such a trend, but this might be related to the different type of pathway involved (oncometabolite *vs* receptor tyrosine kinase).

It can be concluded, then, that biliary tract cancer is an important setting for implementation of precision medicine. The remaining question is how targeted therapies that have shown activity in clinical trials can be accessed by all patients seen in daily practice whose biliary tract cancers harbour such targetable alterations.[9] Despite clear value, current data suggest that only a few patients do actually access such tailored treatments, especially in Europe.[10] Many hurdles remain: to get quality samples to perform the analysis; to get funding for large-scale molecular screening, including multiple gene mutations, amplifications, and rearrangements; and to get funding for targeted therapies, sometimes based on phase 2 data, in a context where conducting large randomised trials might not be feasible because of the relative rarity of the disease. In this context, the FOLFOX and trastuzumab combination might prove to be an interesting option, but the same issues remain. How will this move from theory to practice for these patients? Will randomised phase 3 studies be feasible? Will it be possible to have these therapies reimbursed for these patients? How will it be ensured that more resource-constrained countries follow? It should be noted that most gallbladder cancers currently arise in low-income to middle-income countries, where providing access to precision medicine might be a major challenge, since other basic care needs are still not addressed. This issue is another illustration that after positive activity has been shown with a new treatment, access to innovation in everyday practice for all patients should be the next priority.

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Has the COVID-19 pandemic changed endoscopy in the UK forever?

Before the COVID-19 pandemic, approximately 2 million diagnostic gastrointestinal endoscopies were performed annually in the UK. In addition to the growing number of increasingly complex interventional procedures such as endoscopic retrograde cholangiopancreatography, endoscopic ultrasonography, device-assisted small bowel endoscopy, endoscopic mucosal resections, and endoscopic submucosal dissection, increasing

demand was also being driven by the needs of an ageing population, increasing numbers of patients requiring surveillance, and the need to expand capacity for bowel cancer screening, both by flexible sigmoidoscopy and faecal occult blood testing.

Services across the UK were struggling to meet target waiting times, relying on weekend working, waiting list initiatives, outsourcing, and insourcing. The longer term plan was to increase capacity by training more endoscopists.[1] The decade before the pandemic saw substantial changes in the evolution of endoscopy as an evidence-based specialty, with large clinical studies informing changes to practice, although clinicians still followed the dogma that gastrointestinal endoscopy was the cornerstone of diagnosis in luminal gastroenterology because of unrivalled mucosal visualisation and biopsy capability.

However, only 3–4% of patients referred for endoscopy on an urgent cancer pathway were found to have malignancy. Thus, large numbers of patients were undergoing invasive and expensive procedures with a relatively low yield of clinically significant pathology. Clinicians were asking whether doing more endoscopies could be replaced with doing smarter endoscopy, using less invasive initial tests, risk adapted referral, or endoscopy only for therapeutic indications.[2,3]

During the pandemic, the capacity to deliver endoscopy was substantially reduced and the number of people on waiting lists grew enormously. Early guidance on prioritisation and mitigation strategies was published[4] and roll-out of alternative diagnostic modalities was expedited. Cytosponge was used as an alternative for Barrett's oesophagus surveillance and in some areas for selected patients referred with chronic reflux symptoms.[5] Barium swallow returned for selected patients with dysphagia and transnasal endoscopy (believed to cause less gagging and less aerosol generation) was used more widely. The Edinburgh dysphagia score was reintroduced as a prioritisation tool. A no biopsy strategy for diagnosis of coeliac disease in adults was introduced for patients with substantially elevated tissue transglutaminase (TTG) antibody concentrations.[4] In the lower gastrointestinal tract, faecal immunochemical testing (FIT) was used for symptomatic patients as a triage tool or as a rule in–rule out test for further endoscopy.[6] Pilot studies of colon capsule endoscopy as an alternative to colonoscopy began or were extended.[7] The flexible sigmoidoscopy colorectal cancer screening programme was suspended during the pandemic and many surveillance procedures were postponed.

As we head towards 2023, COVID-19 remains with us, although health-care services are recovering. However, there is now a legacy of long waiting lists and a tired and understaffed workforce. It is imperative that health services do not simply return to old ways of working and consider how we deliver smarter endoscopy. Some approaches introduced during the pandemic should continue, some require further research, and some should be abandoned.

Cytosponge is here to stay as a tool for investigating the upper gastrointestinal tract. It has high sensitivity and specificity for high grade dysplasia and early cancer in patients with reflux symptoms and those undergoing Barrett's oesophagus surveillance, and is a safe triage tool.[8,9] Ongoing research should address which patients with reflux also require or would be better served by undergoing upper gastrointestinal endoscopy as well as addressing safety netting approaches. The Edinburgh dysphagia score is easy to use and might remain useful to prioritise urgency of investigations in patients with dysphagia. Barium swallows were helpful in a crisis but moving forward their role will once again be very limited. Transnasal endoscopy is better tolerated than per oral upper gastrointestinal endoscopy and more widespread implementation should be encouraged.

Paediatric gastroenterology has long accepted raised TTG concentrations as diagnostic of coeliac disease. The pandemic approach of two TTG readings of more than 10 times the upper limit of the normal laboratory range confirming coeliac disease in adults has been continued by many clinicians and should be enshrined in formal guidance moving forward.[10]

Lower gastrointestinal endoscopy has seen substantial changes during the pandemic, some of which will remain. The most substantial change to practice relates to FIT. 2022 UK guidance advocates FIT in primary care for almost all patients with symptoms suggestive of possible colorectal cancer. With a few caveats, only symptomatic patients with a raised FIT should be referred for colonoscopy or CT colonography.[11] Ongoing research seeks to establish how other biomarkers and patient factors might sit alongside FIT in a referral algorithm. Further research should establish the optimal

FIT threshold and whether it should vary depending on patient factors. Surveillance colonoscopy uses a lot of resources and new guidance introduced just before the pandemic has reduced this workload considerably.[12] The role of FIT as a possible tool to guide surveillance requires further study.

Capsule investigation of the small bowel is well established, with growing interest in the role of colon capsule endoscopy. There is enthusiasm for wider roll-out of colon capsule endoscopy, but the evidence base is not strong. High grade evidence regarding the role of colon capsule endoscopy as an alternative to established lower gastrointestinal investigations is required.

In terms of population-based screening, flexible sigmoidoscopy was designed to prevent colorectal cancer, and it will not recommence. Although the national screening programme plans to lower the age of FIT-based screening to compensate for the lost flexible sigmoidoscopy screening programme, this opportunity to prevent many cases of colorectal cancer has been a long-term casualty of the pandemic.

It is important to ensure that endoscopy is delivered smartly on the basis of good quality evidence. Evidence-based understanding of a patient's inherent risk, combined with stratification of symptoms and use of biomarkers, should allow endoscopy to be targeted to those individuals most likely to benefit from it. This will involve a change of mindset, including a move away from defensive medicine to an approach based on an individual's relative risk of disease, particularly when it comes to serious diagnoses such as cancer.

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Challenges in gastroenterology training in Australia

Selection into gastroenterology advanced training in Australia is becoming increasingly competitive, in part due to the rapid growth in the number of medical graduates. Following completion of medical school, doctors generally undertake 4–5 years of generalist training before applying to gastroenterology advanced training. At this stage, a substantial mismatch exists between the supply and demand for gastroenterology training positions, with only 25% of applicants being successful.[1] This process is highly competitive, and it is becoming increasingly common for applicants to undertake additional years of training or higher degrees before starting advanced gastroenterology training, resulting in an overall extended length of training. With trainees entering gastroenterology training becoming older, more flexibility within training