Novel coronavirus (COVID-19) standard operating procedure

Resource shortage, escalation and National Loan Programme for COVID-19 in England

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

- Describe the mechanism for hospital trusts in England to escalate capacity-limiting shortages to Regional, and National incident coordination teams during COVID-19 pandemic.

Core principles

- Trusts will surge across England at different times especially early in the pandemic
- Trusts will hit a limit of “true capacity and capability” to accept and manage COVID-19 patients depending on a number of “rate limiting factors”
- These rate limiting factors are dynamic and may be overt such as staff, hardware (ventilators, consumables, syringe drivers, NG feed pumps, filters, circuits or medications or over-arching service critical supplies (oxygen)).
- The experience of the Critical Care Network in London found benefit from:
  - Local arrangements of re-allocating staff, equipment or transfer of patients
  - Regionally coordinated flexible mutual aid arrangements within existing local/regional critical care networks

System requirements

Must be based on the latest NHS regional capacity plans and demand modelling

- Constant review of accurate real time data captured from all critical care-capable sites to give a local, regional and national overview of “true capacity” including established and surge potential and utilisation.
- Data collated in a central data integration platform rolled out to regional and national decision makers to identify and respond.
- Ventilators and NIV/CPAP machines as a top priority initially recognising dependence on other equipment. Other “rate-limiting factors” prioritised as intelligence is gathered
- Allow regional/national decision makers to allocate scarce resource optimally and dynamically with a clear audit trail and governance structure.
- Track shipment of supplies to allow re-allocation/diversion if required due to rapidly changing nature of surge
- Ensure equipment is tagged and tracked for retrieval to ensure equal provision as pandemic extends to all regions.
## National Loan Equipment allocation action steps

<table>
<thead>
<tr>
<th>Action</th>
<th>Responsible team</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Complete COVID-19 daily sit-rep of baseline established capacity to manage O, O+ and V patients</td>
<td>Hospital Trust</td>
</tr>
<tr>
<td>2. Report in COVID-19 sitrep current capacity *surge plan and **super-surge capacity for NIV/CPAP and IPPV considering:</td>
<td></td>
</tr>
<tr>
<td>- critical care occupancy</td>
<td>Hospital Trust</td>
</tr>
<tr>
<td>- O₂ flow / demand check in line with the latest advice of O₂ usage:</td>
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<tr>
<td>- Other rate limiting factors which may prevent COVID patient care provision</td>
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<tr>
<td>3. Interrogate justification for additional equipment and check alignment with regional surge plan</td>
<td>Host Region</td>
</tr>
<tr>
<td>4. If required, exploit within region mutual aid options:</td>
<td>Host Region ( + adjacent Region)</td>
</tr>
<tr>
<td>- increasing ventilator capacity at individual hospitals e.g. relocation from independent sector; transfer of patients</td>
<td></td>
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<tr>
<td>5. If insoluble or insufficient mitigation at Regional level, then escalate to National Ventilator (equipment) Loan Panel for prioritisation and potential allocation of national load stock</td>
<td>Host Region National Supply Team</td>
</tr>
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Definitions:

**Baseline ventilator capacity:**
Invasive mechanical ventilators (located in critical care units) and non-invasive ventilation (NIV) machines (located in critical care / high dependency settings or designated wards)

***Surge ventilator capacity:***
Operating theatre, anaesthetic room and recovery area ventilators (including radiology, day surgery, independent sector etc.) not required for emergency or prioritised surgery (e.g. urgent cancer or obstetric)

**Super-surge ventilator capacity:**
Additional staffed bed capacity in any location for which additional ventilators and other equipment would be required to enable operation

**Note 1** – CPAP is the primary mode of non-invasive ventilation in COVID-19, unless the patient has (prior) type 2 respiratory failure.

**Note 2** – Many critical care ventilators can also do CPAP / NIV: care required to not count these types of machines twice.
Decision sequence for bidding for allocation of ventilators or equipment

Stage 1 Actions 1 & 2:
- Baseline data collected as per current data streams (daily situation report and other data requests) which inform capacity status, bids and decision making.
- Collection 12-hourly through critical care network within all V, O+ and O beds and surge beds.
- Return data collection through regional/national data platform as available

Stage 2 Actions 3 & 4:
- Information from Stage 1 checked and in coordination with regional team utilised to determine operational matching response including:
  1. Relocating ventilators, anaesthetic, NIV machines from other hospital sites and independent sector hospitals within region.
  2. Moving patients between hospitals within region (or to adjacent region)
  3. Ambulance diverts, changing ambulance service catchment area

Stage 3: Action 4:
- Daily meeting of key decision makers informed by Stages 1 to 2 at regional level with Trust input as required. Feed into place mitigation and response plans.

Stage 4: Action 5:
- If unresolved at regional level referral to National Loan (equipment) Panel with full information and justification. Plan for further mitigation/alternative clinical approach if no national option available.

