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Evidence Brief

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What do we know about the Safer Nursing Care Tool?

Many studies of registered nurse staffing in hospitals have shown an association between higher levels and better patient outcomes and care quality. Systems for determining the number of nursing staff needed on wards exist in abundance. However, research evidence is lacking on how well these tools work: how often do they get nurse staffing levels 'right', shift by shift?

In 2014, the National Institute for Health and Care Excellence (NICE) endorsed using the Safer Nursing Care Tool (SNCT) to help plan nurse staffing levels on adult wards in acute hospitals. The SNCT estimates the nurse staffing needed based on patients' acuity and their dependence on nursing care. This Evidence Brief describes the results of research that addressed key knowledge gaps about the SNCT.

Why was a study about the SNCT needed?

Despite the importance of having enough nurses working on hospital wards, both for patient safety and quality of care, an agreed method for determining how many nurses and assistants are needed on each ward remains elusive. [1-3]

The Safer Nursing Care Tool (SNCT) is a patient classification method, which has been endorsed by NICE and is used in many hospitals in England. [4, 5]

Recognising that patients require differing amounts of nursing care, tools such as the SNCT categorise patients according to their nursing care needs. This is done over a baseline assessment period, which in the case of the SNCT is 20 days twice yearly. Each category is associated with a workload 'multiplier', to calculate how many nursing staff to employ. The multipliers used in the SNCT are based on large volumes of data from quality-assured wards.

Like most staffing tools, the SNCT estimates the permanent staffing needed to meet the *average* demand. The tool assumes that staffing shortfalls (when demand is above average or there are staff absences) will be covered by supplementary staff, from other wards or bank/agency. But is this the most effective or cost-effective approach to staffing? It is unclear whether using these approaches to determine the number of staff to employ (the 'establishment' or 'baseline' staffing) leads to having enough staff on the day. [6, 7].

There are also concerns that important elements of nursing work are not considered in patient classification based staffing tools such as the SNCT.

As for other tools, the effectiveness and efficiency of staffing levels generated by the SNCT are unknown.

Our recent study set out to answer several questions about how well the SNCT works when setting staffing levels in general medical and surgical hospital wards. [8-10]

The study aims and methods

This was an observational study in four NHS hospital Trusts, covering 81 general medical and surgical wards, collecting data for 1 year. The research team linked administrative data (on volumes of patient admissions, transfers and discharges), roster data (on shift-level staffing), the patients per acuity/dependency category, and professional assessments of staffing adequacy. These data were used to investigate:

- The precision of the SNCT's predictions for staffing establishments.
- The relationship between the tool's predictions for daily staffing requirements and nurses' judgements of whether there were enough staff.
- Costs and consequences of different approaches to setting establishments using the SNCT.

How precise are the SNCT's predictions for staffing establishments?

According to the SNCT measure, the required staffing a level required varied considerably between wards, and between days on the same ward.

When using the SNCT to determine the number of staff to employ on a ward, the guidelines recommend recording the number of patients per acuity/dependency category for a minimum of 20 days.[4] However, our study found that this leads to very imprecise estimates on almost all wards. The precision of the estimated staffing requirement improved considerably with 30 days of observations, but even with 60 days of observations, the average 95% confidence interval was 2 whole time equivalents wide. This is because staffing requirements varied considerably from day to day.

In general, the time of day when the numbers of patients per acuity/dependency category were counted made very little difference to the calculated establishment. But for some wards, the volume and patterns of patient admissions and discharges meant that there were large differences depending on the time of day when the scoring was done.

How do the SNCT predictions of staffing needs compare to professional judgement?

The SNCT estimates of what staffing was needed correlated with the levels based on professional judgement. For example, when the registered nurse staffing level was one hour less per patient day than the SNCT estimate, the nurse-in-charge was less likely to say that there were enough staff on duty for quality care (the 'odds' reduced by 11%). Correspondingly, when staffing was one hour per patient day below the SNCT estimate, the odds of reporting nursing care left undone were increased by 14%, and the odds of reporting staff missing breaks were increased by 12%. There were similar patterns for nursing assistant staffing levels.

However, some factors not considered directly in the Safer Nursing Care Tool also related to professional judgements about the adequacy of staffing – based on their assessment of whether care had been left undone, staff had missed breaks or there were enough staff for quality. For example:

- Nurses were more likely to report care left undone on wards with a higher proportion of single rooms.
- On surgical wards, nurses were more likely to report nursing care left undone and missed breaks, and less likely to report enough staff for quality compared to medical/mixed wards.

Costs and consequences of different approaches to setting staffing levels

A computer-based simulation model was used to estimate the costs and consequences of different approaches to setting the establishment using the SNCT, while using redeployment between wards and temporary staff (flexible staffing) to make up any shortfalls wherever possible. When baseline staffing was set to meet the average demand (which is the approach taken by most tools including the SNCT), overall 32% of patient shifts were understaffed by more than 15% even after redeployment and hiring from a limited pool of temporary staff.

In contrast, staffing with 'high' baseline establishments, (set to meet need 90% of the time), resulted in fewer understaffed patient shifts - 21%. Using lower establishments greatly increased the risk of critical understaffing unless the availability of temporary staff (such as agency) was unlimited, in which case costs were high.

Using published data on the association between low staffing and outcomes, the study assessed the relative cost-effectiveness of different approaches. Setting the establishment to meet demand most of the time (the high baseline model) would have led to substantial decreases in bed use (1.2%) and mortality risk (4.5%) with a net cost of £9,506 per life saved (accounting for staff costs and days saved) when compared to establishments set to meet average demand.

Conclusions

The SNCT helps hospitals predict staffing requirements but nonetheless has limitations, and cannot replace professional judgements. Factors other than patients' acuity and dependency are also important for determining staffing levels. The SNCT seems to work better in some wards and hospital types than in others.

The SNCT can be used to guide flexible staffing but only in conjunction with sufficient baseline establishments. Routinely scheduling higher numbers of staff than currently recommended could be cost-effective. In contrast, scheduling a lower number of nurses and using flexible staff to make up shortfalls means that under-staffed shifts are more common, leaving patients at higher risk of adverse outcomes.

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