

# Initial Covid-19 Management in ED

## VERSION CONTROL

Version	Date	Author	Changes
V2	12/3/20	DW	<ul style="list-style-type: none"> <li>Added details on aerosol generating procedures and comments on medical take</li> </ul>
V2.1	13/3/20	DW	<ul style="list-style-type: none"> <li>Addition of staff advice from PHE</li> <li>Change in nursing action card to reflect change in isolation from original guidance</li> <li>Change in EM Doc card due to change in isolation procedure</li> <li>Cleaning changes in department</li> <li>Ambulance procedures</li> </ul>
V2.2	17/3/20	DW	<ul style="list-style-type: none"> <li>Addition of illustrated cardiac arrest pathway</li> <li>Well, self-presenting guidance changed</li> <li>Removal of patients presenting with potential ED presentation and potential for infection</li> <li>Updated action cards</li> <li>PPE update</li> </ul>
V2.3	19/3/20	DW	<ul style="list-style-type: none"> <li>PHE diagnostic update</li> <li>Swabs updated inc protocol</li> <li>Self-isolation removed</li> <li>Action cards updated</li> <li>Patient flow updated</li> <li>RED zone details added</li> </ul>
V2.4	26/3/20	DW	<ul style="list-style-type: none"> <li>PPE guidance updated</li> <li>Paediatric flow added</li> <li>RED Commode SOP added</li> <li>Introduction text changed</li> </ul>
V2.5	31/3/20	DW	<ul style="list-style-type: none"> <li>Trust guidance updated</li> <li>PPE guidance updated</li> <li>Updated PHE definitions</li> <li>Cardiac arrest guidance updated</li> <li>O&amp;G pathway added</li> </ul>
V2.6	2/4/20	DW/NL	<ul style="list-style-type: none"> <li>Nebuliser update</li> <li>PPE update</li> <li>RED zone update</li> </ul>
V2.7	12/4/20	DW/NL	<ul style="list-style-type: none"> <li>Staff social distancing guidance added</li> <li>RED zone plan updated – flow</li> <li>RED Nurse action card updated</li> </ul>
V2.8	16/4/20	DW/JJ	<ul style="list-style-type: none"> <li>Oxygen guidance added</li> <li>Patient flow updated</li> <li>Action cards updated</li> <li>RED zone plan updated</li> </ul>
V2.9	26/4/20	DW	<ul style="list-style-type: none"> <li>Medical triage added</li> </ul>

With the on-going Covid-19 infection in the community and hospital, the trust has a Covid-19 Silver Command operational.. An action plan has been created for the ED, enacted and dynamically updated as required.

Public Health England have issued new guidance for screening of patients presenting with possible Covid-19.

Does the patient require hospital admission with either clinical or radiological evidence of pneumonia or acute respiratory distress syndrome, or influenza-like illness?  
(fever  $\geq 37.8^{\circ}\text{C}$  and at least one of the following which must be of acute onset: persistent cough (with or without sputum), hoarseness, nasal discharge or congestion, shortness of breath, sore throat, wheezing, sneezing)

Any 'specialty-accepted' patient attending the ED remains the responsibility of the specialty team and cannot be deferred to ED if suspected Covid-19. There is an onus on the individual teams to ensure their acute members are appropriately trained and experienced in PPE.

Further information from PHE is available on:

[www.england.nhs.uk/ourwork/epr/coronavirus](http://www.england.nhs.uk/ourwork/epr/coronavirus)

## **Swabs**

Swabs are to be done on patient's being admitted to COCH with symptoms as per guidance above. They should be taken once there is a decision to admit (ie seen by specialty team) not at time of referral. Consideration must be given to concurrently swab for other common respiratory pathogens.

## **Respiratory Emergency Department (RED Zone)**

### **Principles**

Cohort respiratory patients in one location within the ED

Allow the rest of department to function with minimal interruption

Allow for focusing PPE resources

Allow for rotation of staff to address burn out.

Decision to be made in light of demand and capacity at the time regarding use of Haygarth and modular ward

### **Location**

*R.E.D Zone is the footprint of the old Majors, excluding resus*

Standard Majors – will be run out of resus and ambulance off load bays

A.M – will function as present but include the PCU stream

Minors – will function as present (adult patients waiting in main waiting room)

*Children*

Respiratory paed – direct to paediatric ward (see SOP)

Non respiratory paed - to Kids Zone.

### **Layout**

R.E.D Resus: Cubicle 7 – try to keep free

Full AGP PPE to be kept outside

RSI trolley and defib to be kept outside – if required can be wheeled in during an emergency and decontaminated afterwards.

Cubicles 4 and 10 to be kept for patients requiring aerosol generating procedures

Cubicles 1,2,3,4 - Respiratory majors patients

Cubicles 5&6 combined into single resp majors cubicle (pending arrival of solid partition)

Cubicles 11,12 &13 combined into single resp majors cubicle (pending arrival of solid partitions)

Flow – clean entrance at resus doors, dirty entrance/exit between cubicles 1 and 14. Porters will remain outside this entrance.

### **PPE / IPC**

Stage 3 PPE should be worn when working in the R.E.D. zone unless there is no patients in the area and full cleaning has occurred.

However:

- Equipment must be changed if visibly contaminated
- Outer gloves must be changed between patient interactions
- Stethoscopes must not be worn around the neck
- Brief visitors to the area require stage 1 PPE as a minimum, but not necessarily stage 3 (risk assess).

Scrubs should be worn whilst working in the hot zone. (see also clothes handling guidance).

**\*26/04/2020 Please look out for regular updates as advice is changing regularly\***

It is permissible to wear these scrubs in breakout areas – adequate PPE should be worn in cubicles to minimise clothing contamination.

Housekeeping / domestics will be providing enhanced surface cleaning within the R.E.D. zone.

Auscultation should be kept to a minimum – however if used, stethoscopes must be thoroughly cleaned after each use. If a disposable stethoscope is used, it must remain with the patient. If a patient's swab is negative, then it (the stethoscope) can be cleaned with chloroclean and returned to use.

The computer keyboard and mouse should be wiped down before and after each individual has finished using them.

