

In this article...

- Factors influencing nurses' timing of vital-signs observations at night
- Interviews with nurses on how they decide whether to carry out night-time checks
- Suggested improvements to management of vital-signs observations at night

Why are vital-signs observations missed at night?

Key points

Checking patients' vital signs is crucial in preventing avoidable deaths in hospitals

In hospitals, vital-signs observations are often missed or delayed at night

Staff's use of clinical judgement is only one factor in decisions on whether to carry out vital-signs checks at night

At night there is a clash between ensuring patients get enough sleep and vital-signs observations

Certain patient groups – such as those with dementia or long-term conditions – may receive fewer vital-signs checks at night

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Abstract Observations of the vital signs of hospitalised patients are missed at night and it is not clear why this happens. Even when the frequency of observations increases in line with the severity of a patient's condition – based on early warning scores – observations are still missed. This article describes findings from interviews with nursing staff about why they take or miss scheduled vital-signs observations at night.

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Checking patients' vital signs is crucial to prevent avoidable deaths in hospital (Smith, 2010) and a fundamental part of nurses' work (Kitson et al, 2010). However, patients are less often monitored at night, even when observation frequency increases in line with illness severity based on early warning scores (EWSs) (Hands et al, 2013; National Patient Safety Agency, 2007).

Research shows that nurses use EWSs to support their clinical intuition, and use the recognition of deterioration patterns and family concerns to guide the timing of vital-signs checks (Odell, 2015). Relationships with other professionals, equipment problems and the clinical environment affect when observations are done, but we do not fully understand why scheduled observations are less likely to be made at night (Buist and Stevens, 2013). Research shows cardiac-arrest calls peak at 6am, after the night shift (Nolan et al, 2014) and survival after cardiac arrest in hospital is worse when the arrest occurs at night (Robinson et al, 2016); this could be related to reduced observations.

This article is a summary of recent qualitative research that used interviews with nursing staff in a general acute hospital to

find out why vital-signs observations were missed or delayed at night (Hope et al, 2017).

What did we do?

Nursing staff were recruited through a survey undertaken as part of a larger mixed-methods project (the Night Surveillance Study: Bit.ly/UoSNightSurveillance).

Seventeen members of staff from a single general acute hospital completed semi-structured interviews over the telephone or face to face. We recruited a maximum variation sample of 13 registered nurses, two student nurses and two support workers from wards with low ($n = 3$), medium ($n = 8$) and high ($n = 6$) levels of adherence to the hospital's early warning protocol at night. Staff came from medical, emergency, surgical, trauma, rehabilitation, oncology and gynaecology wards, and their experience on hospital wards ranged from <1 year to >30 years.

Findings

We analysed the interviews using a thematic approach. Three key findings emerged:

- The difficulties of balancing sleep with taking vital signs at night;
- The importance of clinical judgements and ward expectations;

Box 1. Improving the management of night-time observations

- Discuss with the ward team, and document decisions to miss or delay night-time observations
- Discuss conflicting expectations about when observations should be taken and agree on clear guidance
- Hospital audit teams could explore how nursing teams could record reasons for missed or delayed observations
- Hospitals should collect data on the prevalence of missed or delayed night-time observations of people with dementia and long-term conditions
- Adapt early warning protocols for use with people who have long-term conditions and those people who are on a long palliative care pathway

- Potential under- and over-monitoring of specific patient groups.

Balancing sleep and night-time checks

Supporting sleep was seen as central to night-time care. Some interviewees argued that sleep was integral to recovery:

“Most healing takes place when you’re in a deep sleep and if you’re breaking that, all the good work ... has been broken.” (Registered nurse 8, medium-adherence ward)

However, taking vital signs was also seen as a key part of nursing work:

“That’s our baseline, how to treat you or assess how stable you are.” (Registered nurse 1, high-adherence ward)

Night time was when these two tasks clashed. Interviewees told us about their struggles to provide a “solid block of undisturbed sleep”. Some used strategies to maximise the period of undisturbed sleep by, for example, taking vital signs just before “settling down” patients for sleep.

