Specialty guides for patient management during the coronavirus pandemic

Clinical guide to adult critical care during the coronavirus pandemic: staffing framework

This guidance is correct at the time of publishing. However, as it is subject to updates, please use the hyperlinks to confirm the information that you are disseminating to the public is accurate.
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1. Background and definitions

In order to match the increasing demands that the coronavirus pandemic will place on critical care, new and flexible models of care are required. This document sets out:

- Principles for deployment and redeployment of staff to match the needs of a critical care department, independent of where this care is delivered.

- Indicative staffing ratios and competencies

- Suggests professional groups that could potentially form part of this new workforce during times of surge and super-surge.

**Surge**: Increased activity supported by reducing other routine activity (e.g. elective / non-urgent surgery and outpatient appointments).

- This will allow operating theatres, recovery wards and similar areas to provide critical care for an increased number of patients.

**Super-surge**: increased activity which requires new critical care units to be created.

- Additional resources required includes:
  - *Equipment* - e.g. ventilators, monitors, syringe drivers
  - *Consumables* e.g. oxygen, central line insertion sets
  - *Staff* – the most valuable resource
  - *Extra beds* - these may be created within independent sector hospitals or new field hospitals.

This is a working document created during an evolving situation. It will be updated based on emerging experience.
2. Principles

Safe for staff and patients:

- **Personal Protective Equipment:** All staff who may potentially need to wear PPE must be trained in how to don and doff it before taking on a clinical role.

- **Competencies:** Contracted staff should work within their usual frame of competence and experience but may have to work outside their usual teams and hierarchies. [https://www.gmc-uk.org/news/news-archive/how-we-will-continue-to-regulate-in-light-of-novel-coronavirus](https://www.gmc-uk.org/news/news-archive/how-we-will-continue-to-regulate-in-light-of-novel-coronavirus)

- **Flexibility:** The types of staff who might fit into different roles are indicated in Section 3. Ideally all redeployed staff, should self-assess their suitability to perform the required task, under supervision, in order to confirm their suitability. An example framework is given in the appendix.

- **Returning members of staff:** should also self-assess according to their competence, which may depend on their length of time away from practice. They will need to be placed initially based on this assessment recognising that this may quickly improve after a return to practice.

- **Resilience:** Staff should ideally not be removed from roles which would leave urgent or emergency non-COVID pathways understaffed or with inexperienced staff (e.g. ED, emergency surgery, labour ward etc).

- **Staff ratios:** Aim for 1:1 or 1:2 bedside staff to patient ratios even at time of super-surge by augmenting the usual workforce with a Bedside Support Worker sourced from the student workforce and other professions. Nursing staff are supported in this: [https://www.england.nhs.uk/coronavirus/secondary-care/management-confirmed-coronavirus-covid-19/developing-immediate-critical-care-nursing-capacity/](https://www.england.nhs.uk/coronavirus/secondary-care/management-confirmed-coronavirus-covid-19/developing-immediate-critical-care-nursing-capacity/).

The staffing ratios in this framework are a guide and will need to be tailored depending on local circumstances and geographical layouts.
• **Support:** Both new and existing staff are at high personal physical and mental health risk. Local teams should consider how they can support their staff working in challenging circumstances and unfamiliar environments.

• **Induction:** and training should include PPE training (face-to-face/simulation), basic life support (online) and induction/orientation to their working environment.

• **Rota management:** must allow adequate training, support and rest

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**Efficient:**

• **Designated teams:** should deliver routine tasks for whole wards or hospitals - see cross-cutting teams section.

• **Define Roles:** All staff should have their role clearly defined and identified (including while wearing PPE). This will facilitate communication and appropriate distribution of tasks.

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**Patient-centred:**

• **Communication:** Include teams who can support communication with patients and families include escalation/de-escalation plans - see cross-cutting teams section.

• **Responsibility:** Every staff member has a responsibly to contribute to patient care as part of the wider critical care team, according to their competency.
3. Staffing structures and ratios

3.1 Nurse Staffing for Critical Care

**NURSING STAFFING**

- **Category ‘B’**
  - Non-critical Care Nurses / Multi-professionals
  - 1:1

- **Category “A”**
  - Registered Nurses with some previous knowledge / transferable skills
  - 1:4

- **Critical Care Nurse**
  - With critical care competencies / experience
  - 1:6

