

COVID-19 wave 1:

Reflections and learning from practice across a sample of UK intensive care units

A summary report for rapid dissemination of a facilitated 'Knowledge Sharing Session' (22/10/20)

In order to help identify factors which might contribute to better COVID-19 ICU outcomes, the UK's Intensive Care Society hosted a facilitated discussion between clinicians from 9 intensive care units across the UK with a range of experience of and patient outcomes from, the COVID-19 first wave.

Whilst causality was not proven, a number of factors were identified which might possibly have impacted upon patient outcomes in wave 1. Such learnings might perhaps help improve care in subsequent waves. We report those factors which were considered to be important in improving patient outcome under two headings: those that are not modifiable in the short term, and those that are.

Non-modifiable factors which might have influenced reported outcome

External factors

Advantageous timing & preparedness

- COVID-19 surge a few weeks behind others, enabling *planning and training*, and *gain from the lessons learned by others* (whether organisational or therapeutic- see below).
- Smaller slower peaks such that ICU capacity was not (or was less) overwhelmed.

Advantageous local population factors

(Younger, leaner, less deprived, less frail, fewer comorbidities) may have beneficially affected outcomes in a manner hard to adjust for statistically.

Enhanced Resources

Larger pre-COVID-19 ICU resource, through greater ratio of resource to COVID-19 burden.

Advantageous physical estate

- Co-located units (or a few in close proximity) appeared easier to manage than multiple smaller units spread across the hospital site.
- Larger existing (sometimes multi-speciality) critical care footprints could be diverted to COVID-19 care.

Increased staff resources

- Greater existing expert staff numbers/ratios, and/or greater internal availability & ability within Trusts to redeploy staff with ITU competence was considered helpful.

Organisational factors

Referral pathways

- Differing referral pathways existed between hospitals affecting comparability of case-mix: tertiary centres tended to receive patients selected for likely better outcomes (e.g. most likely to survive; most likely to benefit from ECMO; or most stable for transfer).

Existing protocols of care

- The presence of mature and embedded protocols for care was considered helpful.

Approaches to non-invasive ventilatory support (HFNO, CPAP)

- Extent of use varied between trusts, and practice changed over time. Some units only delivered NIV on ICU; some only off ICU; and some in both (with differing routes to entry- as part of a protocol of escalation, or simply in response to bed availability), which may limit comparability of reported ICU outcome data.

Modifiable factors which potentially enabled better care

Use of resources

Physical estate

- Concentrating beds in individual locations (e.g. additional beds into the available ITU space rather than moving to distant operating theatres) where possible.

Staff Resources

- Nursing strategy:
 - Utilising nurses with ICU competency & expertise
 - Keeping ICU nurse:patient ratios as low as possible
 - ‘Zoning’ of patients under the care of an individual nurse or consultant may have been beneficial.

Organisational factors

Mutual Aid

Active early engagement with other Trusts and specialist centres, facilitating

- The determination and delivery of best care (e.g. acceptance for ECMO; possible use of pulse steroids).
- Patient transfers to other Trusts.

Referral Pathways

- In-hospital referral pathways that enable joint decision-making and treatment escalation planning.

Protocols of care

- The rapid development and implementation of structured care protocols.

Clinical leadership

- Strong leadership at Trust / service level, described as an effective enabler, providing direction for clinical management. Specific features included:
 - Structures for joint decision-making about Trust-wide approaches e.g. daily consultant forums, clinical command & control structures, often with multi-specialty & /or multidisciplinary membership.
 - Processes for rapidly identifying, disseminating and acting upon emerging research data and evidence based guidelines (e.g. non-invasive ventilatory support and anticoagulation practice).
- Regular scheduled (daily) multi-disciplinary team (MDT) meetings.
- Frequent communication e.g. via WhatsApp.

Approaches to non-invasive ventilatory support (HFNO, CPAP)

- Creating a structured process for NIV/HFNO implementation, with clear processes for treatment escalation planning.
- Recording all outcome data both on and off ICU.

Treatment Factors

- Early adoption of augmented anticoagulation strategies.
- Active trial recruitment: steroids, for instance, are of proven advantage, and in some centres half of all patients would have been randomised to these.

There was no consensus as to the benefit or otherwise of other treatment practices (NIV, IMV, full vs augmented anticoagulation; use of pulse methylprednisolone in persisting late disease)

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* Our panel was from an open invitation sent to our UK ICU Leads group and through ODNs.

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