway to flow much more quickly. ”

Natalie Steel, Product Manager for My Medical Record

Since introducing the SmarTest Calprotectin Home test, UHS clinicians have observed greater patient engagement in IBD care, with a recent survey showing that nearly all patients using the assay expressed a preference for home testing over traditional lab-based methods. Among those performing self-testing, most patients accessed their results digitally, and a significant proportion of patients were confident in responding to the results provided through the SmarTest app and My Medical Records, for example by initiating contact with their care team.

“ The SmarTest app has generally been well received, and patients of all demographics have found it easy to learn and use with minimal guidance, thanks to the in-app screen prompts. Users have expressed how comfortable they are with the test and the app, and prefer the streamlined home-testing approach over the lab-based method that they experienced before. ”

Evangeline Ganeshamoorthy

Limitations and potential challenges

It is important to recognise that, although the vast majority of patients experienced benefits and responded well to using the SmarTest Calprotectin Home test, such digital technologies may not be suitable for patients who are less confident with newer technologies. Additionally, individuals with learning difficulties, impaired sight, dexterity issues or requiring closer supervision or care may find the concept of home testing overwhelming or unrealistic. And, while the SmarTest app is available for most newer devices, it may not be compatible with some older models.

The promising outlook for remote disease monitoring

[The evolution of IBD care is moving decisively towards at-home, patient-led management](#), enabling individuals to take a more active role in monitoring and addressing their own condition. Looking ahead,

the team at UHS hopes to expand this pilot study to use SmarTest Calprotectin Home beyond flare management and into routine disease monitoring, combined with patient-initiated digital outpatient appointments via My Medical Record. The department also recognises the potential benefit of rolling out a similar at-home testing approach for other chronic illnesses in need of ongoing monitoring, such as rheumatology and dermatology conditions commonly treated with immunotherapies or biologics.

“ One of our main priorities is helping patients to feel better as soon as possible, so they can be symptom-free and live a normal life. We also want to avoid possible complications and hospitalisations that can result from treatment delays. ”

Claudia Silva Moniz

There is a strong business case to permanently integrate home-based calprotectin testing into standard care at UHS and other trusts, based on the time and efficiency savings already demonstrated over the initial trial. As this approach becomes more widely adopted throughout other NHS trusts and disease areas, it will offer a promising path to more cost-effective, personalised and patient-centred care.

“ We would like home faecal calprotectin testing to become a standard of care in the NHS, as it would greatly enhance long-term IBD monitoring capabilities, ultimately leading to a better quality of life for our patients. ”

Dr Gwiggner

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