Next steps:
- Local, regional and national supply leads to adopt this method of decision making as single route of escalation.
- Leads need to be familiar with and trained on planning tools & associated data capture methods to be introduced
- Assess suitability of decision model for other equipment shortages
Ventilator/NIV/CPAP shortage escalation and loan protocol COVID-19

Data flow: simultaneously from local to regional and national dashboards

LOCAL NEED:
Trust/Hospital site identifies supply/demand (or surge) problem

Local data return (Sit-Rep):
- Data return to define issue is a pre-requisite for further progress
- Estimated required timeframe if time-critical solution required
- Local in-trust solutions must have been completed before escalation to Regional team

Regional dashboard:
- Hospital site now flagged as “requiring regional support”.
- Region investigates details of issue and justification

Regional ICC Decision Options:
1) Resolve within own region
2) Resolve with adjacent regions
Regional solutions must have been completed before escalation

Escalation to national level

Country dashboard:
- Regional and trust data
- Red flags in regions
- Regional capacity plan

Referral to National Ventilator (equipment) Loan Panel
- Clinical/Operational decision group
  Requires full information, justification and timescale
- National support delivered to regional and local need

Resource available

MOD Donnington
- Directed to allocate, log and transport tracked ventilator(s)/equipment on loan to agreed receiving sites

Resource NOT available

Region plan for further mitigation/alternative clinical approach

Data: simultaneously from local to regional and national dashboards

Decision making/actions must flow through each level in turn
Post NVAP meeting actions:

Regional Team/Trust to provide following data on agreed allocations:

- Intended location of ventilators (Trust/site)
- Driving / inhalational gas source (O2/air or just O2 – i.e. ward based)
Operating process for receiving and distributing nationally sourced equipment in England

MoD Donnington receipting process

- MoD team notified by national team of inbound orders and ETA at Donnington, and ensure booking in processes, paperwork etc. is complete and accurate
- On receipt of equipment undertake basic check that device is as-expected – no clinical commissioning or assembly is undertaken at MoD Donnington
- All machine serial numbers recorded on receipt – will issue devices with a clear label highlighting this as “NHS National Loan stock”
- Machine manufacturer and model type recorded and made available with submission to daily National Ventilator Loan Panel (NVAP) with link to training material where possible
- Dispatch packs assembled with relevant consumables based on the ‘kit list’ to the extent that supplies are available
- Nightly confirmation of stock (COB)
- 09.00 – Undertake daily inbound expectation check – what is coming in on that day
- Generates list of devices available to allocate that day and projection of future days and provide that to National Ventilator Loan Panel (NVAP) by 12.00 to: england.covid-oxygen@nhs.net

NHS Trust / Region Submission process

- Trusts need to provide to the Regional EPRR the name of their Trust, contact person at that Trust and address of Trust to which allocations, if made, should be communicated and delivered. Trusts must confirm capability and detail for receipt 24 hours a day at the Trust if required. Denial of delivery is not acceptable.
- Regional EPRR teams submit Resource Loan Request form (one form per region) and contact details and delivery address at the Trust should the request...
be accepted to NVAP for consideration by 14.00 email to: england.covid-oxygen@nhs.net, copying in England.Covid19-oxygen-ventilator-delivery@nhs.net.

Loan Stock Allocation process

- NVAP national support team list items available in stock each day and create forward view of future items to be presented from Palantir platform at 15.00hrs NVAP session:
  - NVAP decision on allocation email conveyed to Oxygen & Ventilator Programme: England.Covid19-oxygen-ventilator-delivery@nhs.net
  - Email copied to NHS Regional EPRR SPOC and Regional Director, and MoD Donnington UK.DNGLCCPlanners@kuehne-nagel.com
- MoD Donnington prepare deliveries, starter consumables (if available)
- MoD Donnington log serial number on despatch against actual destination
- MOD Donnington deliver items to delivery addresses provided. Typically the day following the NVLP meeting at which the loan request was approved.
- Notifications go out to Trusts of expected contents and arrival time-window (incl. manufacturer and model details). Ensure out-of-hours reception arrangements if required

On Trust receiving site

- Confirmation of delivery and receipt via signed ‘goods received form’ and email by Trust to MOD Donnington at UK.DNGLCCPlanners@kuehne-nagel.com and copied to Regional ICC and National SPOC
- Trust accepts responsibility to track and retain equipment within their organisation and be prepared to release loan stock for redistribution of stockpiling at later date when requested by national or regional team
- Trust pre-arranges prompt commissioning of device(s) by Medical Engineering
- Trusts record appropriately on asset registers as loan etc.

Subsequent movements

- Regional teams are responsible for understanding all movements of National Loan Stock equipment between trust sites – so that locations are known if equipment needs to be returned
- If equipment moves Regional Team must notify nhsi.covid2ventproject@nhs.net including clearly identifying which items have moved, including serial numbers
Retrieval and redistribution of loan stock

- Ensure a robust process for tagging, tracking and retrieval for redistribution and final storage of all loan equipment