- **Senior Critical Care Nurse**
  - 1:16

- **Critical Care Lead Nurse/ Matron**
  - 1:32

**KEY RESPONSIBILITIES**
- (but not necessarily limited to)
  - Patient Hygiene
  - Basic Mouth and Eye Care
  - Pressure Area Care
  - Observation recording
  - Escalation of concerns
  - Bedside scribe

**KEY COMPETENCIES**
- BLS
  - Basic Nursing Care

**CONSIDER**
- Theatre Nurses
- Nursing students
- CPD
  - Non-registered nurses
  - Medical Students
  - General Dental Practitioners
  - Other multi-professionals
  - Army personnel
  - Independent Sector

**TRAINING NEED**
- Emergency Induction
- Critical Care orientation
- Observation charts
- Quick look resources
- IV Drug Competence
- PPE

**SUPERVISION**
- TYPE: Direct
  - By: Category ‘A’
  - 1 ‘A RN’ to 4 ‘B’

- TYPE: Direct
  - By: Critical Care Nurse
  - 1 CCN – 6 ‘A RNs’

- TYPE: Direct
  - By: Senior Critical Care Nurse
  - 1 SCCN – 16 CCNs

- TYPE: Direct
  - By: Lead Nurse/ Matron
  - 1 LN/M – 32 SCCNs

**ICU TEAM**
3.2 Medical Staffing for Critical Care

**MEDICAL STAFFING**

**DESK COORDINATOR**
- **1:30**
- **KEY RESPONSIBILITIES**
  - Housekeeping: notes, reports, bookings, referrals etc.

**JUNIOR MIDDLEGRADE**
- **1:15**
- **KEY RESPONSIBILITIES**
  - Reviews daily examinations and reviews prescribing help desk coordinator with referral to other teams or investigation requests if required troubleshooting of issues within their competence.

**SENIOR MIDDLEGRADE**
- **1:15**
- **KEY RESPONSIBILITIES**
  - Organisation of the junior medical team troubleshooting of issues within competence complex referrals to other teams daily reviews.

**SENIOR CLINICIAN**
- **1:30**
- **KEY RESPONSIBILITIES**
  - Leadership general decision making ward rounds general communication with visiting teams etc.

**SUPERVISING CONSULTANT**
- **1:60**
- **KEY RESPONSIBILITIES**
  - Senior clinical decision maker.

**COORDINATING CONSULTANT**
- **KEY RESPONSIBILITIES**
  - Liaise with other services overall coordination of the service communications hub gold command free of clinical duties.

**MEDICAL STAFFING**

**CONSIDER**
- **PY1**
  - GATRIS 1 physician associates surgical care practitioners core trainee of any specialty.

**CONSIDER**
- **CORE TRAINERS OF ANY SPECIALTY**
  - ACCP.

**CONSIDER**
- **CORE OR SPECIALTY TRAINEE WITH AT LEAST 5 MONTHS ICU EXPERIENCE**
  - CRITICAL CARE CONSULTANT: 577 trainees in Anaesthetists division with 6 months of CCT Anaesthetic consultant. PICU consultant medical or surgical consultant with recent and sustained within 2 years critical care experience.

**CONSIDER**
- **CRITICAL CARE CONSULTANT**
  - Consultant with leadership role.

**SUPERVISION**
- **TYPE: DIRECT**
  - Junior middle grade or above.

**SUPERVISION**
- **TYPE: INDIRECT**
  - Consultant or above will be based in a single geographical location.

**SUPERVISION**
- **TYPE: NONE**
  - Will be based in a single geographical location.

**SUPERVISION**
- **TYPE: NONE**
  - Gross cover between different critical care units.

**SUPERVISION**
- **TYPE: NONE**
  - Based in command office rather than clinical unit.

**TRAINING NEED**
- **RESUS, BLS**

**ICU TEAM**
3.3 Allied Health Professionals

**Physiotherapist**
- To assess & provide physiotherapy intervention as indicated

**Speech & Language Therapist**
- To assess & provide SLT intervention as indicated

**DIETICIAN**
- To assess & provide nutrition intervention as indicated

**Occupational Therapist**
- To assess & provide OT intervention as indicated

**Operating Department Practitioner**
- To assess & provide intervention as indicated

**Competencies**
- **Category A**
  - On call trained with the skills in assess and manage patients with respiratory and cardiovascular conditions (CCU).
  - Assessment and management of patients with cardiopulmonary conditions.
  - Assessment and management of patients with respiratory and cardiovascular conditions.
  - Assessment and management of patients with cardiopulmonary conditions.
  - Assessment and management of patients with respiratory and cardiovascular conditions.

