Guidance for safe bronchoscopy unit operations in pandemic conditions
Version 2.1
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HSE Acute Operations Endoscopy Programme

Document details		
Version	Date:	Updates to document:
1.0	18 June 2020	N/A
1.1	01 July 2020	Member of ITS COVID-19 Working Group included
2.0	14 January 2021	Updated pre-procedure testing information (section 8)
2.1	03 February 2021	Removal of text in section 10

Irish Thoracic Society

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1. Introduction

The aim of this guidance is to help bronchoscopy services assess and manage the risks associated with COVID-19 transmission and plan how bronchoscopy activity can resume while minimising risk to staff and patients. The only way to eliminate risk entirely is not to operate bronchoscopy services but this has the potential to cause significant harm and increase non-COVID-19 related morbidity. The most recent publications on the risk of COVID-19 transmission to patients and staff provide some reassurance (see section 12, useful links).

While the HSE Acute Operation Endoscopy Programme is primarily concerned with GI endoscopy, it is recognised that many bronchoscopy services are delivered in acute hospitals that have combined GI endoscopy and bronchoscopy units. With the aim of providing consistent guidance; the Endoscopy Programme has partnered with the Irish Thoracic Society to develop this guidance document. A separate guidance document specific to GI endoscopy was published on 04 June 2020.

This bronchoscopy guidance has been developed with input from Dr Vida Hamilton, National Clinical Advisor and Group Lead for Acute Hospitals and representatives from the Health Protection Surveillance Centre, in particular the Antimicrobial Resistance and Infection Control team. Expert input was kindly given by members of the Irish Thoracic Society COVID-19 Working Group listed overleaf, and the Endoscopy Programme team are grateful for their contribution. The Endoscopy Programme team would like to thank Dr Marcus Kennedy Consultant Respiratory Physician, Cork University Hospital for his leadership and expertise in developing this document.

This guidance document is being issued to assist units in maintaining access to emergency bronchoscopy and to resume non-emergency essential bronchoscopy activity, as staffing and local conditions allow. There will be a need to maintain physical and social distancing between staff, patients and visitors for the foreseeable future.

It is recognised that centres vary as regards how bronchoscopy services are delivered with some centres having stand-alone bronchoscopy units and other centres combined GI endoscopy and bronchoscopy units. Throughout this document the terms “endoscopy unit” and “endoscopy staff” are used to reflect both combined GI and bronchoscopy units and stand-alone bronchoscopy units.

This guidance is applicable for bronchoscopy procedures taking place in public hospitals. It is also applicable to bronchoscopy procedures undertaken in private facilities under the terms of agreement in relation to the provision of public health services in private hospitals as a response to the COVID-19 pandemic. This guidance should be shared with private facilities which are performing bronchoscopy.

More guidance documents are underway by the endoscopy programme and the HSE more generally, and they will be circulated. They are noted in this guidance document. It is also advised to refer to the Covid-19 HSE Clinical Guidance and Evidence Repository for the most up to date clinical guidance. https://hse.drsteevenslibrary.ie/Covid19V2/home

Please contact Grace O’Sullivan, Programme Manager, HSE Acute Operations Endoscopy Programme for further information. graceosullivan@rcpi.ie 086 1409 177. **This document is also available in Word format**.

1.1 Members of the Irish Thoracic Society COVID-19 Working Group

- Dr Aidan O'Brien, Consultant Respiratory Physician, University Hospital Limerick (President, Irish Thoracic Society)
- Dr Marcus Butler, Consultant Respiratory Physician, St Vincent's University Hospital (Vice-President, Irish Thoracic Society)
- Professor Sean Gaine, Consultant Respiratory Physician, Mater University Hospital Dublin
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- Ms Siobhan Healy, Clinical Specialist Respiratory Physiotherapist, Cork University Hospital
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- Professor Karen Redmond, Consultant Thoracic and Transplant Surgeon, Mater University Hospital Dublin
- Professor Lorcan McGarvey, Consultant Respiratory Physician, Queens University Belfast
- Dr Desmond Murphy, Consultant Respiratory Physician, Cork University Hospital & National Clinical Lead Respiratory Medicine

2. Preparation

Decision making and workforce

It is recommended that each endoscopy unit develop a standard operating procedure (SOP) for COVID-19 which contains local protocols and decisions. This should be shared with the hospital Multidisciplinary COVID-19 Preparedness Committee.

