British Society of Gastroenterology guidance on recommencing gastrointestinal endoscopy in the deceleration and early recovery phases of COVID-19 pandemic

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Guidance developed by:
BSG Endoscopy Committee
BSG Endoscopy Quality Improvement Programme
Endorsed by the BSG Executive

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Executive Summary

Early in the COVID-19 epidemic, the BSG advised a pause in endoscopic services (6 weeks) for all but emergency and essential procedures. This pause was to protect patients and the workforce and permit time to plan service reconfiguration. Five weeks after the initiation of this pause, the following guidance is being issued to guide the safest possible restart of service.

Restoration of service: Guiding principles

- The guidance is issued based on consensus opinion and review of the available evidence. Some data is not yet available; some data is inconclusive: in this guidance therefore the safety and wellbeing of patients and staff is taken as paramount
- Delayed diagnosis, particularly of malignancy, carries the risk of serious unintended harm: this document proposes a route to the safe re-establishment of service up to 75% of the previous norm
- It will not be possible to restore full endoscopy services immediately. Ongoing senior clinical triage remains an essential part of the restoration of service and good clinical practice
- A safer 'COVID-minimised endoscopy' environment needs to be established
- Endoscopy is part of a bigger national picture, in which supplies of personal protective equipment (PPE) are not unlimited and have to be shared across all NHS and community services

3 main caveats apply:

- The reintroduction of services must be planned and phased
- Different scenarios will apply at different stages of the epidemic; the benefit of screening will change as the prevalence of COVID-19 decreases in the population
- This interim advice will be subject to change as new evidence becomes available

The most urgent changes required are:

- The restoration of endoscopy rooms and redeployment of specialist staff to their endoscopy units
- Extra time and space for procedures, because of increased infection control and cleaning procedures
- The need to pre-screen patients to identify those less likely to have the infection
- The need for "COVID-minimised" facilities, where strict patient flows separate potentially COVID-19 positive patients from those who are unlikely to have the infection
- The need for secure supplies of PPE

In this document, the BSG has updated all its detailed advice issued previously relating to individual indications and procedures and will continue to keep this under review. We believe that the UK Government and the Devolved Administrations should be encouraged to work with and through specialist professional groups and the Royal Colleges to co-ordinate best service provision guidance across specialty practice.

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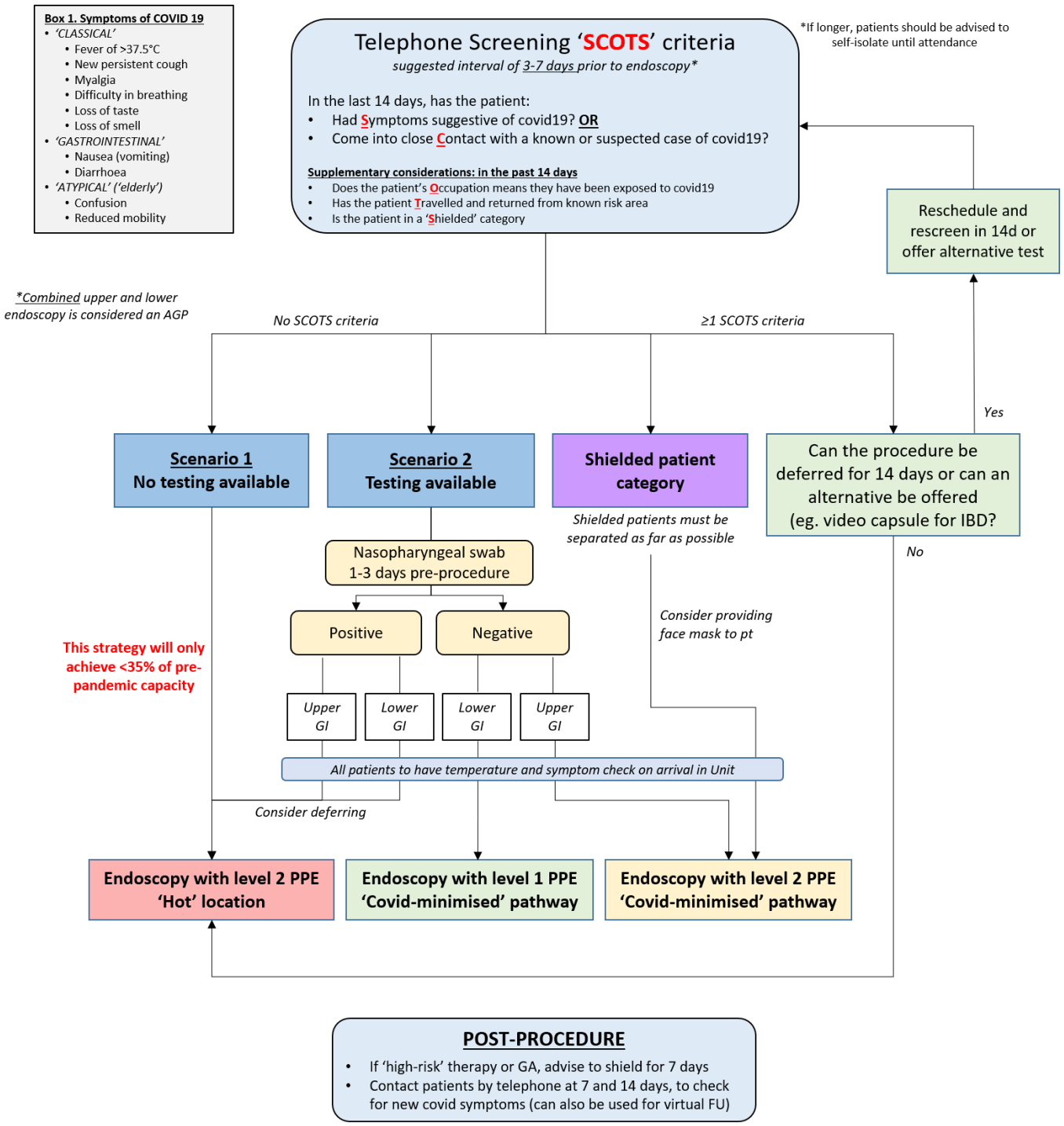
Key visual summary of recommendations