- **Category B**
  - Care of patients with chronic respiratory and cardiovascular conditions.
  - Care of patients with chronic respiratory and cardiovascular conditions.
  - Care of patients with chronic respiratory and cardiovascular conditions.
  - Care of patients with chronic respiratory and cardiovascular conditions.

- **Category C**
  - Care of patients with acute respiratory and cardiovascular conditions.
  - Care of patients with acute respiratory and cardiovascular conditions.
  - Care of patients with acute respiratory and cardiovascular conditions.
  - Care of patients with acute respiratory and cardiovascular conditions.

- **Category D**
  - Care of patients with acute respiratory and cardiovascular conditions.
  - Care of patients with acute respiratory and cardiovascular conditions.
  - Care of patients with acute respiratory and cardiovascular conditions.
  - Care of patients with acute respiratory and cardiovascular conditions.

- **Category E**
  - Care of patients with acute respiratory and cardiovascular conditions.
  - Care of patients with acute respiratory and cardiovascular conditions.
  - Care of patients with acute respiratory and cardiovascular conditions.
  - Care of patients with acute respiratory and cardiovascular conditions.

**Consider**
- Understanding the care needs of patients with respiratory and cardiovascular conditions.
- Understanding the care needs of patients with respiratory and cardiovascular conditions.
- Understanding the care needs of patients with respiratory and cardiovascular conditions.
- Understanding the care needs of patients with respiratory and cardiovascular conditions.

**Consider**
- Providing safe and effective care for patients with respiratory and cardiovascular conditions.
- Providing safe and effective care for patients with respiratory and cardiovascular conditions.
- Providing safe and effective care for patients with respiratory and cardiovascular conditions.
- Providing safe and effective care for patients with respiratory and cardiovascular conditions.
.4 Cross-cutting teams

This section advises on proposed team structures and numbers. The number of teams within a unit (ward or hospital) will depend on the size of the unit and should be reviewed daily alongside projected patient figures based on local modelling data.

<table>
<thead>
<tr>
<th></th>
<th>CARDIAC ARREST TEAM</th>
<th>TRANSFER TEAM</th>
<th>MOBILE EMERGENCY RAPID INTUBATION TEAM (MERIT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(at least one per hospital)</td>
<td>(at least one per hospital)</td>
<td>(at least one per hospital)</td>
</tr>
<tr>
<td>STAFF</td>
<td>Usual staffing</td>
<td>• Transfer competent anaesthetic trainee</td>
<td>• Senior (Consultant) Anaesthetist</td>
</tr>
<tr>
<td></td>
<td>No other responsibilities</td>
<td>• Porter</td>
<td>• Middle Grade Anaesthetist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Anaesthetic assistant (ODP, theatre nurse)</td>
<td>• ODP/Anaesthetic Nurse</td>
</tr>
<tr>
<td>ROLE</td>
<td>Cardiac arrest calls ONLY (2222)</td>
<td>• Transfers to and from radiology, ED, between wards etc</td>
<td>• Runner: one of: Healthcare Assistant, Medical Student, Nursing Student, Dental Nurse, FY1 (New starter)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Induction of anaesthesia</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Endotracheal intubation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Insertion of arterial, venous lines and NGT at time of intubation</td>
</tr>
</tbody>
</table>
## RENAL SUPPORT TEAM
### (at least one per hospital)

<table>
<thead>
<tr>
<th>STAFF</th>
<th>ROLE</th>
</tr>
</thead>
</table>
| • Renal Nurses  
• Renal Technicians | • Setting up of RRT  
• Troubleshooting issues RRT  
• Central and arterial blood sampling |

## LINES TEAM
### (at least one per unit of 30+ critical care patients)

<table>
<thead>
<tr>
<th>STAFF</th>
<th>Line insertion: any of the following:</th>
</tr>
</thead>
</table>
|       | • Surgeons  
• Interventional Radiologist  
• Interventional Cardiologist  
• Renal physician / trainees  
• Vascular access nurse* |

* Vascular access nurses can help with some of these tasks dependant on competency

<table>
<thead>
<tr>
<th>Assistant:</th>
<th></th>
</tr>
</thead>
</table>
| • Medical student  
• HCA assistance  
Respiratory and Cardiac Physiologists | |

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| Replacement of lines in critical care patients  
(peripheral, central, arterial)  
• Blood cultures  
• Setting up of equipment  
• Assistance with patient preparation | 