The availability of the endoscopy team members who may have been redeployed to other areas of the hospital is key to resuming normal services. This includes senior medical staff, trainees, nurses, healthcare assistants and clerical staff. Clinical and non-clinical staff should be redeployed to endoscopy units before booking and scheduling patients can commence.

Capacity and scheduling

Appointments should be carefully staggered to avoid multiple patients arriving at the same time. Based on the need for physical distancing at each point in the patient pathway, the capacity to safely perform procedures in the unit should be estimated using a points system but remember that total patient numbers need to be considered. Remember to include capacity for current in-patient emergency procedures in initial calculations. Consider whether with the use of staggered start/stop times for staff, an extended working day can be achieved – this may create help maximise the throughput of your limited capacity.

Resume scheduled activity gradually. Observe carefully how your unit flow is operating; it may be possible to schedule additional procedures if the flow allows. Cancel procedures if you observe difficulties with flow that compromise your ability to maintain safe distancing along the pathway.

3. Staff health and wellbeing

At the start of each day, all staff should be asked by their line manager/person in charge to check that they do not currently have symptoms of COVID-19 infection.

Temperature checks may be offered to staff when there is any uncertainty about symptoms of fever. If symptoms develop during a shift, staff should immediately report to their line manager/person in charge. A local pathway should be established for management (including testing) of staff who develop symptoms while either on or off duty. Please refer to the latest guidance on the HPSC website; in particular the COVID-19 Telephone Assessment, Testing Pathway and Return to Work of Symptomatic Healthcare Workers which is available at https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/algorithms/

Records should be kept of any close and casual contacts of members of staff/patients by the line manager/person in charge to facilitate rapid contact tracing in the event of a positive test. Rapid testing pathways for COVID-19 should be used where available to expedite prompt contact tracing.

Staff start times, break times and finish times should be staggered to avoid congestion in changing areas or staff rest rooms. Physical distancing should be maintained for any staff handover or briefings (consider performing these in small groups rather than a single large group setting). Staff should only use designated staff-only toilet facilities.

The importance of continuous adherence to good hand hygiene for all staff cannot be over emphasised. Units should ensure that hand hygiene training is up to date for all staff working in the unit. Staff should follow national guidance about the use of face masks in clinical areas. This guidance is online at:
https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/guidance/infectionpreventionandcontrolguidance/ppe/useofsurgicalmasksinhealthcaresetting/

4. Patient selection for bronchoscopy

The decision to proceed with bronchoscopic evaluation for an individual patient requires a careful evaluation of the risks to that individual patient and the potential benefits. Appendix 1 contains a suggested framework to assist in prioritisation and scheduling. In the peak phase of the pandemic bronchoscopy activity was limited to emergency and urgent procedures.

Non-Urgent Essential Bronchoscopy

Patients who require non urgent essential bronchoscopy should now be scheduled. New referrals should be carefully triaged to ensure that there is an indication for bronchoscopy and that an assessment and treatment pathway is available and active for the patient in the event of a diagnosis of cancer or other significant diagnosis.

Other considerations:

It is suggested that direct access pathways should not be used at this time and that enhanced clinical triage of all referrals should be employed. Alternative (non-invasive) investigations should be considered where available. This can include the use of radiology, laboratory investigations, sputum cytology and culture.

Patients aged 70 years and older and those patients deemed vulnerable due to age/co-morbidity or immune suppression are at increased risk of adverse outcomes if they acquire COVID-19 infection. An alternative (non-invasive) investigation should be carefully considered for these individuals.