(Figure 1)

Contents

General principles

The BSG has already published strategies for:

- Endoscopy service in the build-up or acceleration phase of the current epidemic (1)

as well as:

- Service recovery documents: a pragmatic 'toolkit' for GI unit operations, including endoscopy, during COVID-19 (2)

Following the cessation of all non-emergency and essential endoscopy activity in March-April 2020, it is now essential to develop a plan for how endoscopy services may safely restart. The proposals in this guidance are designed to cover the deceleration and early recovery phases of the epidemic when some resumption of service recovery may become possible and should be read alongside the BSG Service Recovery documents (2).

Different areas of the UK will move through the phases of the COVID-19 epidemic at different rates of progression and at different time points. The capability and capacity to restore endoscopy practice will vary across the UK.

These interim recommendations are not exhaustive and apply to the deceleration and early recovery phases of the epidemic as defined in the BSG recovery documents GRID 1. They will be updated and adapted as more data emerges and wider consensus can be developed.

In resuming endoscopy services post the COVID-19 peak the following principles should apply:

- Optimising patient outcomes
- Protecting patients
- Protecting staff
- Correctly and efficiently utilising resources so that the maximum benefit is delivered for the greatest number of patients
- Addressing those patients who were 'suspended' pre COVID-19 peak
- Ensuring that all referrals are triaged by senior decision-makers balancing clinical need and potential benefit, with the risks to other patients and staff
- Continuation of mitigation strategies that are clinically driven by the reprioritisation of deferred referrals as capacity allows
- Above all, decisions should be guided by a strong ethical framework such as those set out in the Royal College of Physicians guidance: "Ethical dimensions of COVID-19 for frontline staff", which embodies the fundamental principles that all decisions should be accountable, inclusive, transparent, reasonable and responsive. (3)

Protecting patients and staff

If endoscopy services are to resume, then both the public and NHS staff must be confident that they are as safe as possible and that the risk of COVID-19 has been managed and reduced as much as feasible, within the constraints of our current knowledge.

The issue of safety is important because the public have correctly avoided unnecessary contact with the Health Service during the build-up and peak phases of the epidemic and, therefore, need to be reassured that attending for endoscopy does not compromise their safety.

The safety of staff is of paramount importance. The infection poses a potential risk to their health and also carries risk of death, so the correct degree of protection is essential. Staff will be called upon to work in new ways, under difficult and uncomfortable conditions, so looking after their morale, physical and psychological wellbeing and safety, is absolutely essential.

For these reasons, the principles underpinning any resumption of endoscopy activity must include:

- Strict infection control measures to reduce spread of the infection, as described in recent publications from endoscopy centres in China and Italy (refs 4-6,9)
- Protection of patients and staff by appropriate testing for Coronavirus (COVID-19), and meticulous contact tracing
- The availability of a guaranteed supply of enough appropriate personal protective equipment (PPE)

COVID-19 screening / testing to facilitate resumption endoscopy services

- **Problem:** Endoscopy procedures are aerosol generating. Procedures on individuals who are infected with Coronavirus result in a significant risk of infection to other patients and endoscopy staff. The requirement for endoscopy Level 2 (enhanced) PPE, however, reduces the number of endoscopy room procedures by up to 50% and places a high demand on supplies of PPE, especially FFP3 respirators and fluid-resistant gowns, which may stretch available resources. Whilst the availability of a guaranteed supply of appropriate PPE is, therefore, an essential requirement for the resumption of activity, strategies that might improve productivity and safety also need to be considered. An additional issue is the time required for more comprehensive room cleaning and air circulation in endoscopy rooms in between procedures which significantly slows endoscopy activity

- **Question:** Can screening / testing for Coronavirus (COVID-19) allow lower levels of PPE to be worn to enhance room throughput for outpatient urgent / routine endoscopy and conserve PPE, whilst maintaining patient and staff safety, perhaps at “COVID-minimised” sites?

