NICE National Institute for Health and Care Excellence

Surveillance report 2016 – Acutely ill adults in hospital: recognising and responding to deterioration (2007) NICE guideline CG50

Surveillance report

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Contents

Surveillance decision

- We will not update the guideline at this time.

Reason for the decision

We found a total of 29 new studies through surveillance of this guideline: 14 in a search of systematic reviews and randomised controlled trials (between September 2010 and October 2015) and 15 identified by topic experts. This included new evidence on track and trigger systems, critical care outreach services, and care on the general ward following transfer. None of the new evidence considered in surveillance of this guideline was thought to have an effect on current recommendations.

We did not find any new evidence on physiological parameters to be used by track and trigger systems, or timing of transfer of a patient from critical care areas to general wards.

We found new evidence related to the research recommendations on automated monitoring systems and rapid response services costs. This new evidence was not considered to fully address these research recommendations or affect current recommendations. We did not find any new evidence that would affect other research recommendations.

All topic experts consulted about the surveillance review considered the guideline still relevant to clinical practice. They highlighted some implementation issues related to critical care outreach teams or rapid response teams (or response strategy) as these still do not exist in all trusts.

Topic experts also highlighted the costs associated with the introduction of new technologies in this field and their affordability by NHS trusts. Topic experts also made us aware of the introduction of the National Early Warning Score (NEWS) system into many trusts. However, they highlighted that NEWS has all the limitations of existing early warning systems and its accuracy remains to be confirmed. Topic experts also mentioned the need to place more emphasis on staff education, detection of delirium, rehabilitation after critical illness, and end of life care. However, all these areas are already covered in other NICE guidelines. Topic expert feedback also highlighted some inequalities in access to services or service provision that are not being addressed in the current guideline: this

related to a need for a similar approach for children and for a specific early warning score for use during pregnancy. However, children are out of scope of this guideline. Specific track and trigger systems for use during pregnancy will be logged for consideration during the development (or surveillance) of relevant guidelines covering this population.

Overall decision

After considering all the new evidence and views of topic experts, we decided not to update this guideline.

See how we made the decision for further information.

Commentary on selected new evidence

With advice from topic experts we selected 1 study for further commentary.

Care on the general ward following transfer

We selected the systematic review by Niven DJ et al. (2014) for a full commentary because they assessed the impact of critical care transition programmes on people discharged from an Intensive Care Unit (ICU) to general wards. This is one of the main areas of the acutely ill patient care included in NICE guideline CG50.

What the guideline recommends

CG50 recommends that people being transferred from critical care to ward should have a formal structured handover supported by a written plan. The critical care area team and the ward team should take a shared responsibility for the care of the person being transferred. The receiving ward team (with support from critical care if required) needs to ensure that they can deliver the agreed plan. NICE guideline CG50 also includes a list of items that a formal structured handover of care should include:

- a summary of critical care stay, including diagnosis and treatment
- a monitoring and investigation plan
- a plan for ongoing treatment, including drugs and therapies, nutrition plan, infection status and any agreed limitations of treatment
- physical and rehabilitation needs
- psychological and emotional needs
- specific communication or language needs.

NICE guideline CG50 also includes a research recommendation about the clinical and cost effectiveness of a transfer facilitator for people transferred from critical care to a general ward.

Methods

The systematic review by Niven DJ et al. (2014) assessed the impact of critical care transition programmes on the risk of ICU readmission or death following ICU discharge. Rapid response teams, medical emergency teams, critical care outreach teams, or ICU nurse liaison programmes were included as part of the critical care transition programmes definition.

Two authors independently selected studies for inclusion. They included controlled studies that compared critical care transition programmes to standard care in adults admitted to an ICU. Only studies that reported an ICU readmission rate (rates of readmission following ICU discharge during the hospital stay) were included.

Data extraction was carried out in duplicate, including information about general characteristics of the study (type of study, year, setting, and country), population, intervention, comparators and important outcomes of interest (hospital death and ICU readmission rates). They assessed the risk of bias of each included study using Cochrane Collaboration criteria for controlled studies.

The authors performed a meta-analysis for the risk of ICU readmission associated with a critical care transition programme and another for the risk of in-hospital mortality. They used fixed-effect and random-effects models to calculate pooled risk ratios (95% confidence intervals) and assessed the statistical heterogeneity using Cochran's Q and I^2 statistics. Potential sources of heterogeneity were explored. A risk assessment for publication bias was also carried out using a funnel plot and Begg test.

Results

Nine before-and-after studies covering 16,433 people discharged from the ICU to general wards were included in the systematic review. One of these included studies did not provide the number of people discharged from ICU to wards. The authors contacted the original investigators to request missing data but they were not able to provide them. This study was excluded from meta-analysis.

All of the included studies were assessed as being at high risk of bias due to the lack of randomisation, allocation concealment and blinding. The authors did not detect risk of publication bias.