5. Information for patients

Information packs issued to patients in advance of their procedure should include information on any special arrangements that are in place for admission and discharge as a result of social distancing.

Patients should be advised that if they develop any symptoms of COVID-19 in the following 14 days, they should contact their GP for assessment and testing if indicated. If the test is positive, patients should inform their Public Health contact team that they have attended recently for an appointment.

Coming soon: A national HSE patient information leaflet about attending hospital for an appointment during COVID-19 will be available shortly and circulated to endoscopy units.

6. Information for GPs

Hospitals should inform GPs of any changes to referral pathways; particularly if direct access is not available to GPs at this time.

It is advisable to develop pathways for direct-to-GP or virtual clinic follow up for histology results or other investigations recommended as a result of the procedure.

It may be timely to remind GPs about the Lung Cancer Rapid Access Service GP Referral Guidelines which were developed by the National Cancer Control Programme. It is a useful reference resource when making referrals. The pathway and referral form are online at https://www.hse.ie/eng/services/list/5/cancer/profinfo/resources/gpreferrals/lung-cancer-referral-guideline.pdf

7. Pre-procedural engagement with patients

Clinical screening:

All patients should have a pre-procedural engagement that is virtual, by telephone or other suitable means, to ascertain that they are not

1. Suffering from any symptoms or signs of COVID-19
2. Self-isolating due to being a close contact
3. Suffering from acute illness of any nature other than that related to the procedure
4. In contact with any member of their social group who is suffering from the symptoms or signs of an acute illness, in particular those of COVID-19.

This pre-procedural engagement should take place 24-48 hours before.

Transport and accompanying adult:

Patients should be advised that they need transport to and from hospital and a designated individual to stay with them for 12-24 hours after any procedure involving sedation. It is preferable if the accompanying adult remains in the car/outside the hospital while the patient attends for their procedure. It is recognised that this may not always be possible. The accompanying adult should not have any symptoms of COVID-19. No children are to accompany individuals for procedures. Where there is doubt, err on the side of caution; reschedule the procedure.

The Government announced the Community Call on 2 April 2020 in response to COVID-19. As part of this, local authorities have set up local Community Response Forums in each local authority area. Transport to medical appointments and collection of prescribed medicines are just two of the services available through the forums. More information is online at https://www.citizensinformation.ie/en/health/covid19/community_support_during_covid19.html

8. Pre-procedural testing

Pre-procedural testing for COVID-19 is recommended prior to bronchoscopy performed with conscious sedation.

A nasopharyngeal COVID swab test it should be performed within two days (48 hours) of the procedure. It is recognised that there may be variation in testing turnaround times and in some instances, it may only be possible to schedule a pre-procedure COVID-19 test within three days (72 hours) of the procedure. For example, if the patient is scheduled for a bronchoscopy on Monday, the COVID-19 test can be organised for the Friday before.

Patients should not proceed to the hospital/ clinic until it has been confirmed that their test is negative.

Due to risks of false negative results, a negative COVID test result does not change the requirement for physical distancing, use of PPE or other IPC measures according to guidelines. Pre-procedural testing for COVID-19 does not replace to need for clinical screening (for COVID-19 symptoms/contacts) in advance of and at the time of admission for the procedure or the need to maintain IPC measures including the use of PPE throughout the patient pathway.

See flowchart 1 below for an overview.

<u>Previous COVID-19 diagnosis</u>

Patients from the community who had confirmed COVID-19 that did not need hospital admission, and who are 10 days or more post onset of symptoms and with no fever for the last five days, are regarded as non-infectious. For patients from residential care settings, and those who were hospitalised for COVID-19 but discharged and require early outpatient review, they are regarded as no longer infectious 14 days post onset of symptoms and with no fever for the last five days. Repeat testing is generally not appropriate in people with a previous confirmed diagnosis of COVID-19 during the 12 weeks after diagnosis unless there is a specific clinical indication. If there is a specific concern, please discuss the patient with a Consultant Microbiologist or Infectious Disease Physician.