Scrupulous hand washing must be undertaken.

No personal food or drink to be brought into the R.E.D. zone.

In the future, resus may become part of the R.E.D. zone – if this occurs, then all high-risk AGPs may be performed in there allowing a decrease in the level of PPE required to be worn at all times in the main R.E.D. zone.

### **Staffing**

The staffing of the R.E.D. Zone will, by necessity, evolve in line with demand.

Initially the zone will be staffed by ED staff – with the medical team being called to assess patients requiring admission.

As demand develops non-ED staff may be allocated to work both within the hot zone and in other areas of the department (medical and nursing). (see separate staffing document)

### **Relatives**

Only one relative per patient.

Patient and relative to wear face mask at all times within the R.E.D. zone.

Must remain in the cubicle and not repeatedly leave the cubicle

## Patient Flow

### **Presenting via ambulance**

- Pre-alert received from ambulance service regarding a patient potentially infected with coronavirus and NOT peri-arrest
- Ambulance to be held outside ED with patient on-board – driver may enter ED and liaise with NTL/MTL and isolation decision made.
- Consider ED clinician (Middle Grade/Consultant/Senior ACP) donning PPE and assessing patient in ambulance
- Admit to RED zone – ambulance team will bring patient in wearing appropriate PPE.

### **Self-presenting via streaming**

- Reception staff identify potential Covid-19 patient – give mask and notify streamer
- Streamer to ensure patient has mask in place
- Admit to RED zone for all potential patients (inc PCU)

### **In RED zone**

- Undertake initial assessment in appropriate PPE
  - Consider use of level for extensive fluid exposure especially if patient expectorating/coughing/significant risk of droplets
- Initiate treatment as required (see nebuliser notes)
- **If needs admission:**
  - Involve on-call medical team – Consultant or Medical Registrar
  - Contact clinical site co-ordinator for admission destination
  - Isolate in ED – see ED isolation plan
  - Admit under acute medicine consultant and inform MAU ward clerk
  - Complete swabs as per pathway
- **If suitable for discharge:**
  - Supply with oral antibiotics + others as required
    - See antibiotic guidance
    - Prednisolone 30 mg for 5 days if clinically indicated/required
    - Salbutamol inhaler with Spacer if clinically indicated/required
    - Treatment dose DOAC for DVT/PE if clinically indicated/required
  - If follow up investigations required discuss following day with acute medicine consultant and Microbiologist e.g. CTPA for suspected PE
  - Will need to wait for isolation period to complete even if negative swab test

\*26/04/2020 Please look out for regular updates as advice is changing regularly\*

## **Patient self-presents to ED well with possible Covid-19**

- Patient to be sent outside and advised to attend to self-isolate and contact NHS 111 if required

# General Principles of Medical Management of Patients

## Definition

Consider COVID-19 in all patients presenting with:

- Clinical / radiological evidence pneumonia
- Influenza like illness (i.e. fever  $\geq 37.8$  plus  $\geq 1$  respiratory symptoms - cough, hoarseness, dyspnoea, sore throat, wheezing or sneezing)
- Acute Respiratory Distress Syndrome (ARDS)

**BEWARE - Alternative pathologies can mimic COVID-19 (i.e. bacterial sepsis)**

**Manage other medical comorbidities as per usual care**

**This guidance does not specifically cover IECOPD caused by COVID-19 infection.**

**Ensure appropriate PPE and isolate as per agreed IPC guidelines**

## Investigations on admission

### Bloods

FBC, U+E, LFT, CRP, VBG or ABG (if SpO<sub>2</sub> <92% or needing oxygen)

If High risk / severe disease: D-dimer, Ferritin, CK, Troponin (risk stratification)

### Microbiology

Viral nose-throat swab SARS CoV2 / Influenza PCR

X2sets blood cultures (ideally prior to antibiotics)

Sputum (+ PCP/AFB if immunocompromised)

Send urine for legionella and pneumococcal antigens.

Blood for atypical pneumonia screen (Legionella, Mycoplasma, Chlamydia)

### Radiology / other

Portable chest x-ray

Baseline ECG

Discuss with consultant prior to any CT/MRI request

**All confirmed COVID-19 patients should be referred to the research team for inclusion in clinical trials and consideration of additional treatments.**

Adverse prognostic factors		
Epidemiological	Vital Signs	Labs
Age > 65 Pre-existing: Respiratory disease, Cardiovascular disease, Hypertension, CKD or Diabetes Use biological therapy History transplant / immunosuppression	Respiratory Rate > 24 Heart Rate > 125 SaO <sub>2</sub> < 93% (room air)	D-dimer > 1000 ng/ml CRP > 100 Elevated troponin Ferritin > 300

Community Onset			Hospital onset
Group 1	Group 2	Group 3	Group 4
Asymptomatic or mild symptoms without dyspnoea Age <70, without adverse prognostic factors and negative CXR	Mild or moderate symptoms including dyspnoea. CXR with pneumonia or mild symptoms with adverse prognostic factors	Severe pneumonia with respiratory failure / ARDS or haemodynamic instability.	Variable severity of disease May be complicated by HAP
Consider home to complete self-isolation	May be able to discharge following assessment	Hospital admission and consideration of intensive care if for escalation	

On admission assess for frailty using the Clinical Frailty Scale (NICE guidance) and understand the patient's comorbid condition(s) to help tailor the management of critical illness and appreciate the prognosis.

**Communicate early with the patient and family. By default, all patients not appropriate for escalation of care should have a DNAR form completed. Help will be available with ethical decision making during this time.**

**Oxygen and Ventilation**

**Minimal flow rates to conserve oxygen supply**

- **Initiate controlled oxygen therapy and titrate to reach target SpO<sub>2</sub>.** ≥ 92% - 96% or ≥ 88-92% in those at risk of CO<sub>2</sub> retention.

Escalate O<sub>2</sub> as follows:

- 1) Nasal cannulae 2 - 4 L
- 2) 35 - 40% venturi mask
- 3) 10 - 15L O<sub>2</sub> via non-rebreathe mask + critical care referral if appropriate.

