



SCREENING FOR BRONCHOSCOPY IN COVID ERA

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**“Your present
circumstances don’t
determine where you can
go, they merely determine
where you start.”**

SCREENING

- What is Screening?
- Why is it important?
- Screening before bronchoscopy
 - Modalities - History, CT Scans, rRT-PCR
 - 3-Tier Screening - When, What and How?
 - Initial screening at time of scheduling
 - Screening one day before procedure
 - Screening on D-day
 - Miscellaneous - HCW protection, Patient safety...

WHAT IS SCREENING...

- Systematic testing of individuals who are asymptomatic with respect to a target disease
- Goal
 - Prevent, interrupt or delay development of advanced disease in the subset with a pre-clinical form of the target disease through early detection and treatment

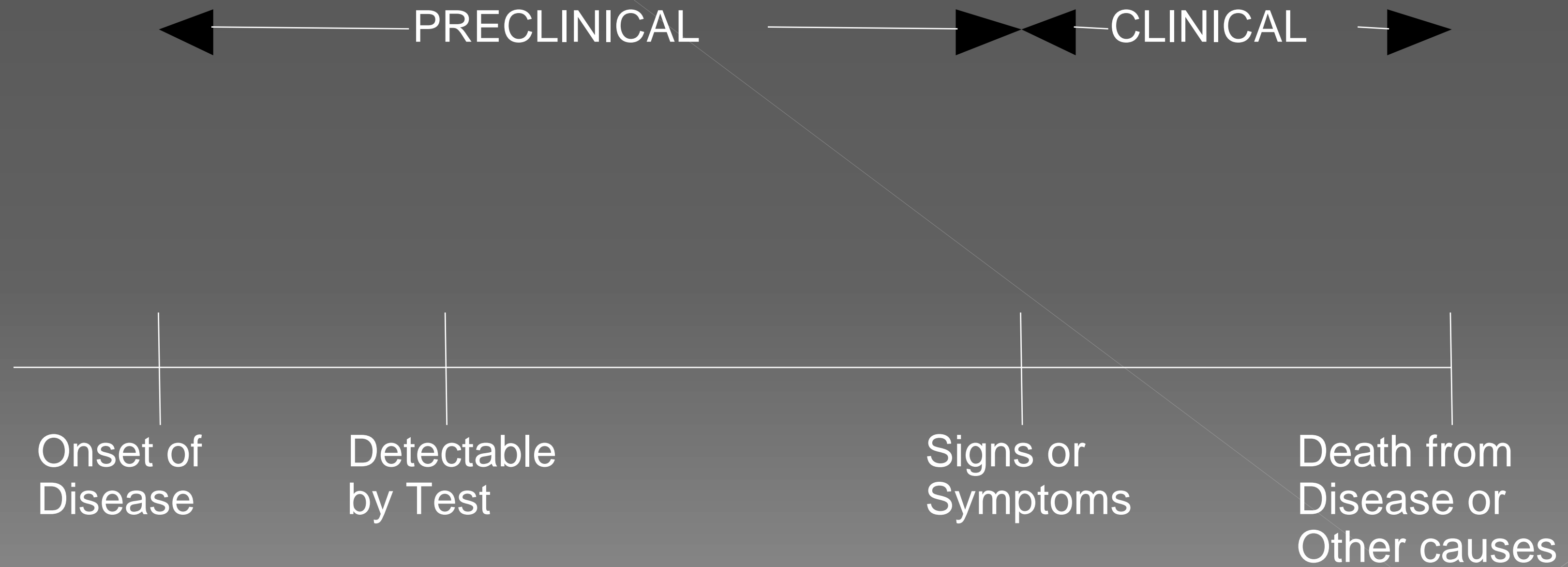
POTENTIAL FOR EARLY DETECTION - COVID19

- High morbidity and mortality
- Significant prevalence
- Risk factors allow for targeted screening of high risk individuals
- Pre-clinical phase
- Intervention likely to affect outcome

POTENTIAL FOR EARLY DETECTION - COVID19

- High morbidity and mortality (3.3%)
- Significant prevalence
- Risk factors allow for targeted screening of high risk individuals - Travel, h/o contact
- Pre-clinical phase - 5 days
- Intervention likely to affect outcome -
 - Social distancing, cough hygiene, self-isolation
 - ? Lock down - with containment strategy - “flattens the curve”
 - Screening - ? Mass screening, high risk cases, containment areas, pre-procedure
 - Contact protection - HCW and first contacts