<u>Great Britain and South Africa</u>

Patients returning from Great Britain (England, Scotland or Wales) or South Africa since 10 December should have planned admissions deferred until 14-days have elapsed and that they have been symptom-free throughout this period provided this is clinically safe. If a procedure is required during that time testing should be performed in the three days prior to the procedure even if testing would not be required for similar patients without a similar travel history.

9. Personal protective equipment

Endoscopy staff should follow the guidance issued by the HPSC on the use of PPE while performing endoscopic procedures. The latest guidance about PPE is available online at www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/guidance/infectionpreventionandcontrolguidance/

Everyone is encouraged to ensure they know how to be fitted for the appropriate size of FFP mask. A properly fitted FFP2 mask is sufficient and there is no evidence that an FFP3 mask further reduces risk of COVID infection. If FFP masks are not readily available, please seek advice about alternative options from the hospital's infection control team. The HPSC website has a video about how to put on and take off PPE. See www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/videoresources/

Procedures	AGP Related Increased Risk of Pathogen Transmission Infection Risk	PPE COVID-19 Confirmed or Suspected
Bronchoscopy	Consistently recognised	Hand Hygiene FFP2 RESPIRATOR MASK Eye Protection Gloves Long Sleeved Gown

Table 1: Extract from **Use of PPE to support Infection Prevention and Control Practice when performing aerosol generating procedures on confirmed or clinically suspected COVID-19 CASES in a pandemic situation**. https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/guidance/infectionpreventionandcontrolguidance/aerosolgeneratingprocedures/

10. Specific points regarding bronchoscopy

Bronchoscopy is an AGP procedure. It is standard practise to wear a properly fitted FFP2 mask, gloves, gown and eye protection during bronchoscopy (FFP3 mask not required but sufficient if fitted properly). Proper hand hygiene and discarding of PPE should be normal practise after all bronchoscopic procedures.

If a CT thorax is being performed on the same day prior to bronchoscopy, it should be reviewed for changes consistent with asymptomatic COVID infection. If changes are identified, patient should be isolated and local radiologist with respiratory expertise should be contacted to review if changes are identified.

It is important to meet your local Infection Control Team and discuss cleaning of rooms between cases. All surfaces should be cleaned between each case that may be in contact with staff with an anti-viral treatment. An individual assessment of risk for each procedure (examining factors relating to patient, procedure and staff) may mean enhanced PPE is appropriate, based on a precautionary principle.

There is no evidence to support using a Perspex hood or box for any bronchoscopy at present.

<u>Patient with negative COVID swab and no symptoms</u>

In a patient without symptoms and with a negative swab, standard protection is sufficient with standard room cleaning between procedures (Figure 1).

