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Mixed methods study

After implementation of a new 'track and trigger' model, nursing staff showed improved self-assessed knowledge and confidence in detection and management of deteriorating patients

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Implications for practice and research

- Staff education appears important prior to introduction of new track and trigger (T&T) scoring and response systems.
- Staff confidence, knowledge and use of T&T and early response systems may assist early detection of patient deterioration.
- Further research on the impact of T&T models on patient outcomes is warranted.

Context

Internationally, training in and use of T&T scoring systems along with a variety of rapid response strategies and regular observation-taking are believed to be useful foundations to assist nurses' detection of deteriorating patients. In the UK, recommendations have been made for the introduction of these systems.[1] However, there are few studies that evaluate the impact of new charts and scoring systems on staff in practice.

Methods

McDonnell and colleagues undertook a before-and-after-mixed methods study to evaluate the impact of a T&T model on nursing staff self-assessed knowledge and confidence to detect and respond to patient deterioration in practice. Before and after questionnaires were completed by 213 of 322 (66%) registered nurse (RN) and unregistered nurse (UN) staff working in 12 wards across an English district hospital setting. After commencement of the new model, interviews were undertaken with 15 members of staff to gather perceptions on the impact of the new system. The intervention involved an education session, a new observation chart, T&T scoring system and altered response strategy. The questionnaire was adapted from an earlier study and piloted with 17 staff. The questionnaire was given to staff prior to the start of each training session. After 2 weeks the charts started and the trainer paid daily visits for 4 weeks, to answer queries about the charts. Questionnaires were sent to the staff 6 weeks after the introduction of the charts (with reminders 2 weeks later). Data analysis involved parametric statistical tests for the quantitative data and thematic analysis on the qualitative data.

Findings

Most baseline staff concerns focused on rapid deterioration, lack of information about the patient, being unable to get help when needed and getting a timely response from more senior staff. Confidence in communicating with medical staff was considered as very important. 'Knowing the patient' and 'observations' were aspects nurses deemed essential in early detection of deterioration. Overall staff concerns reduced after the intervention.

On a scale of 1–10, RNs and UNs reported substantial differences in self-assessed 'before' mean knowledge (8.0 vs 5.9) and confidence levels (8.2 vs 6.0), respectively. UNs indicated some lack of confidence in recording observations. Scores increased 'after' for both nursing groups (knowledge-RNs 8.5, UNs 7.1 and confidence-RNs 8.6, UNs 7.2) indicating RNs scored substantially higher at both time points. Interview data showed the groups used the information differently with RNs using scores 'to 'augment' their clinical judgement. Staff felt the new model had improved their practice.

Commentary

The mixed methods design provided rich quantitative and qualitative findings and a high response rate meeting power analysis requirements. It is encouraging that increased knowledge and confidence may lead to improved performance in early recognition and response to patient deterioration. Qualitative findings demonstrated that staff valued the training and support provided by the expert trainer. The scoring system clearly helped the staff to identify deterioration earlier and additional chart components were seen as useful, and time spent completing the scoring worthwhile. However generalisability is limited given the single site studied and the short evaluation period of up to 8 weeks postintervention. Whether changes can be sustained or improved is unknown.

Qualitative findings provided insights into experienced RN's use of multiple information sources to make judgements. Knowledge, experience, confidence, exposure to clinical specialties, knowing the patient, intuition, medical history, observations and interpretation of scores in relation to additional information were reported. These findings resonated with past studies of nurse expertise, intuition and clinical judgement.

Challenges arose from the findings with the continued involvement of UNs in monitoring of observations considered so critical to early detection of deterioration. UNs may lack knowledge, confidence and skills to identify early signs of deterioration in patients. Use of a two-tier chart system could mean accurate observations leading to a move to the track and trigger chart may not occur. UN staff members' observation skills require on-going development if they are practiced infrequently. Needs assessment for ongoing education could be investigated through 3-month and 6-month evaluations. Finally, the importance of communication with medical staff about patients at risk appears paramount and further research is needed to establish barriers and strategies for best practice.

Competing interests None.

Reference

1. **National Institute for Health and Clinical Excellence.** Acutely ill patients in hospital. NICE Guideline 50, NICE, London. 2007. http://www.nice.org.uk/CG050