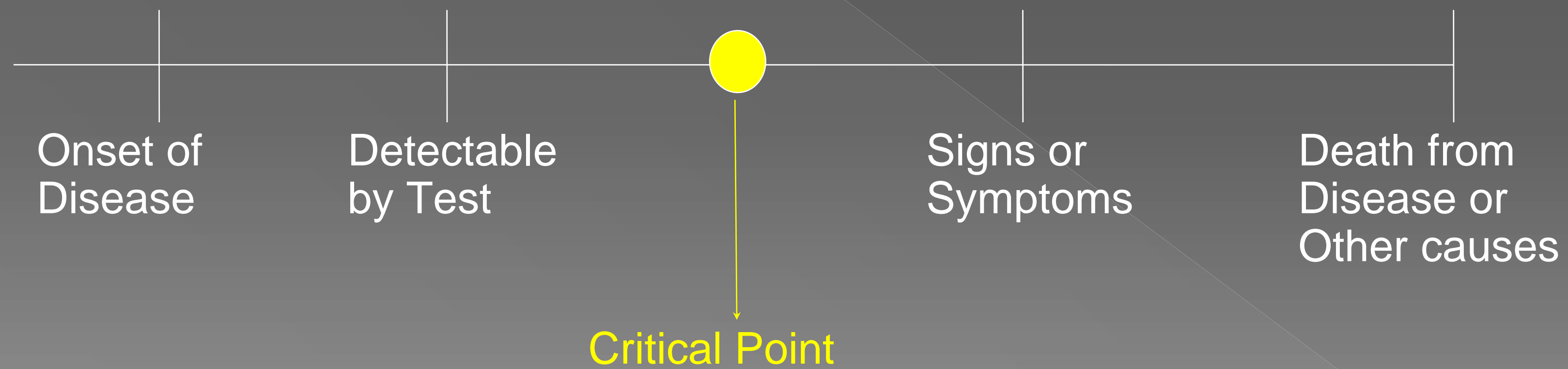
Timeline of Disease



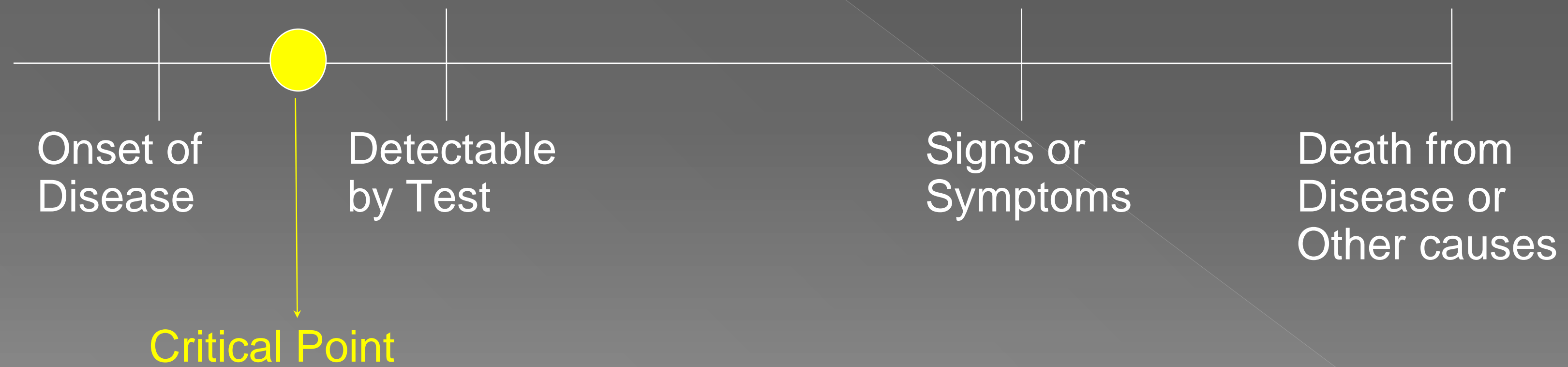
Critical Point

The point in the natural history of disease
before which ***therapy is more effective***