Options for screening / testing

No accepted protocol for rapid, accurate testing pre-endoscopy currently exists. A number of possible strategies have been suggested, but all have potential problems. Patient self-isolation for 7 or more days pre-endoscopy and the use of chest CT to look for changes of COVID-pneumonia are logistically challenging but could be considered. Screening for symptoms and the use of testing for infection offer the best routes to allow resumption of endoscopy activity.

Screening questionnaires

- Asking patients for symptoms of **F**ever of more than 37.5 C, **T**ravel history, **O**ccupational exposure, **C**ontact history, and **C**lustering type (FTOCC), also revised to "**SCOTS"**, (see Flowchart) by telephone triage within 3 days of a procedure, augmented with questions on respiratory or other COVID related symptoms. The sensitivity and specificity of FTOCC telephone triage as a strategy to exclude COVID positive patients, is unknown, but it was used in the SARS epidemic in Hong Kong

- Currently, the most credible estimate for COVID-positive asymptomatic disease, is based on the experience with 634 passengers onboard the Diamond Princess cruise ship, of whom 18% were asymptomatic but tested positive for viral RNA on nasal and pharyngeal swabs. (95%CI 16-20%)

- Use of an NHS COVID contact app or e.g. the King's College 'Zoe' symptom app are more suited to epidemiological research than individual case management

- Patient follow up post endoscopy (telephone 7 and 14 days) to determine if units have been exposed to asymptomatic cases or if endoscopy attendance may have resulted in infection. This is important for understanding the infection further and for validating the adequacy of existing measures as well as informing any future outbreaks, but does not help individual cases

Testing for infection

- Antigen tests by reverse transcriptase polymerase chain reaction (RT-PCR) testing within 1-3 days of a procedure are still being assessed

- Published data on the true sensitivity and specificity of RT-PCR antigen testing are sparse and of low quality. Figures of 70% sensitivity and 98% specificity are reasonable. If prevalence is set at 3%, 10%, 20% and 50%, the negative predictive value (NPV) of RT-PCR then ranges from 99%, 97% and 93% to 77%, respectively. The current estimate of prevalence in the UK is 2.7% (1.2-5.4%). Even if the prevalence was 7 times higher than current estimates, the NPV of RT-PCR would remain at over 90%

- Antibody tests to determine past infection: levels of IgG are detectable in most patients by 10-14 days, but the degree of immunity conferred is uncertain and the possibility of false positive results exists. This situation may change over the coming weeks and months

- Most Point of Care test (POC; lateral flow) devices are not considered to have an acceptable degree of accuracy to form the basis for critical decision-making; and the WHO does not recommend these

- Antigen testing should be available and undertaken 1-3 days pre-procedure to: inform decisions about whether endoscopy should proceed or be deferred; to direct patients to a 'COVID-minimised' or 'hot' location; to allow rational use of PPE; and to inform room cleaning and turnaround times (Flowchart scenario 2). Coupled with a negative symptom screen on two occasions, antigen testing would reasonably exclude the vast majority of potentially infectious patients from undergoing inadvertent endoscopy

Options to be considered for "COVID-minimised" units

- Linear patient flow through the unit, (no crossing of COVID positive and negative pathways, separate entrance and exit)
- Prioritising procedures which may be less aerosol generating– flexible sigmoidoscopy and colonoscopy – as the risk of viable, transmissible virus in stool appears to be much lower
- Keeping known /suspected COVID patients out of " COVID -minimised" units (e.g. scope in theatre or at the bedside)
- Smaller units, or where there are few units in a region, could have " COVID -minimised" and "hot" days of the week, or could prioritise inpatients and COVID positive patients in separate rooms, prioritised to the afternoon to allow deep cleaning and settling of the rooms overnight
- A slower throughput of patients to reduce the risk of positive and negative patients meeting
- Staff will also require enhanced viral screening to maintain "COVID-minimised" units. e.g. pre-work symptoms and fever-free confirmation; staff rotation to work between "hot" and "COVID-minimised" parts of a hospital or sites should be avoided

Recommendation: In line with Asian (APSDE) and European (ESGE) guidelines, all patients assessed and confirmed as requiring endoscopy should be telephone screened for symptoms using FTOCC/SCOTS questions.