<u>Patient with unknown or inadequate COVID swab</u>

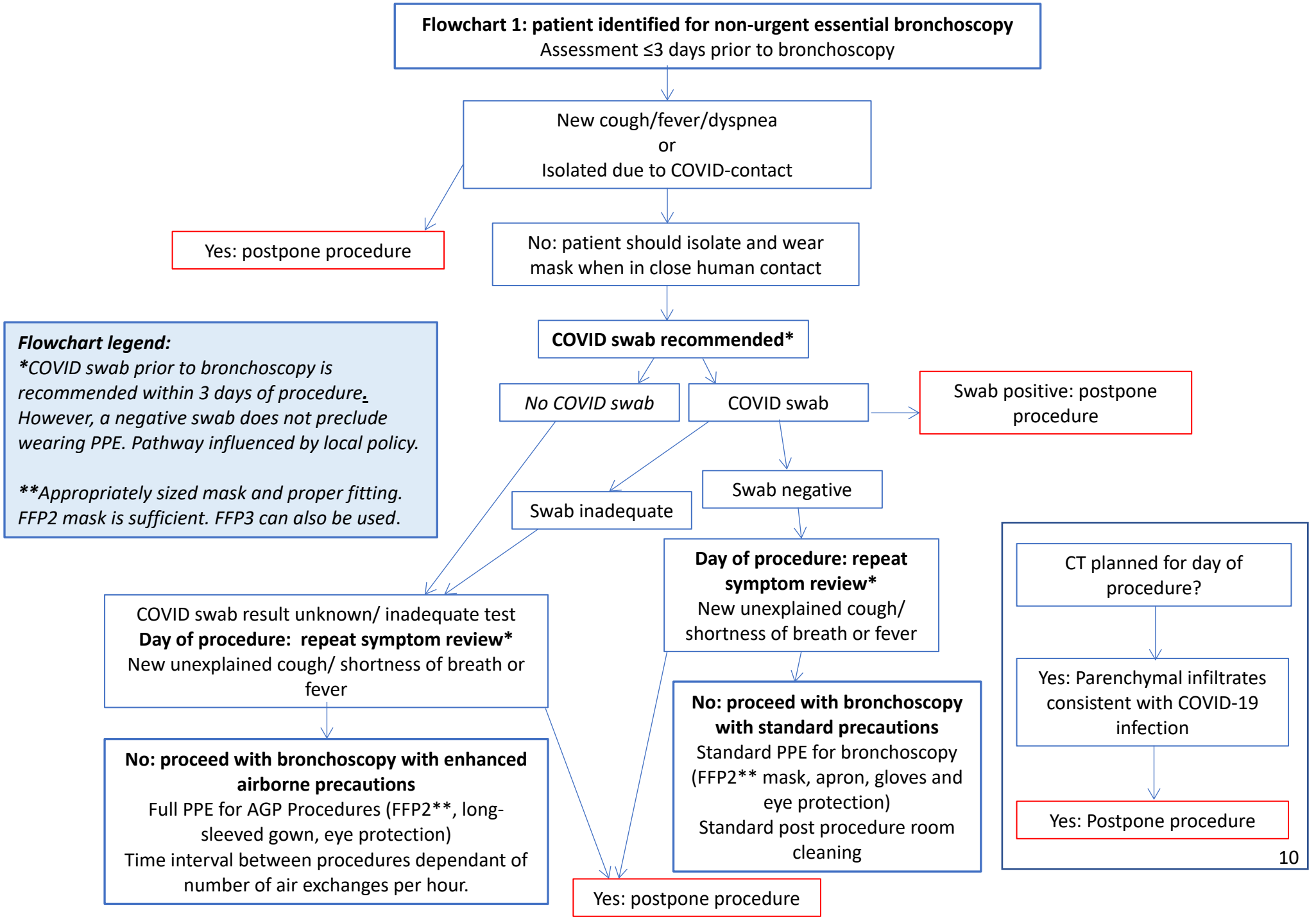
However, in patients who have not had a COVID swab or an inadequate test, enhanced protection is recommended in a similar fashion to a patient who is COVID positive or probable with long sleeve gown and appropriate environmental precautions (see below).

<u>Patients with symptoms suggestive of COVID-19 (with viral tests pending or confirmed positive</u>)

- Bronchoscopy is not an appropriate tool for diagnosis of SARS COVID-19 infection – the benefits are far outweighed by the risks.
- Bronchoscopy should have an extremely limited role in diagnosis of SARS COVID-19 and only be considered in intubated patients if upper respiratory samples are negative and other diagnosis is considered that would significantly change clinical management. See American Association of Bronchology and Interventional Pulmonology Statement
- In intubated patients, alternative respiratory specimens should be considered such tracheal aspirates and non-bronchoscopic alveolar lavage (N-BAL) (both AGP procedures).
- If bronchoscopy is being performed for COVID 19 sample collection, a minimum of 2- 3 ml of specimen into a sterile, leak proof container for specimen collection is recommended. See WHO Interim Guidance on Laboratory Testing
- The minimum number of required staff should be present, all wearing enhanced PPE as described below.
- Entry and exit from the room should be minimised during the procedure.
- Trainees should not be involved unnecessarily in the procedure.
- The duration of the procedure should be minimised where possible.

