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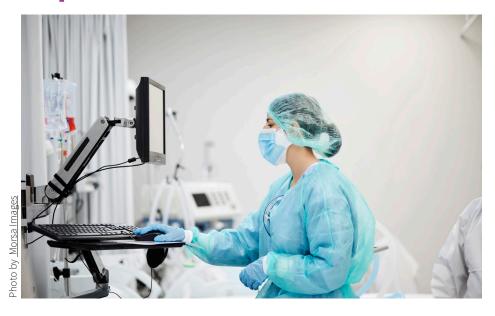
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Critical care telemedicine:
implementation considerations

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In critical care telemedicine (CCT), patients in intensive care units (ICUs) are monitored by critical care experts based at a 'hub' outside the hospital. By monitoring patients, hub staff are able to warn staff at the bedside of potential problems and offer them decision support. The use of CCT means that patients and staff in rural or small hospitals have access to critical care experts. But authorities and healthcare facilities need to consider how best to implement them.

Main results of the review

The review identified several factors that could influence the acceptance and use of telemedicine in critical care.

These included:
- the value that hospital staff and family members place on having access to critical care experts,
- staff access to sufficient training, and
- the extent to which healthcare providers at the bedside and the critical care experts supporting them from a distance acknowledge and respect each other's expertise.

Who is this summary for?

Health system, programme managers and other intensive care unit stakeholders who are planning or implementing critical care telemedicine.

About the review

A recent Cochrane Review of qualitative research explored factors that affect the acceptance and use of healthcare from a distance (telemedicine) for patients in intensive care units (Xyrichis 2021).

The review identified 13 qualitative studies. All of the studies were from USA and Canada. They explored the perceptions and experiences of clinical staff, managers and administrators, as well as patients and family members.

How up-to-date was this review?

The review authors searched for studies that had been published up to October 2019.

Questions for planners and implementers

Below is a set of questions that may be helpful to health system, programme managers and other ICU stakeholders when planning and managing the implementation of critical care telemedicine. These questions were drawn from the review findings in which we had high or moderate confidence

Patient safety, quality of care and confidentiality
- Have you considered whether it might be useful to monitor the progress and impact of CCT, for instance through both quantitative (e.g. audits) and qualitative (e.g. reflective accounts) approaches?
- Can you assure patient privacy and confidentiality in the context of CCT?
- Have you thought about how to integrate CCT tools (e.g. decision support) in ICU clinicians' daily practice?
- Can you tailor CCT to the needs of different ICUs, specifically in relation to local protocols and practices?

Training and mentoring of users
- Is there a detailed, all-steps-included, hands-on training programme on CCT use for all relevant stakeholders?
- Have you thought about how you will raise awareness and encourage uptake of training resources among staff?
- Can you include a mentoring component for junior ICU bedside staff, linking them with experienced staff in the CCT hub?
- Do the ICUs actively encourage bedside teams to seek and share feedback from and with their hub colleagues?

Raising awareness
- What strategies are in place to raise awareness among clinical staff about the strengths and challenges of using CCT, before it is implemented?
- Have you informed staff about the potential advantages of CCT, for patient safety, quality of care and
- family satisfaction?
- How are family members informed about the strengths and challenges of CCT, for example, the potential it offers for patients in rural communities to avoid transfer to regional centres?

Building teamness
- Have you considered how you can encourage teamness, trust, communication, familiarisation and collaboration between hub teams and local bedside teams?
- Have you clarified the purpose of CCT to both bedside and hub teams?
- Have you identified the distinct roles and workflows of bedside and hub teams, and have you communicated these to them?
- Have you considered how hub clinicians can participate equally and engage with their bedside colleagues during ICU ward rounds?

Camera usage etiquette
- Have you consulted with bedside and hub teams to develop an acceptable camera usage etiquette?
- Have you discussed with the bedside team the presence of the camera, and how it can be used to help them in their daily work (e.g. by being a second pair of eyes, watching restless patients)?

Sustainability and ongoing usage
- Have you ensured ongoing maintenance of the equipment?
- Can you ensure 24/7 availability of IT support to bedside and hub teams.

Resource allocation
- Have you identified optimal and safe staffing levels for the CCT hub facilities?
- Bedside nurses may feel concerned that their experienced colleagues are taken to staff the CCT hub. Have you considered what measures can be taken to ensure staffing the CCT hub does not negatively influence staffing levels at the bedside?
- Have you considered ways of minimising the potential for the additional workload on bedside teams?
- Have you considered offering ICU nurses and physicians the opportunity to work across bedside and hub teams, to strengthen knowledge-sharing and skill development?

The questions presented in this summary are from a Cochrane Review. This summary does NOT include recommendations.

The review authors have searched for, assessed and summarised relevant qualitative studies using a systematic and predefined approach.

The review authors systematically assessed the level of confidence in each review finding. They then used the review findings to develop a set of questions for

Reference

The information for this summary is taken from the following Cochrane Review:

Xyrichis A, Iliopoulou K, Mackintosh NJ, et al. Healthcare stakeholders' perceptions and experiences of factors affecting the implementation of critical care telemedicine (CCT): qualitative evidence synthesis. Cochrane Database of Systematic Reviews. 2021(2). https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012876.pub2/full

UNIVERSITY OF LEICESTER   KING'S College LONDON   EST 1892 LSBU

Cochrane Norway   NIPH Norwegian Institute of Public Health   Cochrane Effective Practice and Organisation of Care