Two scenarios are envisaged (See Figure 1):

- No antigen testing available, all level 2 PPE (***Scenario 1***)

- Antigen testing available (***Scenario 2***)

- A category of 'shielding' patients also needs to be considered

- Those who are positive for either FTOCC symptoms or SCOTS criteria should be deferred for at least 14 days if clinically safe to do so, as should elective cases. If endoscopy cannot be deferred, a rapid Coronavirus COVID-19 antigen test should be performed and endoscopy offered at a "hot" site if risk / benefit judged favourable

- Patients should be phoned 7- and 14-days post-procedure to assess for COVID-19 symptoms; a register of results should be kept as this is important for contact tracing but also to monitor the success of these infection control measures and for future planning

- The high administrative burden of telephone screening +/- antigen testing and telephone follow-up is likely to require endoscopy units to have additional administrative and clerical staff to deliver this; endoscopy specialist nurses who have been redeployed during the peak phase will need to return to their Units to help deliver this

Recommendation: Where possible, all outpatients being considered for endoscopy should undergo RT-PCR antigen testing 1-3 days prior to their procedure

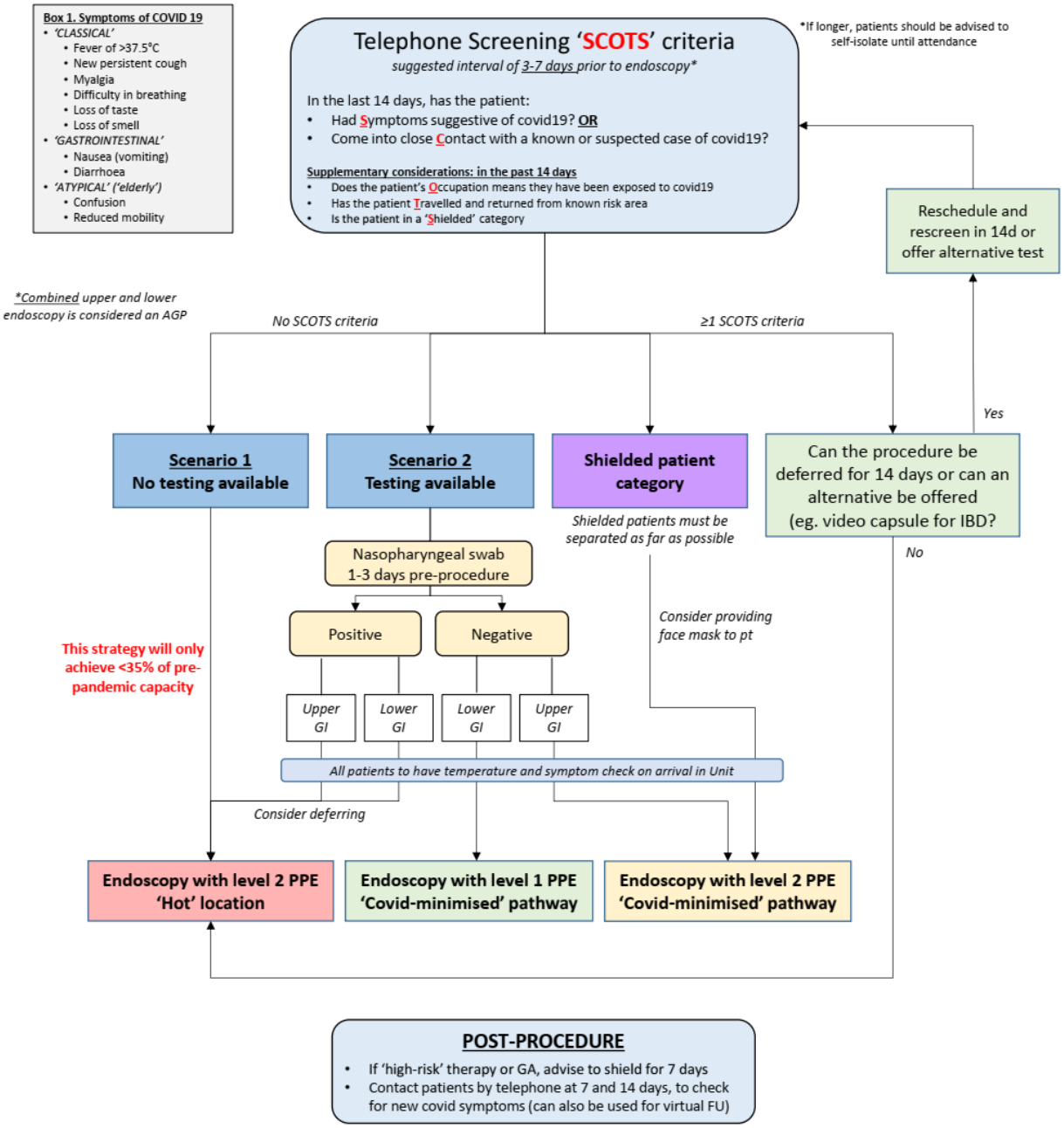


Figure 1. Options for screening and testing patients for Sars-CoV-2/COVID-19 before endoscopic procedures

Personal Protective Equipment (PPE) and infection control measures

- Appropriate PPE should be available for each type of endoscopic procedure for all staff involved

- Procedures should be deferred unless/until appropriate PPE kit is available

- The resumption of endoscopic services is critically dependent on the supply of PPE being sustainable, reliable and sufficient to meet the needs of the entire range of services involved in the care of patients with COVID-19. Until those criteria can be demonstrably achieved it will be difficult to reinstitute endoscopy for any but the most urgent cases. Once supplies are dependable, particularly as the epidemic decelerates, then services can begin to resume