- Appropriate environmental precautions should be taken following the procedure. The room should be well ventilated, and a gap should be left before any further procedures are performed in the room ('droplet pause') (see CDC.GOV: https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html#tableb1 as a guide). The duration of any pause will need to be determined by local environmental assessment of the procedure room. Deep cleaning procedures should be employed before the next procedure.

**viral shedding peaks around the onset of symptoms, if safe to do, delaying by even a few days may reduce the risk of transmission associated with the procedure*


Flowchart 1: patient identified for non-urgent essential bronchoscopy
Assessment ≤3 days prior to bronchoscopy
New cough/fever/dyspnea
or
Isolated due to COVID-contact
Yes: postpone procedure
No: patient should isolate and wear mask when in close human contact
COVID swab recommended*
No COVID swab
COVID swab
Swab positive: postpone procedure
Swab inadequate
Swab negative
Flowchart legend:
**COVID swab prior to bronchoscopy is recommended within 3 days of procedure. However, a negative swab does not preclude wearing PPE. Pathway influenced by local policy.*
***Appropriately sized mask and proper fitting. FFP2 mask is sufficient. FFP3 can also be used.*
COVID swab result unknown/ inadequate test
Day of procedure: repeat symptom review*
New unexplained cough/ shortness of breath or fever
Day of procedure: repeat symptom review*
New unexplained cough/ shortness of breath or fever
No: proceed with bronchoscopy with enhanced airborne precautions
Full PPE for AGP Procedures (FFP2**, long-sleeved gown, eye protection)
Time interval between procedures dependant of number of air exchanges per hour.
No: proceed with bronchoscopy with standard precautions
Standard PPE for bronchoscopy (FFP2** mask, apron, gloves and eye protection)
Standard post procedure room cleaning
Yes: postpone procedure
CT planned for day of procedure?
Yes: Parenchymal infiltrates consistent with COVID-19 infection
Yes: Postpone procedure
10

11. The patient pathway during COVID-19

A review of each step of the patient pathway should take place to minimise risk and ensure guidance on physical distancing can be maintained. While the unit is operating a designated person should monitor on an on-going basis that physical distancing is being maintained at each point in the pathway and in each patient area. Delays in an area which may give rise to a backlog must be actively managed to avoid unsafe congestion. Patients should be offered a surgical mask if physical distancing cannot be maintained consistently throughout the patient pathway or if it assists in reassuring patients that the environment is safe. Ensure regular reminders about hand hygiene and respiratory etiquette for patients and staff along the patient pathway (posters/stickers).

Admission & waiting area

Patients should be encouraged to wait remotely (e.g. in their car/vehicle) or admitted directly to the patient assessment area to minimise patient numbers in the designated waiting area. The waiting area should be adapted (either by removing or marking seating) to ensure physical distancing of two metres is always maintained. Develop contingencies in the event of unexpected congestion – identify sub-wait areas that can be used for overflow. Steps should be taken to minimise any staff or other footfall through the waiting area that is not essential to the operation of the service.

Assessment

Patients should have a repeat assessment for symptoms of COVID-19 and for close personal contacts before admission to the unit. Physical distancing of two metres should be maintained in the patient assessment and changing area (remove seating and extra trolleys/close alternate bays to minimise the risk). Ideally the assessment area should not be used for hospital in-patients being brought for bronchoscopic procedures.

Procedure room

Patients who have confirmed COVID-19 or symptoms suggestive of the infection should be brought directly to the procedure room and should not pass through or use the same waiting and/or assessment area as other patients unless vacant and subject to appropriate cleaning and decontamination. Minimise the number of people in the room during procedures to limit the use of PPE, however participation of trainees in procedures should be permitted unless the patient has confirmed COVID-19. Remove unnecessary items and equipment from procedure rooms and ensure no items are in the procedure room that cannot be decontaminated.

