GUIDANCE ON THE INITIAL MANAGEMENT OF AN INFECTIOUS PATIENT NEEDING CRITICAL CARE SUPPORT IN THE ROYAL DERBY HOSPITAL: VERSION 2

This document is responding to the rapidly evolving COVID-19 outbreak and will almost certainly require modification as the epidemiology changes and Public Health England (PHE) and NHS England (NHSE) revise their guidance. Many colleagues are working very hard but for brevity contact myself Craig Morris on ICU or Richard Curtis in anaesthesia for any clarification or feedback.

Date of writing: 12 March 2020
Contact: Dr Craig Morris
Cancelled date: Remains valid

Managing a COVID-19 patient in the Royal Derby Hospital

We may be asked to review ED, ward patients and certain areas have direct access eg maternity services. Patients presenting for other pathologies with incidental COVID19 please refer to separate circulated guidance.

1) Patients with an acute respiratory illness, coryzal symptoms or isolated acute diarrhoea (10% of cases) for the current time should be considered as "suspected" COVID-19 until proven otherwise. Pragmatically our patients at presentation will almost typically be "suspected" COVID-19 and not "confirmed" as test results are currently taking over 24 hours. Travel history is no longer of use.
2) Remote review is the preferred option and on most occasions ICU clinicians will review collected observations, radiographs and investigations or observe a patient outside their room. We strongly advise against physical examination as it gets you too close and uses fomites. Repeat reviews are the responsibility of the parent team.
3) Patients will be declared **"ward fit"** or **"requiring intubation"**. This decision will be made by the ICU team. Patients will not to be transferred to ICU/ HDU for monitoring or high flow oxygen therapy. Any future review of "ward fit" patients will be agreed by liaison between the ICU team and parent team but to restrict further transmission we will typically not arrange routine physical review and rely on alerts from parent team
4) We are resisting detailed criteria for declining ICU/ HDU care but in general patients with a weight >150kg (or BMI >40) who cannot be managed prone will be declined. Patients of advanced age and/ or with extensive co-morbidities make poor ICU/HDU candidates generally and especially with COVID-19 and are likely to be declined for escalated care because of poor outcomes. Patients with severe lung disease and poor rehab potential are likely to be declined.
5) There is little place for humidified high flow oxygen or NIPPV on ICU/ HDU and this risks disseminating COVID-19 through the immediate environment and these therapies will not be offered ie ICU/ HDU transfer is for intubation and mechanical ventilation.
6) If the ICU team feel the patient is "**requiring intubation**" this will typically be done in the immediate clinical setting. The risks of transferring a non-intubated patient in respiratory failure through the hospital and are considerable.

7) The ICU team will comprise 3 individuals who will bring their own equipment and will intubate and support the patient, see below. A guideline for HCID level PPE for RDH ICU/HDU is circulated separately. Familiarise yourself with it, take ownership! The team comprises an ICU doctor, an intubation assistant (ICU nurse or ODA) and a PPE trained assistant for donning and doffing and other tasks. All 3 staff must be trained and PPE proficient and in general the ICU doctor and intubation assistant should touch nothing other than the patient and kit connected to them.
8) Once intubated the cuff is inflated with 10ml of air or the cuff feels tight (pressures are not checked). Positive pressure ventilation does not start until the cuff is inflated and the endotracheal tube has a filter on it. The patient's endotracheal tube should have a yellow rectangular Intersurgical "Filta-Guard Breathing Flow" 1944000 (*not* the green basic HMEF) applied and in the short term one may regard *respiratory* COVID-19 as contained until the circuit is broken. NOTE this is a filter not moisturising and not appropriate for longer term IPPV on ICU. Body secretions or physical contact with the patient remain a risk and should be managed with full PPE (below) and clinicians should strenuously avoid breaking of the circuit (eg tracheal suction) and particular attention to contaminating unnecessary equipment (eg stethoscopes) is essential
9) The intubated patient should be transferred to the cohorted ICU side 2 at the earliest opportunity. For now entry and access to ICU is along the conventional access corridor
10) Patients will be ventilated using a disposable self-inflating bag or a Water's circuit with high flow oxygen, with an HMEF in line. Again, disconnection is to be avoided. Where this is essential ventilation should stop, exhalation occur, the ETT clamped (blue clamps in grab bag) and ideally all interventions should be done keeping the filter intact on the endotracheal tube
11) For stability, to expedite transfer and avoid infusions use ketamine (100mg intubation and 100mg transfer) and neuromuscular blockade (rocuronium 100mg boluses) and intermittent boluses of pressor as required. Invasive monitoring prior to transfer is discouraged and the unstable intubated patient should be transferred to ICU as soon as possible; this will be with oximetry and capnography and palpation of a pulse
12) A patient deemed appropriate appropriate for ICU/HDU should typically not be transferred without their airway secured. If this does occur the patient should wear a basic surgical mask to avoid large droplet contamination of others and use dry oxygen through a non-rebreathing mask (not humidification). The patient must be admitted directly to an ICU cohort area to prevent contamination and transfer should not occur until the destination side room is available and confirmed by the ICU nurse in charge
13) When the patient is connected to an ICU ventilator the endotracheal tube should be clamped. Bagging stops. The circuit is disconnected and an ICU circuit attached with a green 1941001 HMEF at the patient end and yellow 1944000 at the entry and exit ports of the ventilator
14) Subsequent ICU care will be as dictated by the trust in liaison with PHE and NHSE but all healthcare staff with contact with the patient should be limited in numbers, have PPE and be competent in its use and have assistance with donning and doffing. More specific guidance on further ICU care is being prepared.