- Advice from Public Health England (PHE) and the comparable agencies within the Devolved Administrations, states that working in areas where aerosol generating procedures (AGP) are performed require the use of enhanced (level 2) PPE (7). This includes endoscopy units but raises the crucial question as to which procedures pose the greatest risk to staff and other patients

- The overall risk to staff and patients is likely to depend on the stage of the COVID-19 infection, the viral load and the infectivity of the secretions involved. As a consequence, not all endoscopic procedures may carry the same risk to staff

- The infectivity of upper airways and nasopharyngeal secretions are well established. For this reason, the requirement for enhanced (level 2) PPE for upper GI endoscopy and ERCP is unlikely to change in the foreseeable future. If it becomes possible to demonstrate that antibodies are protective, and when combined with negative viral swabs, that the transmission of infection is unlikely then the situation might change

- The situation regarding lower GI procedures is less clear and complex. Multiple studies have demonstrated positive RT-PCR in stool several days or weeks after nasopharyngeal or sputum samples become negative. A small, but detailed series indicated that, while viral RNA could be detected in stool, viable virus was never present. This is consistent with viral dynamics from sputum and lung aspirates for SARS-CoV-2, where multiple studies have shown no viable virus beyond day 7, while RT-PCR remains positive for much longer

- It is reasonable that lower GI procedures are regarded as lower risk in terms of transmissibility than upper GI procedures. Thus, if patients have been screened and are asymptomatic for 14 days prior to endoscopy and have a negative nasopharyngeal swab, this should allow the use of less stringent infection control policies. This would facilitate higher throughput and aid recovery. Such a stratified strategy could achieve 75% capacity or more, but this remains to be tested. It would also allow safe and optimum use of PPE across all areas of healthcare

- Best practice measures in infection control must also be followed including adequate time for air exchanges in rooms and deep cleaning between procedures. This will affect capacity and appropriately spaced bookings will be necessary. Appropriate social distancing of patients (and staff) both pre- and post-procedure is also essential

- It is important that consideration is given to other elements of endoscopy as well as the procedure itself. These might include but not be restricted to: use of nitrous oxide:oxygen gas (Entonox), use of nasal oxygen, administration of throat spray or enemas

- Audit data from Italy suggest that adherence to strict infection control policies, including PPE and curtailment of routine activity, are associated with low rates of transmission of infection to both patients and healthcare workers (ref 9). Data on the effectiveness of safety measures in endoscopy are essential for QA purposes: to protect the public, patients and staff; to rationalise use of PPE supplies and to inform planning for any future outbreaks

- Availability of an appropriately trained workforce is essential to facilitating resumption of activity: endoscopy and admin/clerical staff who have been redeployed, will need to return to their Units to allow increased activity to occur

Recommendation: choice of PPE level should be determined by patient risk stratification, the nature of the proposed procedure and the results of patient testing, as above

Specific procedures

The importance of continuous senior decision-maker involvement in triaging and prioritisation of referrals to balance clinical need with available capacity – and the need to monitor this frequently over time - cannot be overstated.

1. Upper GI (UGI) endoscopy

During current 'peak' period of coronavirus transmission

Continue with emergency and essential procedures as per previous guidance, which is as follows:

Emergency/ essential procedures

- Acute upper GI bleeding (including ongoing banding of varices post-acute bleed)
- Total dysphagia and food bolus obstruction
- Obstructing upper GI lesion requiring stenting or therapy
- Urgent nutritional support with Nasogastric/jejunal tube or PEG
- Endoscopic vacuum therapy

Deceleration and early recovery phase

This should commence with those patients who were 'deferred/paused' pre-peak of outbreak and still deemed to require endoscopic investigation, following re-triage and prioritisation by senior decision-makers. The following groups should be considered for OGD

- Dysphagia – this should be verified at the point of consultant/nurse specialist triage
    - Patients with new dysphagia should be assessed using the Edinburgh Dysphagia Score (EDS) (10); a simple EDS calculator and guide is available here and here.
    - EDS ≥3.5 – direct to urgent OGD if appropriate and fit
    - EDS<3.5 – if >55y old, plan OGD urgently as lifting of COVID restrictions allow or consider an alternative diagnostic method, e.g. barium studies or CT if clinically appropriate
- Dyspepsia – this should be verified at the point of consultant/nurse specialist triage:
    - Patients >55y old with new dyspepsia ***and*** unexplained weight loss should proceed to OGD as urgently as lifting of COVID restrictions allow
    - Patients >55y old with new dyspepsia (< 6 months) ***and*** anaemia should proceed to OGD as urgently as lifting of COVID restrictions allow
    - Patients with an abdominal mass or >60y old with abdominal pain ***and*** unexplained weight loss should have urgent CT scan of thorax abdomen and pelvis (before considering OGD)

The following groups do not require OGD

- Direct / open access OGD (for those sites that have this service) should remain suspended. Patients already referred via this pathway should be re-triaged, reviewed and managed according to their symptoms