- **Do not routinely offer High-flow Nasal Oxygen (HFNO).** Lack of efficacy, high oxygen usage and potential for aerosol generation . If required discuss with critical care if appropriate for escalation.
- **Continuous Positive Airway Pressure (CPAP) may be considered after consultant discussion if can be delivered in an appropriate environment with aerosol generating PPE available for staff and appropriate filters.** Start with PEEP 10cmH<sub>2</sub>O + FiO<sub>2</sub> 60%. Review progress at least hourly.
- **Do not use Bi-level Non-Invasive Ventilation (NIV) routinely for patients with hypoxaemic respiratory failure.** If felt to be required discuss with critical care if patient appropriate for escalation.
- **NIV may be considered in patients with acute hypercapnic respiratory failure for whom NIV would normally be considered after consultant discussion.** (e.g. Exacerbation of COPD or obesity hypoventilation) if can be delivered in an appropriate environment with aerosol generating PPE available for staff and appropriate filters.



**Circulation**

- **Conservative fluid management. Aggressive fluid resuscitation may worsen oxygenation.**
- **Avoid IV fluid unless evidence of shock / hypovolaemia**
- **Recognize septic shock (systolic BP  $\leq$  90 / MAP  $<$ 65) when infection is suspected AND lactate is  $\geq$  2 mmol/L. Refer to inpatient sepsis screening and action tool.**
- **For resuscitation in septic shock give a 250-500mls bolus of isotonic crystalloid and review the response.**
  - If no response to fluid loading and/or signs of volume overload then discontinue fluid resuscitation. If improvement consider repeat.
- **Consider early vasopressors/critical care referral if shock persists during or after fluid resuscitation**

**Antimicrobial Therapy (excluding critical care)**

**Give empirical therapy within 1 hour of initial assessment when bacterial respiratory tract infection is suspected of complicating COVID-19 – see further details on trust COVID 19 antibiotic policy.**

Community Acquired			Hospital Onset
Group 1	Group 2	Group 3	Group 4
Not usually required	Amoxicillin 500mg TDS (PO)	Ceftriaxone 1g OD IV <u>plus</u> Azithromycin* 500mg OD PO/IV (+ teicoplanin if MRSA colonisation)	Ertapenem 1g OD (IV)  (+ teicoplanin if MRSA colonisation)
	<u>Penicillin allergy</u> Azithromycin* 500 mg OD (PO)	<u>Severe Penicillin Allergy</u> Teicoplanin <u>plus</u> Levofloxacin 500 mg BD (PO/IV)	<u>Severe Penicillin Allergy</u> Teicoplanin <u>plus</u> Ciprofloxacin BD (PO/IV)

**If severe sepsis: Consider addition gentamicin IV 24-48 hrs (see aminoglycoside policy)**

\* Doxycycline 200mg stat then 100mg OD if Azithromycin contraindicated (QTc prolongation). Monitor LFTs pre-existing hepatic disease / hepatotoxic medications.

- Consider the need for Influenza testing and empirical treatment with Oseltamivir (Tamiflu)
- Consider increased antibiotic resistance profiles in travel related bacterial sepsis - liaise with Microbiology.
- Do not routinely give systemic corticosteroids for treatment of viral pneumonia or ARDS unless they are indicated for another reason.
- **Additional treatment as per RECOVERY trial – all confirmed COVID-19 patients**

**Monitoring**

- Closely monitor patients using NEWS2 for signs of clinical deterioration and act accordingly.
- Recognize worsening hypoxemic respiratory failure when a patient has increasing oxygen requirements and work of breathing.

**Critical Care Referral Use Clinical Frailty Scale to help guide decision making (see below)**











Patients are at risk of rapidly progressive respiratory failure and sepsis / septic shock. Patients should be discussed with critical care only if escalation has been deemed appropriate by their primary consultant if;

- NEWS2 score 5 – 7 (refer to CCOT)
- NEWS2 score  $\geq$  8 (contact ICU registrar / refer CCOT)
- FiO2  $\geq$  40% to achieve target oxygen saturation or rapidly escalating oxygen requirement.
- Type II respiratory failure deemed to require ventilatory support
- Hypotension despite initial fluid resuscitation

NB. Patients considered for respiratory / cardiovascular support in critical care should demonstrate likely reversible pathology and have the physiological reserve to survive 2-3 weeks of invasive ventilation and multi-organ support, resulting in an acceptable quality of life to the patient. Severe cardiovascular disease, respiratory disease and frailty (CFS  $\geq$  5) will have a significant adverse effect on prognosis.

*If your patient may require immediate intubation, please let ICU team know so that they can come prepared in correct PPE.*

**Clinical Frailty Scale\***

 <p><b>1 Very Fit</b> – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.</p>	 <p><b>7 Severely Frail</b> – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).</p>	
 <p><b>2 Well</b> – People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.</p>	 <p><b>8 Very Severely Frail</b> – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.</p>	
 <p><b>3 Managing Well</b> – People whose medical problems are well controlled, but are not regularly active beyond routine walking.</p>	 <p><b>9 Terminally Ill</b> - Approaching the end of life. This category applies to people with a life expectancy &lt;6 months, who are not otherwise evidently frail.</p>	
 <p><b>4 Vulnerable</b> – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being “slowed up”, and/or being tired during the day.</p>	<p><b>Scoring frailty in people with dementia</b></p> <p>The degree of frailty corresponds to the degree of dementia. Common symptoms in mild dementia include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.</p> <p>In moderate dementia, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.</p> <p>In severe dementia, they cannot do personal care without help.</p>	
 <p><b>5 Mildly Frail</b> – These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.</p>	<p>* 1. Canadian Study on Health &amp; Aging, Revised 2008. 2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.</p> <p>© 2007-2009. Version 1.2. All rights reserved. Geriatric Medicine Research, Dalhousie University, Halifax, Canada. Permission granted to copy for research and educational purposes only.</p> 	
 <p><b>6 Moderately Frail</b> – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.</p>		