Four studies were carried out in the UK, three in Australia, one in New Zealand and one in Canada. Six studies were conducted in medical and surgical ICU, two in surgical ICU and one in medical ICU.

All studies but one described the team composition. All the teams included ICU nurses. Apart from nurses four studies also included ICU physicians, and one study also included a respiratory therapists. People discharged from ICU were followed-up for 48 hours or until clinically stable.

Critical care transition programmes were associated with a significant reduction in the risk of ICU readmissions (relative risk [RR] 0.87, 95% confidence interval [CI] 0.76 to 0.99, 8 studies, n=16,433) but it was not associated with a reduction of the risk of in-hospital mortality compared to standard care following ICU discharge (RR 0.84, 95% CI 0.66 to 1.05, 3 studies, number of patients not reported).

Although the results were not heterogeneous, the authors performed stratified analyses to assess the impact of patient or program characteristics on the risk of ICU readmission. The characteristics explored included: transition program structure, ICU physician presence within the team, duration of follow-up, and lack of data about population age or APACHE II score within the studies. They reported that the factors explored showed similar results.

Other comparisons as per example early (less than 48 hours) compared to late readmissions (more than 48 hours), closed compared to open ICUs, or the impact of the changes in the patient's goals of care on the ICU readmission were not possible due lack or inconsistencies in reporting.

Strengths and limitations

Strengths

- The study was relevant to the scope of NICE guideline CG50 and showed that critical care transition programmes might have a role on the risk reduction of ICU readmission in high-risk populations.
- The authors did a comprehensive literature search on MEDLINE, EMBASE, CENTRAL, CINAHL, and two clinical trial registries (including unpublished studies) without language restrictions.

- Selection of studies for inclusion and data extraction were carried out in duplicate. In addition, a list of the included studies and their main characteristics was included, although characteristics of the controls were missing.
- The quality of the studies was assessed and reported but it was not clear if it was done by two reviewers.
- Appropriate methods were used to combine the results and explore sources of heterogeneity and publication bias.

Limitations

- Although the results of the study showed that people discharged from ICU may benefit from the intervention in terms of risk reduction of ICU readmission, the differences found between the groups compared were borderline. The clinical relevance of these findings needs to be established.
- The review did not include all important outcomes such as patient satisfaction.
- The authors discussed how the poor quality of the evidence found affected their conclusions. It was not clear in the paper if the studies included were controlled before-after studies. Their lack of randomization, blinding or control group makes it difficult to attribute the differences observed to the intervention assessed. These results are based on studies with high risk of bias and need be interpreted with caution.
- The main characteristics of the critical care transition programmes that could lead to an improvement of patient important outcomes after an ICU discharge remain uncertain (for example team composition, type of follow-up and frequency of follow-up).

Impact on guideline

This systematic review supports NICE guideline CG50 recommendations. Critical care transition programmes could have a role in the improvement of important outcomes of people transferred from ICU to general wards, but more research is needed in the area.

How we made the decision

We check our guidelines regularly to ensure they remain up to date. We based the decision on surveillance 8 years after the publication of acutely ill adults in hospital: recognising and responding to deterioration (2007) NICE guideline CG50.

For details of the process and update decisions that are available, see ensuring that published guidelines are current and accurate in 'Developing NICE guidelines: the manual'.

Previous surveillance update decisions for the guideline are on our website.

New evidence

We found 14 new studies in a search for systematic reviews and randomised controlled trials published between 01 September 2010 and 22 October 2015. We also considered 15 additional studies identified by members of the Guideline Committee who originally worked on this guideline. No further studies were identified during stakeholder consultation.

Evidence identified in previous surveillance 3 years after publication of the guideline was also considered. This included 44 studies identified by search.

From all sources, 73 studies were considered to be relevant to the guideline.

We also checked for relevant ongoing research, which will be evaluated again at the next surveillance review of the guideline.

See appendix A: decision matrix for summaries and references for all new evidence considered.

Views of topic experts

We considered the views of topic experts, including those who helped to develop the guideline and other correspondence we have received since the publication of the guideline.

Views of stakeholders

Stakeholders commented on the proposal not to update the guideline and place NICE guideline CG50 on the static list. See appendix B for stakeholders' comments and our responses. Two stakeholders agreed with the proposal not to update the guideline and another one disagreed expressing a need for NICE to endorse the use of NEWS. NICE guidelines make recommendations based on the best available evidence. New evidence and topic expert feedback suggested that there is some advancement in track and trigger assessment but more work needs to be done. In the current surveillance review none of the new evidence considered was thought to have an impact on the current recommendations.

One stakeholder agreed and another disagreed with the proposal to place NICE guideline CG50 on the static list. They mentioned that there is an updated version of NEWS in development. Given that there is ongoing research in this area which is due to be published in the near future we decided not to place NICE guideline CG50 on the static list.

See ensuring that published guidelines are current and accurate in 'Developing NICE guidelines: the manual' for more details on our consultation processes.

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