## CRITICAL CARE OUTREACH TEAM
### (at least one per hospital)

<table>
<thead>
<tr>
<th>STAFF</th>
<th>ROLE</th>
</tr>
</thead>
</table>
| • One senior nurse  
• One senior doctor  
• One middle grade or junior doctor | • Seeing critically ill referrals - inpatient and ED  
• Escalation of care decisions in consultation with team |
# PALLIATIVE CARE TEAM
(at least one per hospital)

| STAFF     | Team Leader:  
|           | • Palliative care doctor  
|           | Team Members:  
|           | • Palliative care nurses  
|           | • Cancer Clinical Nurse Specialist  
|           | • Chaplaincy  
| ROLE      | • Breaking bad news  
|           | • Advance Care Plan  
|           | • Management of end of life patients  
|           | • Advice or prescription of end of life medication  
|           | • Relative support  

# COMFORT/HYGIENE TEAM
(at least one per unit of 30+ critical care patients)

| STAFF     | Supervision by a critical care nurse for intubated patients  
|           | Bedside Support Worker plus two of:  
|           | • HCAs  
|           | • Medical students  
|           | • Nursing students  
|           | • Dentist / Dental nurse / Hygienists / Therapists  
| ROLE      | Supports the Bedside Support Worker with turning and washing etc.  

# PRONING TEAM
(at least one per hospital)

| STAFF     | Team Leader:  
|           | • Senior Anaesthetist  
|           | Team Members:  
|           | • 4 people who have undertaken relevant training  
|           | • Surgeons who regularly position patients  
|           | • Other members of staff with manual handling training  

| ROLE | • Ensure safety of the airway and management of infusions, lines etc.  
|      | • Co-ordination of team  
|      | • Manual handing of patient under the direction of the lead  
|      | • Sourcing of pillows, slide sheets etc. |

### RUNNERS TEAM
(at least one per unit of 30+ critical care patients)

| STAFF | • Porters  
|       | • HCAs  
|       | • Medical students  
|       | • Nursing students  
|       | • Dental nurse |

| ROLE | • Transport of bloods  
|      | • Fetching of equipment  
|      | • Other tasks as required |

### PHARMACY CARE TEAM
(at least one per unit of 30+ patients)

| STAFF | • Pharmacist  
|       | • Pharmacy technician  
|       | • Pharmacy Assistants |

| ROLE | Pharmacists  
|      | • Maintain patient safety  
|      | • Prescribing medicines |

| Pharmacy Technicians | • Assistance with drug preparation  
|                      | Double checking of drugs with other staff members |

| Pharmacy Assistants | • Monitoring, ordering and top up of stock levels  
|                     | (Staff should be assigned to role that best utilise their skills) |

|                     | • Consider the role that your pharmacy’s Central Intra-Venous Additive Service or commercial companies could play in preparing medications in advance |
## EQUIPMENT AND PREPARATION TEAM
(at least one per hospital)

| STAFF | Team Leader:  Operating Department Practitioner  
| Team Members  
| HCA’s  
| Medical Students  
| Nursing Students  
| Dental nurse  
| Clinical engineers  
| Medical physicist  
| Respiratory physiologists  
| Physiologists  
| ROLE |  
| Preparation of grab bags - non-drug items (clean roles)  
| Preparation of equipment packs (clean roles) e.g. Intubation, lines, PPE  
| Stocking up of the bed spaces (dirty role) |
4. Special Circumstances

Pregnancy

• The guideline Coronavirus (COVID-19) infection in pregnancy provides information for healthcare professionals. Pages 29-31 provides additional information for professionals looking after parturient with severe coronavirus infection.
Appendix: Self-assessment competency reporting framework example

Below is an example self-assessment that you could use to assess the competency of your staff in order to identify their suitability for redeployment.

Personal Details and Competency Information

Please spend a few minutes reviewing the list to decide which of the crucial tasks you might be able to assist with:

- You will not be left alone. There will always be someone to help you.
- For any task you COULD manage, try to assess how much supervision you would need. Could you manage to do the skill or task without supervision, or would you need someone nearby to help if you struggled?
- There may be some tasks that would be a real struggle to start with but with some supervision and support you will be able to take on. For these tasks indicate "direct" supervision here.