**Bronchodilators in the ED only**

- First line (if suitable): Use 1 puff of Salbutamol via the spacer device every 30-60 seconds, up to 10 puffs, then reassess.
- Nebulisers use should be carefully considered and used when necessary (e.g. severe/life-threatening asthma)
  - Use "closed-circuit" nebuliser system with mouthpiece and filter
  - If needed – administer in the side/isolation room (if available, do not delay treatment waiting for same), ideally with patient to switch on once healthcare worker has left room.
  - Staff not to re-enter room until minimum 20 minutes after completion of nebuliser.
  - COCH ED are treating nebulisers as a AGP

## Cardiac Arrest

- **Cardiac arrest call specifying “Corona Virus” by attending nurse**
- **All PPE precautions take priority to ensure safety first**
- **If via Ambulance Service**
  - Senior Doctor/ACP to attend ambulance and clinical judgement made as to whether to continue resus attempt
  - Transfer to minors area if required

### **Resus Council Guideline**

- Patients for whom a ‘DNACPR’ and/or similar decision is appropriate should be identified early.
- Minimum PPE for ALL responders to the cardiac arrest
  - FFP3 mask
  - Eye protection
  - Plastic apron
  - Gloves
- Safety
  - Staff safety paramount
  - Minimise staff in area – bare minimum to enter
  - Start CPR with chest compressions even if presumed aetiology is hypoxia
- Recognition of cardiac arrest
  - Look for absence of signs of life and normal breathing
  - Palpate carotid pulse
  - Do NOT listen/feel for breathing by placing face near patient
  - If in any doubt, commence chest compressions
- BLS
  - Compression only CPR
  - If patient receiving supplemental oxygen, leave mask on patient’s face during CPR
- ALS
  - Defibrillate shockable rhythms rapidly, 3 x sequential shocks is recommended - the early restoration of circulation may prevent the need for airway and ventilatory support
  - Airway interventions must be carried out by experienced individuals (e.g. supraglottic airway (SGA) insertion or tracheal intubation).
- Decontamination
  - Dispose of, or clean, all equipment used during CPR following the manufacturer's recommendations and local guidelines
  - Ensure equipment used in airway interventions (e.g. laryngoscopes, face masks) is not left lying on the patient’s pillow, but is instead placed in a tray. Do not leave the Yankauer sucker placed under the patient’s pillow; instead, put the contaminated end of the Yankauer inside a disposable glove.
  - Remove PPE safely to avoid self-contamination and dispose of clinical waste bags as per local guidelines. Hand hygiene has an important role in decreasing transmission. Thoroughly wash hands with soap and water; alternatively, alcohol hand rub is also effective.



Resuscitation Council (UK)

## ALS Algorithm in pts with POTENTIAL or confirmed COVID-19

**STOP : put on full PPE. FFP3 mask, double gloves, gown and visor.**

1) Even in presumed hypoxic arrest start with chest compressions and avoid rescue breaths

2) Feel for pulse don't listen and feel for breathing.

3) EARLY intubation.

4) If needed do two person BVM ventilation with very tight seal

Unresponsive?  
Not breathing or  
only occasional gasps

Call  
resuscitation team

Tell them  
potential  
Covid-19

**CPR 30:2**  
Attach defibrillator / monitor  
Minimise interruptions

Assess  
rhythm

**Shockable**

(VF / Pulseless VT)

**Non-Shockable**

(PEA / Asystole)

**Defibrillate shockable rhythms quickly - early restoration of circulation may prevent the need for airway and ventilatory support.**

1 Shock

Return of  
spontaneous  
circulation

Immediately resume  
**CPR for 2 min**  
Minimise interruptions

Immediate post cardiac  
arrest treatment

- Use ABCDE approach
- Controlled oxygenation and ventilation
- 12-lead ECG
- Treat precipitating cause
- Temperature control / therapeutic hypothermia

Immediately resume  
**CPR for 2 min**  
Minimise interruptions

Most experienced person possible to intubate

### During CPR

- Ensure high-quality CPR: rate, depth, recoil
- Plan actions before interrupting CPR
- Give oxygen
- Consider advanced airway and capnography
- Continuous chest compressions when advanced airway in place
- Vascular access (intravenous, intraosseous)
- Give adrenaline every 3-5 min
- Correct reversible causes

### Reversible Causes

- Hypoxia
- Hypovolaemia
- Hypo-/hyperkalaemia / metabolic
- Hypothermia
- Thrombosis - coronary or pulmonary
- Tamponade - cardiac
- Toxins
- Tension pneumothorax

### After Arrest:

- Remove PPE as per donning and doffing instructions.
- Throw away all disposable equipment.
- Clean other equipment with Chlor Clean wipes (orange top bottle)
- All rubbish should be double bagged and taken to the Covid bin by a porter.

# Emergency Department Nursing Staff

## **RED** Zone Action Card

Ensure patient has surgical mask in place

Place into appropriate cubicle as per isolation criteria

Appropriate PPE issued to family members (minimal number)

Ensure safe donning of PPE

Undertake observations/investigations if required

Ensure safe doffing and disposal of PPE  
ENSURE MASK REMOVED LAST

# Emergency Department Medical Staff

## RED Zone Action Card

Patient identified as potential Covid-19 patient



Isolated as per department policy



Use appropriate PPE (see guide)



Appropriate investigations and management  
See 'General Principles' information



Ensure safe doffing and disposal of PPE

# Emergency Department Reception Staff

## Action Card

If patient **contacts** the reception desk regarding potential Covid-19

Advise patient to contact NHS 111

If further discussion required streaming nurse to speak with patient

NTL/senior medical team to risk assess

If patient **attends** the reception desk with shortness of breath and fever

Give patient mask

Notify streamer to review patient urgently

Streamer to re-direct to NHS 111 if appropriate

If not appropriate – see Isolation plan



# Emergency Department ISOLATION plan

## Action Card

Patients should be isolated if presenting with signs of respiratory disease

OR after clinician assessment and needs admission with  
Clinical or radiological evidence of pneumonia  
ARDS  
Influenza-like illness