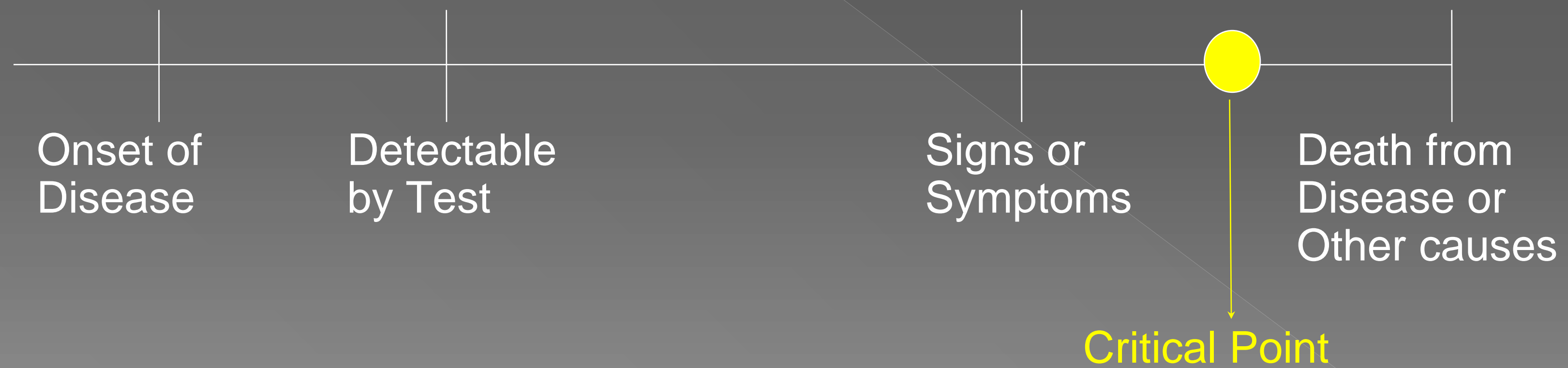
Screening Effective



Screening Ineffective



Screening Unnecessary



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Ascertain the need for bronchoscopy ...

SCREENING MODALITIES - HISTORY

- Symptoms - onset, duration and progression
 - Cough, sore throat, nasal symptoms, breathing difficulty, fever
 - Fatigue, diarrhoea, ageusia / anosmia
- Contacts
 - Contact with a positive case
 - Primary / secondary contact
- Travel history
 - International travel
 - Endemic areas - Maharashtra, TN, Gujarat

SCREENING MODALITIES - CT SCAN

COVID-19 pneumonia imaging classification	Rationale	CT findings
Typical appearance	Commonly reported imaging features of greater specificity for COVID-19 pneumonia.	<ul style="list-style-type: none">▪ Peripheral, bilateral, GGO with or without consolidation or visible intralobular lines ("crazy-paving")▪ Multifocal GGO of rounded morphology with or without consolidation or visible intralobular lines ("crazy-paving")▪ Reverse halo sign or other findings of organizing pneumonia (seen later in the disease)
Indeterminate appearance	Nonspecific imaging features of COVID-19 pneumonia.	<ul style="list-style-type: none">▪ Absence of typical features AND▪ Presence of:<ul style="list-style-type: none">• Multifocal, diffuse, perihilar, or unilateral GGO with or without consolidation lacking a specific distribution and are non-rounded or non-peripheral.• Few very small GGO with a non-rounded and non-peripheral distribution.
Atypical appearance	Uncommonly or not reported features of COVID-19 pneumonia.	<ul style="list-style-type: none">▪ Absence of typical or indeterminate features AND▪ Presence of:<ul style="list-style-type: none">• Isolated lobar or segmental consolidation without GGO• Discrete small nodules (centrilobular, "tree-in-bud")• Lung cavitation• Smooth interlobular septal thickening with pleural effusion
Negative for pneumonia	No features of pneumonia.	<ul style="list-style-type: none">▪ No CT features to suggest pneumonia.

SCREENING MODALITIES - CT SCAN

- Consider imaging if new symptoms or last imaging done > 2wks
 - Prefer imaging one day prior / day of procedure
- Minimise timeframe between imaging and procedure
- All “atypical” or “indeterminate” appearances to be treated as “suspected” Covid19

SCREENING MODALITIES - RT-PCR

- Negative RT-PCT does not rule out Covid19
 - Poor sensitivity
- Ideal to do RT-PCR in all elective cases - Bronchoscopy is AGP
 - Resource constraints and logistics may not be permissible

3-TIER SCREENING - PROPOSED

- Initial screening at time of scheduling -
 - History and review old imaging
- Screening one day before procedure -
 - ? Telephonic review
 - RT-PCR where feasible
 - Redo CT scan if necessary
- Screening on D-day
 - History, temp check
 - Redo CT scan if necessary`

QUESTIONS TO INCLUDE THE FOLLOWING

- Fever ($>37.5^{\circ}\text{C}$), cough, sore throat or breathing difficulty in the past 14 days?
- Have you had a close contact with a suspicious or confirmed case of Covid19?
- Have you visited areas at higher risk of Covid19 in the last 14 days?
- Since your last visit are there any new or worsening respiratory symptoms?