- All surveillance of long-term conditions should be suspended including
    - Barrett's surveillance (non-dysplastic and low-grade dysplasia)
    - Post EMR (after *satisfactory* first OGD post-EMR)
    - Post radiofrequency ablation
    - Gastric atrophy / intestinal metaplasia
    - Varices

- For dyspeptic patients OGD should not be performed in the absence of alarm features – a policy of PPI and *H. pylori* testing should be undertaken as per NICE guidance

- All patients with solely reflux symptoms should be given treatment with full dose PPI

- Suspected coeliac disease: – treat on basis of serology without duodenal biopsies. For patients with a serum TTG >10x the upper limit of normal (ULN) this has been shown to be accurate and safe, as long as there are no `alarm` features (agreed by Prof D. Sanders, Chair, Health Advisory Group, Coeliac UK). Units should develop a locally agreed policy with colleagues with expertise in management of coeliac disease, especially for patients with lower levels of TTG or atypical presentations

- Follow-up endoscopy for healing of grade C oesophagitis

Patients whose procedure is deferred or cancelled should remain on patient tracking lists and be followed up at clinic or by telephone to monitor progress and review whether their procedure has now become necessary.

2. ERCP & EUS

During current 'peak' period of coronavirus transmission

Continue with emergency and essential procedures as per previous guidance, which is as follows:

Emergency/ essential procedures

- All presentations of cholangitis
- Obstructive jaundice where required for significant symptoms or preoperatively
- Biliary stent change if clinically indicated (asymptomatic plastic stents deferred for max 3 months, asymptomatic fully-covered metallic stents, deferred max 1 year)
- Post-operative complications – bile leak, stricture
- Pancreatic stent for disrupted duct
- Therapeutic EUS – drainage of peripancreatic collections and biliary drainage after failed ERCP

Deceleration and early recovery phase

This should commence with those patients who were 'deferred/paused' pre-peak of outbreak and still deemed to require endoscopic investigation, following re-triage and prioritisation by senior decision-makers

ERCP - consider alternative options and proceed only after MDT discussion

- Hilar obstruction –percutaneous biliary drainage (PTBD) can be considered in selected cases
- Ampullectomy –defer unless deemed high risk of progression to malignancy over 2-3 months
- Difficult bile duct stones potentially requiring long procedure or cholangioscopy – consider deferring or surgery or interval stent change

ERCP procedures that should be deferred

- Majority of pancreatic therapy
- Sphincter of Oddi dysfunction
- Asymptomatic bile duct stones

EUS procedures to be continued

- Tissue acquisition in pancreaticobiliary malignancy (where it will significantly influence management). Alternative (non-AGP) options for tissue acquisition can be considered prior to referral

EUS - consider alternative options and proceed only after MDT discussion

- common bile duct stones – consider MRCP
- Assessment of neoplastic cyst – consider if high risk features AND recommended by specialist HPB MDT
- Cancer staging – only consider if recommended by specialist MDT

EUS procedures that can be deferred

- Dilated bile duct with normal LFTs
- Non-specific abdominal pain
- Recurrent pancreatitis
- Submucosal lesions –unless high suspicion of malignancy and recommended by specialist MDT

3. Capsule endoscopy and device assisted enteroscopy

A. Capsule endoscopy

During current 'peak' period of coronavirus transmission

Continue with emergency procedures, which is as follows:

- Continuous or frequent small bowel bleeding (overt or occult) in patients who are hospital dependent or requiring repeated hospital admissions

Deceleration and early recovery phase

This should commence with those patients who were 'deferred/paused' pre-peak of outbreak and still deemed to require endoscopic investigation, following re-triage and prioritisation by senior decision-makers. Careful assessment is required to ensure the risk of capsule retention is minimised and there is confidence in the availability of DAE or surgery in the event of capsule retention, if removal is clinically required.

- Suspected small bowel bleeding (occult and overt) in men and non-menstruating women of 60 years of age and under

- Radiological imaging in which a possible diagnosis of a small bowel tumour is made but further supportive evidence of the diagnosis is needed

In the medium to longer term there are potential opportunities to widen the use of capsule endoscopy procedures for diagnosis and to reduce demands on more invasive endoscopic services: examples include use of upper GI capsule endoscopy in suspected upper GI bleeding, screening and surveillance of varices, expanded roles in assessment of small bowel Crohn's and colon capsule as a diagnostic tool in selected symptomatic patients. These are areas requiring further work (see below).

B. Device assisted enteroscopy (DAE)

During current 'peak' period of coronavirus transmission

Continue with emergency procedures as per previous guidance which is as follows:

- DEA for therapy (e.g. continuous or frequent small bowel bleeding (overt or occult) in patients who are hospital dependent or requiring repeated hospital admissions)

Deceleration and early recovery phase

This should commence with those patients who were 'deferred/paused' pre-peak of outbreak and still deemed to require endoscopic investigation, following re-triage and prioritisation by senior decision-makers

- Patients with small bowel bleeding (overt or occult) requiring frequent blood and/or iron infusions

- To obtain histology in patients with localised lesions (including masses and strictures) identified by capsule endoscopy or radiology

Device-assisted enteroscopy in the post-COVID-19 era

Multidisciplinary team review of cases referred for device-assisted enteroscopy should be performed in order to ensure the appropriate utilisation of resources, for example, in deciding on whether a small bowel stricture should be treated by endoscopic dilatation or surgical resection. This practice has been recommended in the recent ESGE small bowel curriculum document (submitted for publication).