### RED ZONE

Cubicle 7 – allocated as RED zone resus

Current cubicles – 1, 2, 3, 5, 11, 13 and 14

Side rooms 4, 7 and 10 for any aerosol generating procedures

# Emergency Department RELATIVES plan

## Action Card

### Relatives

Ideally should go home and contact NHS 111 for further advice  
If remain with patient (maximum of 1 in RED zone), consideration must be given  
to wearing appropriate PPE depending on prior exposure

- Ensure good hand hygiene

# Emergency Department PPE Guide






## Emergency Department PPE for suspected and confirmed cases of COVID-19

**Patient** - normal surgical mask

**Relative(s)** - normal surgical mask, standard apron and gloves

### STAFF

Stage 1 Precautions	Stage 2 Precautions	Stage 3 Precautions
		
<p><b><u>Equipment</u></b></p> <p>Type IIR fluid repellent surgical mask</p> <p>Gloves</p> <p>Standard apron</p> <p>Eye protection</p> <p><b><u>Indications</u></b></p> <p>All non-high risk clinical areas</p> <p>Triage/Streaming</p>	<p><b><u>Equipment</u></b></p> <p>Type IIR fluid repellent surgical mask</p> <p>Eye protection (integrated visor or goggles)</p> <p>Gloves</p> <p>Long-sleeved apron</p> <p><b><u>Indications</u></b></p> <p>Risk of exposure to blood/bodily fluids (e.g. actively coughing ++)</p>	<p><b><u>Equipment</u></b></p> <p>FFP3 disposable respirator or Jupiter hood (if fit tested)</p> <p>Visor</p> <p>Double gloves</p> <p>Fluid repellent long-sleeved gown</p> <p><b><u>Indications</u></b></p> <p>All staff in RED zone</p> <p>Aerosol generating procedure (e.g. resuscitation, CPR, intubation, NIV)</p>

# Emergency Department Streamer

## Action Card

If patient with present with either

Symptoms of pneumonia, ARDS or influenza

Does the patient require hospital admission with either clinical or radiological evidence of pneumonia or acute respiratory distress syndrome, or influenza-like illness?

(fever  $\geq 37.8^{\circ}\text{C}$  and at least one of the following which must be of acute onset: persistent cough (with or without sputum), hoarseness, nasal discharge or congestion, shortness of breath, sore throat, wheezing, sneezing)

Or

Pyrexial and history of foreign travel or contact with confirmed case of Covid-19

Consider re-directing to NHS 111 if well

Ensure patient (and relatives) has surgical mask

Liaise with NTL regarding isolation location

Ensure hand hygiene

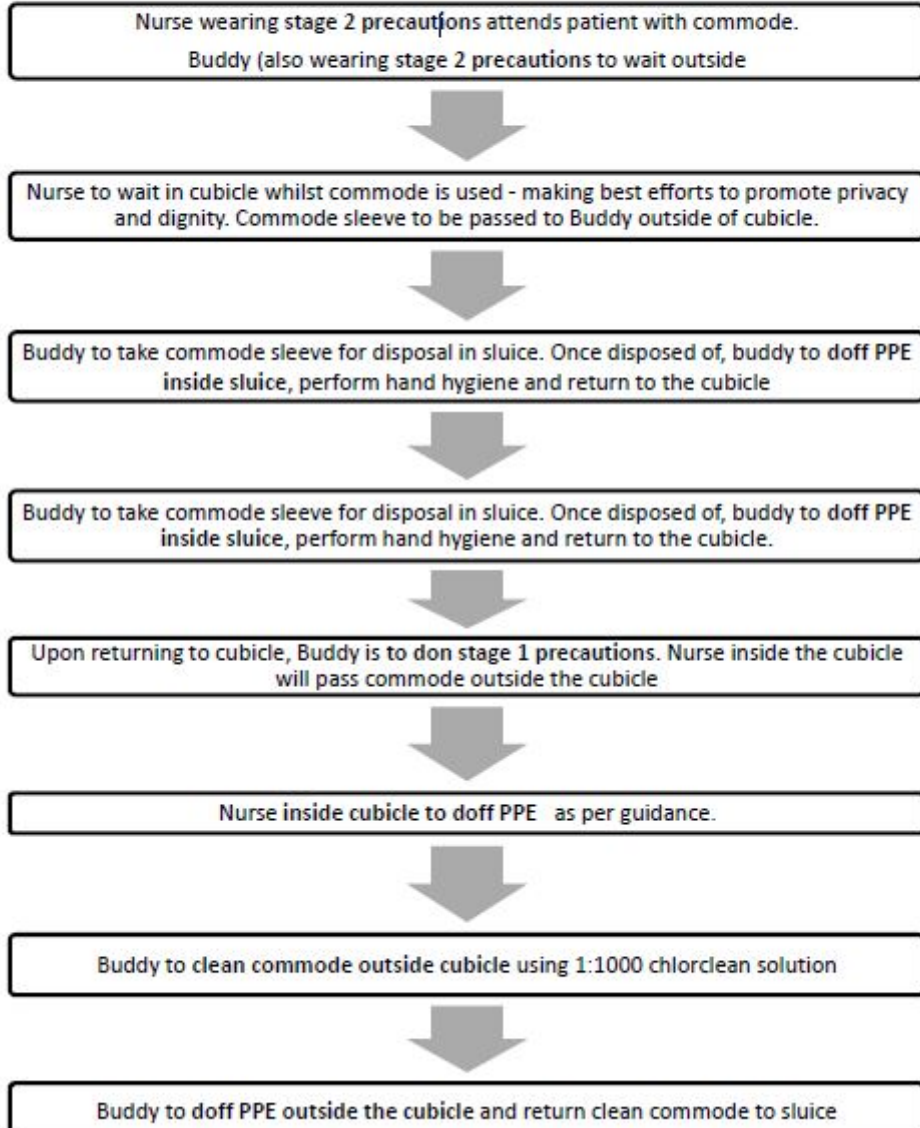
# Emergency Department

## Blood Sampling

- All specimens and request forms should be marked with a **biohazard label**.
  - The specimen should be **double-bagged**. The specimen should be placed in the first bag in the isolation room by a staff member wearing recommended PPE.
  - Specimens should be **hand delivered to the laboratory** by someone who understands the nature of the specimens.
- Pneumatic tube systems must not be used to transport specimens.