- If Yes
 - Postpone / defer procedure
 - Reevaluate need for procedure, re-screen and test for Covid19

D-DAY CHECKS

➤ HCW

- Time-out with staff / Check list - single experienced assistant - avoid trainees
- Team - Hand hygiene, PPE, mask/respirator and donning/doffing discussed
- Essential equipment in suite
- Lab informed - if test for Covid19 to be sent

➤ Patient

- Screening questions to be reviewed
- Non-contact temperature before entry
- To wear mask at all times
- Limit care givers

CHECKLIST

Adult Intensive Care Unit COVID-19 Bronchoscopy Checklist

Patient name			Indication	Diagnostic Y/N Therapeutic Y/N
DOB			HAVE YOU ADOPTED COVID PPE PRECAUTIONS? HAVE YOU GOT ENOUGH STAFF – [OPERATOR/ASSISTANT/RUNNER AVAILABLE OUTSIDE] HAVE YOU GOT BRONCHOSAMPLER/SERIAL COLLECTIONS SPECIMEN POTS AND BAGS?	
Hospital Number				
Date				

Please complete for all patients having a Bronchoscopy performed on the ICU

Equipment (tick, initial after checking need)		
Bronchoscopy specific equipment Bronchoscope + video monitor Bronchoscopy catheter mount Sputum collection pots x3 (Bronchosampler or serial connecion) Suction tubing Lubricant Swabs 1L sterile saline & Jug 20ml non luer lock syringes x 5 (50ml non luer lock syringes)	Airway kit Difficult Airway trolley Ventilator settings FiO2 1.0, Sedation, Paralysis	
	Haemorrhage kit – fridge ONLY IF BLEEDING ANTICIPATED Ice cold saline Balloon blocker Tranexamic acid (500mg x 3-4) Epinephrine 1:100k(1mg in 100ml 0.9% N/S x 2mLs aliquots)	Emergency drugs - ICU crash trolley OUTSIDE
		Pneumothorax kit - ICU (chest drain box)

Before the procedure	✓	Preprocedure	✓	After the procedure (Confirmed by procedure team lead)	✓
Sufficient staff for the procedure to take place; roles identified USUALLY 2 PEOPLE ONLY				Patient review. Consider recruitment manoeuvre/Ventilatory change / CXR?	
Team member Introductions/ Role allocation		All essential imaging reviewed		Samples labelled, processed and bagged	
Indication for bronchoscopy confirmed		Anticipated critical or unexpected events		On-going management plan communicated to staff	
Patient identity and consent /assent confirmed		Bronchoscopy protocol (please circle): Diagnostic, VAP, Collapse, Tracheostomy, Hemorrhage Other		Bronchoscopy report completed	
Monitoring equipment and medication checks		Nurse in charge		Any problems with equipment that has been identified that need to be addressed	
Does the patient have a known allergy? Yes / No		Disposable bronchoscope only +monitor+ samplers			
Anticoagulation and/ or anti-platelet agent Yes / No		PLAN: Preprepare Bronchoscope – place tip in bronch catheter mount. Connect serial sample containers, suction and monitor. INSPIR HOLD/TUBE CLAMP CATH MOUNT EXCHANGE. Procedure and samples. DO NOT REMOVE 'SCOPE. Withdraw into tip of catheter mount. INSPIR HOLD or VENTILATOR PAUSE. Circuit change.		Comments:	

	Procedure Team Lead	Bronchoscopist	Nurse in charge	Runner	Other staff
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TAKE HOME

- Ascertain need for procedure
- Modalities -
 - History - New onset symptoms, travel to endemic area and contact history
 - CT scan (same day / one day prior)
 - New onset symptoms
 - Last imaging > 2 weeks
 - RT-PCR testing in all before procedure if feasible
- 3-Tier screening suggested

Through screening - avoids risk and complications to both patient and HCW