Most device-assisted enteroscopy services are regional (or national) and accept referrals from far afield. In the event of a backlog of cases and limited availability of procedure slots there may be an opportunity to case share, with less busy centres performing procedures for those with excessive local demand and local arrangements for this should be considered. This 'buddying' system is a further recommendation from the ESGE small bowel curricula group that aims to ensure that all centres have a caseload sufficient to maintain skills and provide high quality trainee experience.

4. Lower GI (LGI) endoscopy

During current 'peak' period of coronavirus transmission

Continue with emergency and essential procedures as per previous guidance which is as follows:

- ongoing lower GI bleeding where interventional radiology not possible or unsuccessful

and selected patients on a case-by-case discussion basis in the following groups:

- 2 Week Wait (2WW) / Urgent Suspected Cancer (USC) referrals –to be risk assessed on an individual basis, reserving colonoscopy for those judged to be highest risk
- planned EMR/ESD for high risk lesions
- new suspected acute colitis e.g. infection excluded, not settling after empirical treatment

Deceleration and early recovery phase

This should commence with those patients who were 'deferred/paused' pre-peak of outbreak and still deemed to require endoscopic investigation, following re-triage and prioritisation by senior decision-makers. This should include patients with lower GI symptoms and patients in the bowel cancer screening programme.

Symptomatic Patients (non-bowel cancer screening)

- This will include management of patients suspended during the peak with polyps where there is concern about cancer. These should be prioritised depending upon clinical risk. For patients with complex polyps, prioritisation should begin to those with lesions with high grade dysplasia, rectal lesions, those with depressed components and laterally spreading tumours (LST) according to risk:
  (LST-NG > LST mixed nodular > LST-G +1s > LST-G)
  (NG = non-granular; G+1s = granular with Paris 1s component; G = granular)

- All LGI referrals (2WW and non-2WW) which are made to secondary care should have a qFIT undertaken and, following review by a senior decision maker, should proceed to LGI endoscopy or CT colonography (as determined by local service availability and relevant national Guidance). Updated detailed guidance from both NHSE and Scottish government is expected shortly. British Society of Gastrointestinal and Abdominal Radiology (BSGAR) advice on use of CT colonography is here.

- Where patients are referred with iron deficiency anaemia upper GI endoscopy should be considered *after* lower GI investigation because the former is a higher risk AGP

- No "Straight To Test" (STT) colonoscopy or flexible sigmoidoscopy procedures should be accepted without the involvement of a senior decision maker to consider risks and benefits, and the overall priority within a limited service

- Review the need for all disease-based surveillance (inflammatory bowel disease, post polypectomy, post cancer) and **defer** all surveillance to beyond the deceleration and recovery phase with subsequent gradual reintroduction in line with new BSG guidelines (and as dictated by local capacity)

- Genetic based screening or surveillance. Where risks of delay relatively low **defer** until after deceleration and recovery phase (e.g. based upon family history). Where the risks of a delay in interval screening are higher e.g. Lynch syndrome, consider delaying where possible but proceed on a case by case basis

- Policies relating to the use of qFIT in primary care vary among the devolved nations so relevant national policy guidance should be followed. NHS England recommend that if qFIT is < 10, **do not proceed** to LGI endoscopy but develop local safety net and criteria for further assessment and management based upon symptoms. qFIT levels of <10 to inform decisions on patient investigation should be made by specialists in secondary care and **not** solely in primary care. More detailed advice on qFIT cut off levels is expected to be published soon

- Non-cancer referrals: - All referrals should be considered by a senior decision maker to review the yield and value of the proposed procedure. This will be based upon evaluating the potential risks and benefits to patients of endoscopy versus symptomatic management

- New Inflammatory Bowel Disease (IBD) – Assess likely diagnosis based upon symptoms and biomarkers, including calprotectin. Consider empirical treatment if low risk but proceed to colonoscopy or flexible sigmoidoscopy where needed, for diagnosis, or to inform decisions regarding the escalation of therapy

- Assessment of known IBD – Treat based upon symptoms or biomarkers where possible but proceed to LGI endoscopy where clinical management will be significantly influenced e.g. progression of disease extent

Bowel Cancer Screening Programme

- Commence with those qFIT positive patients who have been 'deferred or paused' based on the delay they have incurred

- Recommence qFIT screening as determined by national policy during the deceleration and recovery phases, and as dictated by local capacity to carry out colonoscopy. Screening hubs will need to ensure that the backlog of cases has been sufficiently cleared, and that working capacity has been restored before deciding to recommence qFIT invitations