# Emergency Department Commode SOP in Red Zone





A standard operating procedure guide for the use of a Commode in RED Zone








# Emergency Department

## Covid-19 Swab Collection

### CORONAVIRUS (COVID-19) SPECIMEN COLLECTION AND PACKAGING FOR TRANSPORT TO THE LABORATORY

<p>Step 1</p> <p>Staff Member collecting specimen</p>	<ul style="list-style-type: none"> <li>Generate meditech order requests -</li> </ul> <table border="1"> <thead> <tr> <th>Category</th> <th>Procedure</th> <th>Procedure Name</th> </tr> </thead> <tbody> <tr> <td>1 MICRO</td> <td>MIC.CORNT</td> <td>MIC.CORONAVIRUS Nose + Throat</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Category</th> <th>Procedure</th> <th>Procedure Name</th> </tr> </thead> <tbody> <tr> <td>1 MICRO</td> <td>MIC.INFNT</td> <td>MIC.INFLUENZA TEST NOSE&amp;THROAT</td> </tr> <tr> <td>2</td> <td></td> <td></td> </tr> </tbody> </table> <p>Place both order request stickers onto ONE microbiology specimen form</p>  <p>The single specimen will be processed for both COVID-19 and Influenza.</p>		Category	Procedure	Procedure Name	1 MICRO	MIC.CORNT	MIC.CORONAVIRUS Nose + Throat	Category	Procedure	Procedure Name	1 MICRO	MIC.INFNT	MIC.INFLUENZA TEST NOSE&THROAT	2		
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<p>Step 1</p> <p>Staff Member collecting specimen</p>		<ul style="list-style-type: none"> <li>Label specimen vial before entering the room</li> <li>Collect nose and throat swabs (and sputum specimen if patient is expectorating).</li> </ul>															
<p>Step 2</p> <p>Staff Member collecting specimen</p>	 	<ul style="list-style-type: none"> <li>Place vial in the first specimen bag.</li> <li>Remove any air from the specimen bag.</li> <li>Seal the specimen bag.</li> <li>Roll the specimen bag to make it easier to place into the second specimen bag.</li> <li>NOTE: SPECIMEN BAG MUST BE INTACT (NOT HAVE PUNCHED HOLES IN)</li> </ul>															

<p>Step 3</p> <p>Staff Member collecting specimen and Buddy</p>		<p>HOLES IN)</p> <ul style="list-style-type: none"> <li>Buddy to stand outside of the room with second specimen bag held open.</li> <li>First responder to reach across the threshold to the room and place the first rolled up specimen bag into the second specimen bag being held open by the Buddy.</li> <li>Take care to ensure no direct contact occurs between the Buddy and the first specimen bag.</li> </ul>
<p>Step 3</p> <p>Buddy</p>		<ul style="list-style-type: none"> <li>Remove any air from the second specimen bag.</li> <li>Seal the second specimen bag.</li> <li>Roll the second specimen bag (as above) to make it easier to place into the microbiology specimen request form.</li> <li>NOTE: SPECIMEN BAG MUST BE INTACT (NOT HAVE PUNCHED HOLES IN)</li> </ul> <p>Note: This will need to be repeated if a sputum specimen has been collected, as specimens must be double-bagged separately.</p>
<p>Step 8</p> <p>Buddy</p>	 	<ul style="list-style-type: none"> <li>Place the double bagged specimen into the blue microbiology specimen request form</li> <li>Ensure the correct specimen request form is used.</li> <li>DO NOT use any specimen request form with a 'FLU' label attached.</li> <li>Ensure all details are completed in full on each form.</li> <li>It is <b>essential</b> that the following information is included:                             <ul style="list-style-type: none"> <li>COVID-19 risk written on the form</li> <li>Clinical details</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>Travel history</li> <li>Any contact with a confirmed case of COVID-19</li> </ul> <p>Note: complete a separate specimen request form for 1) nose/throat swabs and 2) sputum specimens</p>
<p>Step 10</p> <p>Buddy</p>		<ul style="list-style-type: none"> <li>Place the specimen into a blue microbiology bag for prompt delivery to Pathology Reception.</li> </ul>

## Emergency Department

# Aerosol Generating Procedures (AGP) Guidance

The agreed list of AGP is:

- Intubation, extubation and related procedures such as manual ventilation and open suctioning
- Tracheotomy/tracheostomy procedures (insertion/open suctioning/removal)
- Bronchoscopy
- Surgery and post-mortem procedures involving high-speed devices
- Some dental procedures (such as high-speed drilling)
- Non-invasive ventilation (NIV) such as Bi-level Positive Airway Pressure (BiPAP) and Continuous Positive Airway Pressure ventilation (CPAP)
- High-Frequency Oscillating Ventilation (HFOV)
- High Flow Nasal Oxygen (HFNO), also called High Flow Nasal Cannula
- Induction of sputum

Where AGPs are medically necessary, they should be undertaken in a negative-pressure room, if available, or in a single room with the door closed.

Only the minimum number of required staff should be present, and they must all wear PPE as per guidance. Entry and exit from the room should be minimised during the procedure.

If AGPs are undertaken in the patient's own room, the room should be decontaminated 20 minutes after the procedure has ended.

If a different room is used for a procedure it should be left for 20 minutes, then cleaned and disinfected before being put back into use.

Clearance of any aerosols is dependent on the ventilation of the room. In hospitals, rooms commonly have 12 to 15 air changes per hour, and so after about 20 minutes, there would be less than 1 per cent of the starting level (assuming cessation of aerosol generation).

If it is known locally that the design or construction of a room may not be typical for a clinical space, or that there are fewer air changes per hour, then the local IPCT would advise on how long to leave a room before decontamination.