<table>
<thead>
<tr>
<th>YOUR DETAILS</th>
<th>Answer</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td></td>
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</tr>
<tr>
<td>Current role</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
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<tr>
<td>Registration number eg GMC or NMC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of birth</td>
<td></td>
<td></td>
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<tr>
<td>Date last worked clinically</td>
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<tr>
<td>Date of last DBS check</td>
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<tr>
<td>Postcode of home address</td>
<td>Mobile number</td>
<td>Email address</td>
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<table>
<thead>
<tr>
<th>SKILLS YOU HAVE</th>
<th>Competence in the following</th>
<th>Yes / No / with additional training</th>
<th>Supervision required: Direct (D) Indirect (I) None (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Care</td>
<td>PPE Donning &amp; doffing</td>
<td></td>
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<tr>
<td></td>
<td>PPE Assess and teach donning and doffing</td>
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<td></td>
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<tr>
<td></td>
<td>Washing &amp; personal hygiene</td>
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<tr>
<td></td>
<td>Lifting and handling patients</td>
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<tr>
<td></td>
<td>IV drug administration training</td>
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<td></td>
<td>National Early Warning Scoring</td>
<td></td>
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<tr>
<td>Resuscitation</td>
<td>Basic/ Intermediate Life Support training</td>
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<tr>
<td></td>
<td>Advanced Life Support training</td>
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<td></td>
<td>Completing respect forms/DNAR</td>
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<td></td>
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<tr>
<td>Airway Management</td>
<td>Basic mask ventilation skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced airway management skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>COVID 19 Intubation trained</td>
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<td></td>
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<tr>
<td>Respiration</td>
<td>Ventilator management</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proning trained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circulation</td>
<td>Insertion of peripheral lines</td>
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<tr>
<td></td>
<td>Insertion of central lines</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Cardiac output monitoring interpretation</td>
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<td></td>
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<tr>
<td>Arrhythmia management</td>
<td>Renal replacement therapy</td>
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<tr>
<td>Renal</td>
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<tr>
<td>Admission and Daily assessment</td>
<td>Medical patients</td>
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<td></td>
<td>ED Patients</td>
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<td></td>
<td>Critical Care Patients</td>
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<td>Technical skills</td>
<td>Ultrasound of chest</td>
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<td></td>
<td>Echo - screening (FICE)</td>
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<td></td>
<td>Echo full study</td>
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<td></td>
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<td></td>
<td>Central line insertion</td>
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<td></td>
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<td></td>
<td>Arterial line insertion</td>
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<tr>
<td>Psychological Care</td>
<td>Tracheostomy - percutaneous</td>
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<td>Support tasks</td>
<td>Tracheostomy - surgical</td>
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<td></td>
<td>Blood gas sampling</td>
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<td></td>
<td>Arterial line insertion</td>
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<td></td>
<td>Easi-IO insertion</td>
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<td></td>
<td>Debriefing/TRiM training</td>
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<tr>
<td></td>
<td>Family interaction skills - support after breaking bad news</td>
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<td></td>
<td>Prepare equipment according to instruction</td>
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<table>
<thead>
<tr>
<th>Previously worked in</th>
<th>Yes/No</th>
<th>Comments</th>
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<tbody>
<tr>
<td>ICU</td>
<td></td>
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<tr>
<td>Anaesthetics</td>
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<tr>
<td>ED</td>
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<tr>
<td>Operating Theatres</td>
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</tbody>
</table>
Appendix: Bedside support worker

Examples of potential Bedside Support Workers and basic requirements:

Basic requirements for bedside support workers are some understanding of healthcare and commitment to work in healthcare environment, compassion/kindness, personal resilience, willingness to learn. These might include but are not limited to:

- Medical students (Years 1 to 3 who wish to volunteer, final year students (5 or 6) may have accelerated entry to the provisional register. Penultimate year students (4 or 5) may be kept within their usual clinical placements.

- Dental professionals

- Nursing students

- Allied Health Professionals unlikely to have another major role during COVID19 surge e.g. podiatrists

- Healthcare support workers
Appendix: Other healthcare workers

Below is a list of other healthcare workers who can make a valuable contribution to the critical care workforce. Where required, we are seeking permissions nationally for these professional groups to work outside their normal scope of practice:

- Clinical Engineers from Medical Physics departments could help with the expansion of critical care departments into new environments.
- Clinical engineers, medical physicists could also help assist with equipment and preparation teams.
- Critical Care Scientists in cardiac theatres, whose work may be scaled down significantly, could be released for additional duties in critical care.
- Neurophysiologists could be upskilled to work in a critical care science setting. Their skills may be utilised to aid prognostication testing.
- Perfusionists with their theatre and critical care experience, could support critical care teams could assist in supporting roles.
- Respiratory physiologists, with some training, can perform arterial blood gases.
- Psychologist can contribute to sustaining the wellbeing of staff who are working as part of the critical care team.
- Cardiac, respiratory and vascular science also.