- A national decision must be made urgently regarding the future of Bowelscope screening. The future of Bowelscope screening has been under consideration for some time and neither PHE nor NHSE have been able to provide guarantees regarding the future of the programme. It is the view of the BSG, that Bowelscope screening should not be reintroduced as this is difficult to justify during the recovery from the pandemic

- Likewise changes to the English screening programme such as age extension to age 50 and lowering of FIT threshold below 120 should take into account the degree of recovery of the service related to the current pandemic and the ability of services to expand further

- Review is required for all surveillance procedures and consideration should be given to deferring until after the deceleration and recovery phases, with subsequent gradual reintroduction in line with new BSG guidelines, as dictated by capacity (11)

Areas for ongoing work

- It is likely that the effects of COVID-19 will continue for the foreseeable future and will significantly impact on endoscopy capacity and the ability to deliver services for a prolonged period, possibly years. There is, therefore, a need to explore safe, alternative diagnostic modalities and to reconfigure pathways for cancer diagnosis

- These should include consideration of pathways that avoid invasive procedures for many patients, while maximising the diagnostic yield of significant pathology in those referred through 2WW/USC pathways, thus, preserving endoscopic capacity for those who will benefit most, or where therapeutic interventions are likely to be required

We recommend the following areas for further work to be pursued by the BSG Endoscopy committee, together with other stakeholder organisations:

- Coronavirus (COVID-19) screening – BSG to pursue in parallel with wider national work

- A national registry for contact tracing to study the risks of transmission to patients undergoing GI endoscopy and staff (see PPE and infection control measures above): this will both quality assure the current infection control measures and inform planning for future similar emergencies

- Potential for less invasive endoscopy e.g. wireless capsule endoscopy (WCE) – to be developed by BSG small bowel EQIP team

- Increased use of cross-sectional imaging to be developed together with BSGAR and ACPGBI

- More detailed Modelling of FIT levels for use in patients referred with lower GI symptoms – to be developed by Lower GI EQIP team, together with NHS England and health Services within the devolved administrations

- Commission research to establish the precise AGP risks of:
    - LGI endoscopic procedures
    - Nitrous oxide use
    - Administration of local anaesthetic throat spray
    - Insertion of enteral (NG/NJ) feeding tubes (together with the British Association for Parenteral and Enteral Nutrition (BAPEN) and BSGAR

- Endoscopy Unit design, bookings processes, patient flow, workforce and training issues during the recovery phase of COVID-19 –in association with JAG, ACPGBI and AUGIS and other stakeholders

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References and links to other guidance

1. https://www.bsg.org.uk/covid-19-advice/gi-endoscopy-activity-and-covid-19-next-steps/

2. https://www.bsg.org.uk/covid-19-advice/service-recovery-documents-the-what-when-and-how/

3. https://www.rcplondon.ac.uk/news/ethical-guidance-published-frontline-staff-dealing-pandemic

4. Zhang Y, Zhang X, Liu L, Wang H, Zhao Q. Suggestions of Infection Prevention and Control in Digestive Endoscopy During Current 2019-nCoV Pneumonia Outbreak in Wuhan, Hubei Province, China. February 2020. 2020; Available at: http://www.worldendo.org/wp-content/uploads/2020/02/Suggestions-of-Infection-Prevention-and-Control-in-Digestive-Endoscopy-During-Current-2019-nCoV-Pneumonia-Outbreak-in-Wuhan-Hubei-Province-China.pdf.

5. Repici A, Maselli R, Comobo M, et al. Coronavirus (COVID-19) outbreak: what the department of endoscopy should know. 2020; Available at: https://doi.org/10.1016/j.gie.2020.03.019.

6. Soetikno R, Teoh AY, Kaltenbach T, et al. Considerations in performing endoscopy during the COVID-19 pandemic. 2020; Available at: https://els-jbs-prod-cdn.literatumonline.com/pb/assets/raw/Health%20Advance/journals/ymge/GIE-D-20-00499%20_Roy-1584643794760.pdf

7. https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control.

8. https://www.bsg.org.uk/covid-19-advice/bsg-jag-summary-recommendations-for-ppe-in-endoscopy-protecting-staff-patients-and-the-ppe-supply-chain/

9. Repici A, Aragona G, Cengia G et al. Low risk of Covid-19 transmission in GI endoscopy. https://gut.bmj.com/content/early/2020/04/22/gutjnl-2020-321341.

10. Rhatigan E, Tyrmpas I, Murray G, Plevris JN. Scoring system to identify patients at high risk of oesophageal cancer. Br J Surg. 2010 Dec;97(12):1831-7. doi: 10.1002/bjs.7225. Epub 2010 Aug 24.

11. Rutter MD, East J, Rees CJ et al. British Society of Gastroenterology/Association of Coloproctology of Great Britain and Ireland/Public Health England post-polypectomy and post-colorectal cancer resection surveillance guidelines. Gut Feb 2020, 69 (2) 201-223; DOI: 10.1136/gutjnl-2019-31985.