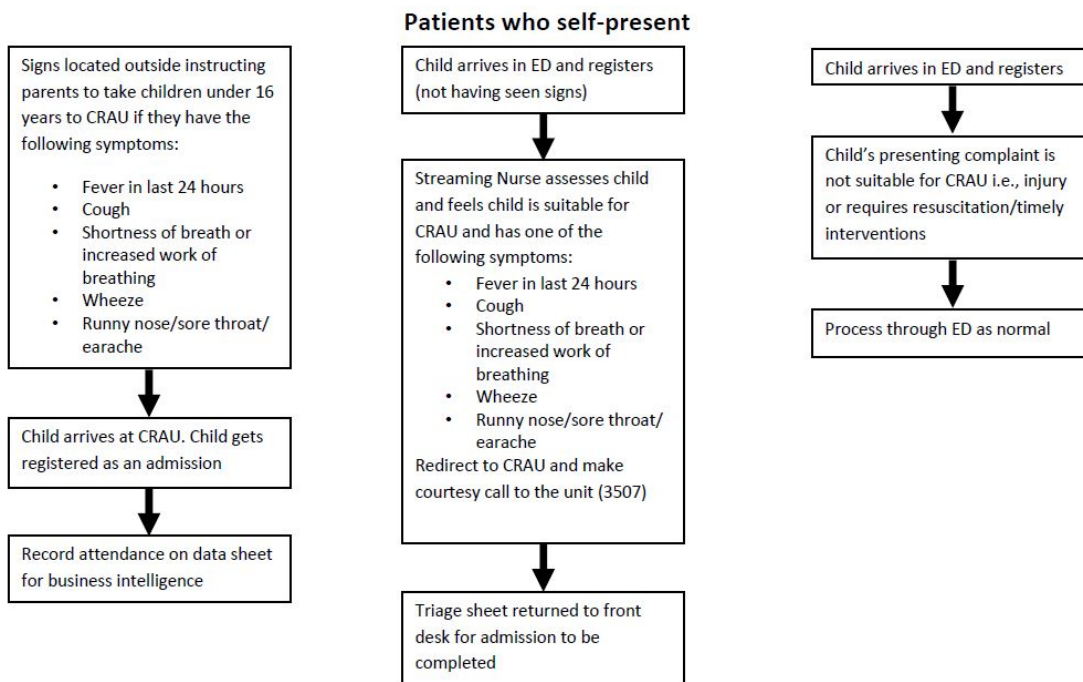
## **Emergency Department**

### **Trolley/Wheelchair Cleaning – PIT STOP**

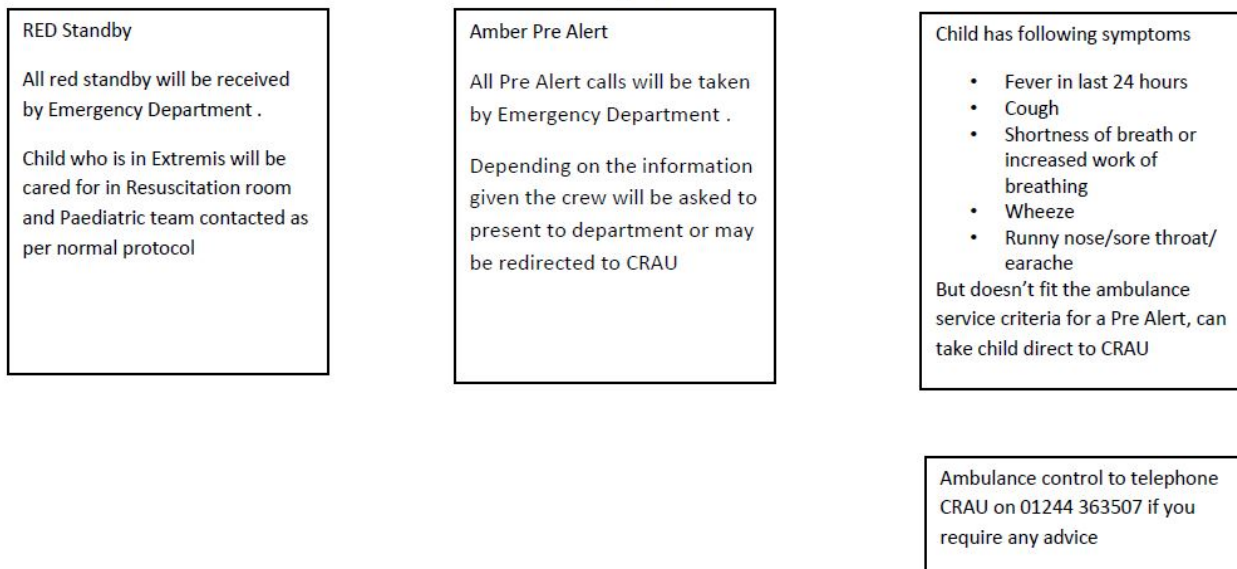
All trolleys and wheelchairs should be cleaned on entering the ED from the main hospital

Equipment stored on room on left as entering department from main hospital corridor

# Emergency Department – PAEDIATRIC flow



## Children arriving by Ambulance



## Emergency Department – O&G flow

### Streaming of Obstetric & Gynaecology Patients during the COVID-19 escalation period

#### **Gynaecology patients** (can be direct referred from triage):

For patients not suspected of COVID-19:

Between 08:00 and 20:00

Bleep gynaecology SHO to give the patient details and transfer the patient to the Gynaecology Assessment Unit

Between 20:00 and 08:00

Bleep the gynaecology SHO to give the patient details and place the patient in either Majors (blue Zone) or ambulatory majors to await review by the gynaecology SHO

For well patients suspected of COVID-19 (either in the same household as a suspected COVID positive or has mild symptoms) give the patient a facemask and:

Between 08:00 and 20:00

Bleep gynaecology SHO to give the patient details and transfer the patient to the COVID 19 area in the Gynaecology Out-patient department

Between 20:00 and 08:00

Bleep the gynaecology SHO to give the patient details and place the patient in RED majors to await review by the gynaecology SHO

#### **Obstetric patients:**

They will need to be seen by an ED doctor/ ANP and referred to the obstetric registrar on-call who will arrange transfer to the most suitable area