15) This is a high risk tracheal intubation. In the event of "can't intubate and can't ventilate" this patient is not to be "woken up" as they were already in respiratory failure. Emergency tracheal access and front of neck access will **not** be performed. NMBA will be maintained with sedation and a cuffed laryngeal mask airway inserted and transfer will be expedited if the patient remains viable (not necessarily stable).
16) Once intubated the same PPE should be kept worn by the intubating doctor and intubating assistant and their gloves cleaned with alcohol wipe ie do *not* doff at this stage. They should touch nothing other than the patient, the trolley or equipment directly contacting the patient. The PPE assistant can help with phone calls, doors and the like and should not contact the patient directly.
17)

Yellow filter for machine protection and for use briefly on transfer. Does not humidify.
1944000

Green filter for patient humidification and filtration. Stocks are increasing.
1941001

Existing standard green filter. It still offers very good protection and if it is the only one available USE IT!
1541000

MINIMUM PPE REQUIREMENTS FOR ICU CARE "SUSPECTED" COVID-19 PATIENT

This section has been removed as separate RDHI UCU HCID level PPE guidance is available and attached. Suffice to say it comprises complete cover from top of the head to the feet when caring for a ventilated patient. For non-ventilated patients or where aerosols are minimal a 2m distance and avoiding contact >15 minutes with rigorous hand washing or hand gel remain valid protection.
Doffing is an especially hazardous time for all and needs a trained assistant.

1) Contaminated equipment (eg laryngoscope blades, bougie) should be placed in a large sharps bin and this should be made apparent to the clinical area where it was used and sealed and disposed of according to trust guidance. Sorting through contaminated waste for appropriate bin bags is discouraged. Disposable kit is increasingly being sourced but re-useable contaminated equipment should be kept with the patients and bought back to ICU for decontamination
2) In general minimum items should accompany the patient and we discourage personal possessions and next of kin on transfers. In the event of cohorting there will be significant visiting restrictions to the patient on ICU/ HDU. Existing patient notes should stay with the patient as contaminated items and handled by the ICU doctor or their intubating assistant. New notes will be used on ICU/ HDU prepared in clean conditions.
3) Heavily contaminated PPE should be left at the site in a large sharps bin and facilities alerted by the area this occurred in.
4) This guidance should be read in conjunction with the pictoral ICU PPE guidance
5) For now we have resisted flowcharts and checklists as they are fomites at the scene and frankly unlikely to be read during a stressful intubation. For now intubations will be performed by a small cohort of PPE trained staff. As the situation evolves this will be reviewed weekly.

Resources
https://www.ics.ac.uk/COVID19.aspx?hkey=d176e2cf-d3ba-4bc7-8435-49bc618c345a&WebsiteKey=10967510-ae0c-4d85-8143-a62bf0ca5f3c

Royal Derby ICU/ HDU
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Please refer to dates above for latest version and validity