Recovery

Examine the layout of the recovery area to ensure two metre distancing is maintained between patients. Remove extra trolleys, close bays and use markings to create adequate spaces. Patients who are confirmed to have COVID-19 or symptoms suggestive of the infection should be recovered in a separate recovery area (or recovered in the procedure room and returned directly to their patient area). In-patients, (irrespective of COVID-19 risk status) undergoing bronchoscopy should ideally be recovered in a separate area.

Discharge

Ensure prompt staggered discharge of patients. Seating should be removed or marked in the discharge waiting area to maintain physical distancing. Minimise relatives entering endoscopy unit by arranging a pick-up point and time collection at the exit from or just outside the unit.

Environmental considerations

Consideration should be given to performing procedures with confirmed COVID-19 (or symptoms suggestive of the infection with pending test results) in a separate clinical area or a designated procedure room if possible.

Patients use shared toilet facilities in endoscopy units both prior to and following endoscopic procedures. Toilets do not need to be cleaned after every use but procedures for enhanced cleaning of shared toilets should be considered. Reminders about good hand hygiene should be displayed prominently in all shared toilets.

12. Useful links

1. Irish Thoracic Society Statement on Urgent Bronchoscopy: https://irishthoracicsociety.com/wp-content/uploads/2020/03/ITS-Bronchoscopy-STatement-24.03-Final.pdf

2. Irish Thoracic Society Statement on Essential Bronchoscopy: https://irishthoracicsociety.com/wp-content/uploads/2020/05/Irish-Thoracic-Society-Statement-on-Essential-Bronchoscopy1.5.20.pdf

3. Covid-19 HSE Clinical Guidance and Evidence Repository https://hse.drsteevenslibrary.ie/Covid19V2/home

4. American Association for Bronchology and Interventional Pulmonology (AABIP) Statement on the Use of Bronchoscopy and Respiratory Specimen Collection in Patients with Suspected or Confirmed COVID-19 Infection https://aabronchology.org/wp-content/uploads/2020/03/2020-AABIP-Statement-on-Bronchoscopy-COVID.GAE-updated-Version.pdf

5. British Thoracic Society COVID webpage: https://brit-thoracic.org.uk/about-us/covid-19-information-for-the-respiratory-community

6. JAG has released new guidance to assist endoscopy services to adapt their environment following the COVID-19 pandemic. https://www.thejag.org.uk/covid-environment-guidance

7. Guidance for safe endoscopy unit operations in pandemic conditions. HSE Acute Operations Endoscopy Programme. Available from graceosullivan@rcpi.ie

8. 8. Guidance on the management of scheduled services for adults in acute hospitals during the COVID-19 era. Available at www.hse.ie/eng/about/who/acute-hospitals-division/covid-19-guidance/

Appendix 1 – Suggested Prioritisation of Bronchoscopy Procedures

This is a suggested framework to assist in prioritisation and scheduling and does not replace the need to clinical judgement and the triage of all cases by an experienced clinician.

The difference between emergent, urgent and non-urgent elective bronchoscopy is not clear cut however the table below (which is not fully inclusive) is adapted from American Association for Bronchology and Interventional Pulmonology recommendations.

Emergency Bronchoscopy	**Urgent Bronchoscopy**	**Non-urgent Essential Bronchoscopy**
Massive Haemoptysis (>200 mls/ 24 hours)	Lung Cancer Mass or Suspicion*	Chronic cough with normal CT
Foreign Body Removal	Mediastinal or Hilar Adenopathy suspicious for Cancer*	Diagnosis of Sarcoidosis with no immediate plan for immunosuppression
Symptomatic Malignant Airway Obstruction	Mild- Moderate Haemoptysis	Cryobiopsy for Chronic Interstitial Lung Disease
Severe or Moderate Benign Symptomatic Central Airway Obstruction	Whole Lung Lavage	Interventional pulmonology for Asthma/ COPD (valves, thermoplasty)
Stent Migration	Pulmonary Infection in immunocompromised State	Mucus plug removal
-	Suspected TB-smear negative sputum.	Mild Benign Stenosis

*In patients who are medically fit for cancer therapy

Ends