Prepared by Dr M Thevendra 26/3/20

# Emergency Department – Staff Social Distancing

## Social Distancing in the Coffee Room

**Don't let your guard down once you have removed your PPE!**

**Viruses don't take breaks....**

**Eating and drinking gives a direct route of access for the virus.**

1. Wash hands thoroughly before eating /drinking
2. Consider keeping personal cutlery and crockery from home in your bag.
3. If using departmental crockery – **ensure this is washed, dried and put away after use.**
  - a. We must have ZERO tolerance of cutlery/crockery being left in the sink or on the draining board. Don't leave it to dry/drain – **dry and put away!**
4. Avoid sharing communal food from a communal container.
5. Keep tables clear of all personal items and clean with red sani-cloth/clinell after each use.
6. **Try to maintain the 2m distancing guideline**
  - a. Minimum is 1m – if you can stretch your arm out and touch someone – you are too close.
  - b. Some chairs have been removed to facilitate this.
  - c. Additional seating is available:
    - i. Mr Laundry's office is open 24hrs and all are welcome to use.
      - Clean desk with sani-cloth/clinell after use.
    - ii. Two chairs in the corridor by the notice board.
    - iii. Further chairs in the overflow room (adjacent to disabled toilet on ED corridor, near exit onto hospital street).

# Emergency Department – Oxygen Guidance

[Publications approval reference: 001559](#)



Specialty guides for patient management during the coronavirus (COVID-19) pandemic

## Clinical guide for the optimal use of Oxygen therapy during the coronavirus pandemic

9 April 2020 Version 1

As the number of patients with coronavirus (COVID-19) infection requiring hospital care increases, there will be increases in the use of advanced respiratory support, such as assisted ventilation. Assisted ventilation places demand on the flow of oxygen delivery within hospitals.

To support prioritisation of oxygen flow for the most severely ill patients in hospital:

- **Oxygen prescribing targets** for all adults treated in NHS hospitals should be adjusted from the current range (of oxygen saturation 94% - 98%) to oxygen saturation 92% - 96% in the first instance.
- **COVID-19 infection and non-COVID-19 conditions** (e.g. stroke, myocardial infarction, trauma) in adults should use this SaO<sub>2</sub> target.
- **Evidence from clinical trials** suggests that hyperoxia may be harmful and lower oxygen target ranges are safe.
- **A target range of 90% - 94%** may be considered if clinically appropriate by hospitals according to prevailing oxygen flow demands.

### References:

Chu et al. Mortality and morbidity in acutely ill adults treated with liberal versus conservative oxygen therapy (IOTA): a systematic review and meta-analysis. *Lancet* 2018;391:1693 – 705

Siemieniuk et al. Oxygen therapy for acutely ill medical patients: a clinical practice guideline. *BMJ* 2018;363:k4169

# Emergency Department – Medical Triage

## Clinical Triage Tool for suspected COVID-19 patients

3 Key Actions to improve patient safety and reduce risk

3 Key Clinical Categories – Tick/Document the most appropriate Category for the patient

**Action 1:** Ask: *Would I be happy for this patient to be cohorted with other definite COVID-19 positive patients?*

**Yes**  - Suggests a **High** clinical probability of COVID-19 – Category 1

**No**  - Suggests a **Low** clinical probability of COVID-19 – Category 2

**Action 2:** Specify a COVID-19 pre-test probability using the most fitting Category below to decide in which cohort area they should reside whilst awaiting SARS-CoV-2 results.

- Category 1: Extremely Vulnerable Cohort
- Category 2: High Clinical Probability of COVID-19
- Category 3: Low Clinical Probability of COVID-19

*Please see details overleaf to help you decide which category to use*

### Action 3: Documentation of the COVID-19 Category

- Document the Category as Free Text in the Comments box on Teletracking in ED
- Document as part of the Post-Take Ward Round plan and liaise with the nurse in charge if the patient is not in the appropriate cohort area

#### Category 1: Extremely Vulnerable Cohort

- Side-room/Isolation Priority
- Extremely vulnerable patients may present **atypically** with COVID-19 – putting others at risk – assume to be positive until proven otherwise at present

#### Extremely Vulnerable Cohort – ‘At Risk’ patients:

- Organ transplant with ongoing immunosuppression
- Cancer and undergoing active chemotherapy or radiotherapy
- Cancers of the blood/bone marrow such as leukaemia/lymphoma/myeloma at any stage of treatment
- On immunosuppression therapies sufficient to significantly increase risk of infection such as high dose steroids, methotrexate, azathioprine, tacrolimus, ciclosporin, mycophenolate, leflunomide or biological agents such as Humira (Adalimumab), Infliximab (Remicade)
- Severe chest conditions such as cystic fibrosis or severe asthma (For instance; past Critical care admissions/frequent admissions with asthma, regular oral steroid use)
- Other targeted cancer treatments which can affect the immune system
- Bone marrow or stem cell transplants in the last 6 months and still taking immunosuppression, or within 2 years of transplant
- Women who are pregnant with significant heart disease (congenital or acquired)
- Renal dialysis patients

#### Category 2: High Clinical Probability of COVID-19

##### PHE case definition – Rule In COVID-19

- ARDS on CXR/CT - very predictive in the present climate
- Influenza Like Illness – Temp > 37.7 and acute onset LRTI and/or new onset of URTI symptoms
- Clinical or radiological evidence of pneumonia

##### The following features when present increase the pre-test probability

- Exposure to known case of COVID
- Pneumonia with bilateral, basal predominance and/or interstitial changes
- Low lymphocyte count
- Low platelet count
- Raised ALT
- Hypoxia with high Oxygen needs – especially greater than 40% or 15L NRB
- Pronounced sudden onset fatigue/lethargy
- Sudden onset anosmia/taste loss/dysgeusia
- Atypical COVID-19 with GI symptoms - abdominal pains, vomiting, diarrhea
- Absence of another diagnosis/infection

##### Use of the following is not always needed, however if present increases the probability

- High ferritin >1000
- Significantly raised d-dimer
- LDH > 350

#### Category 3: Low Clinical Probability of COVID-19

- Another diagnosis is more likely. For instance bacterial respiratory, urine, skin or CNS infection
- Given the high prevalence of COVID-19 wish to **rule it out**, hence sample
- There is a lack of classical features of COVID-19 as detailed in Category 1 above