Interviewees also considered whether taking observations for one patient might awaken others, which could happen when patients shared a room. They said that, during the day, they would carry out scheduled observations even if they judged them to be “unnecessary”, because this did not affect sleep. However, this changed at night. Interviewees talked about deciding when they felt it was “necessary” to carry out vital-signs observations at night, versus when they felt these could be delayed or even missed to protect sleep.

Clinical judgements and ward expectations

Both nurses and healthcare assistants told us they used their “clinical judgement” to decide whether it was worth waking a patient to take their vital signs when scheduled. This could be based on clinical

judgements and expertise about their patient group, or on “gut feeling”.

However, it became clear that other factors were influencing when vital signs were taken at night. On some wards, post-operative protocols requiring observations to be taken at certain intervals overrode the early warning protocol. Some interviewees told us doctors expected observations at the end of the night shift, which could be in addition to those scheduled in the early warning protocol; this could lead to night-time observations being skipped to protect sleep.

“So if you do them again at 4 o’clock, there are chances that I have to do it again at seven, because the consultant wants a fresh set of obs.” (Registered nurse 13, medium-adherence ward)

When the hospital used adherence to scheduled vital-signs observations as a measure of ward performance, interviewees said this made them more likely to take observations when scheduled. However, it also made nurses feel their professional autonomy was being threatened:

“There is no clinical judgement on our part ... You’ve got a black mark against your name.” (Registered nurse 8, medium-adherence ward).

Under- and over-monitoring

Interviewees told us that people with chronic obstructive pulmonary disease always gained high EWSs (and hence frequent scheduled night-time observations) because certain vital signs like oxygen saturation were always high. For some interviewees, this meant skipping vital-signs observations at night – with or without written advice from a doctor – or taking fewer vital signs instead of the full set required by the protocol.

Patients with dementia could become agitated when woken up, which could mean other patients would also wake. Attitudes to managing this varied: some teams modified

how they took observations – such as taking oxygen saturation readings on patients’ toes instead of their fingers; some deliberately avoided observations in those with dementia to avoid disturbing other patients.

“When a demented patient... – so noisy – refused to have the blood pressure checked, and then eventually went to sleep ... If I check it she’ll wake up, and then the rest of the patients will be annoyed too ... during the time it wasn’t compulsory ... I leave it as it is.” (Registered nurse 13, medium-adherence ward)

Although patients on a formal end-of-life care pathway could have their night-time observations overridden, nurses identified a group of patients judged to be nearing that stage in whom observations were expected as usual under the protocol; the nurses did not undertake observations for these patients.

“We just refuse to do it.” (Registered nurse 13, medium-adherence ward)

Conclusions

The evidence from the study led us to suggest several improvements to how night-time observations are managed (Box 1). **NT**

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References

- Buist M, Stevens S (2013) Patient bedside observations: what could be simpler? *BMJ Quality and Safety*; 22: 9, 699-701.
- Hands C et al (2013) Patterns in the recording of vital signs and early warning scores: compliance with a clinical escalation protocol. *BMJ Quality and Safety*; 22: 9, 719-726.
- Hope J et al (2017) A fundamental conflict of care: nurses’ accounts of balancing patients’ sleep with taking vital sign observations at night. *Journal of Clinical Nursing*; 00:12
- Kitson A et al (2010) Defining the fundamentals of care. *International Journal of Nursing Practice*; 16: 4, 423-434.
- National Patient Safety Agency (2007) *Recognising and Responding Appropriately to Early Signs of Deterioration in Hospitalised Patients*. London: NPSA.
- Nolan JP et al (2014) Incidence and outcome of in-hospital cardiac arrest in the United Kingdom National Cardiac Arrest Audit. *Resuscitation*; 85: 8, 987-992.
- Odell M (2015) Detection and management of the deteriorating ward patient: an evaluation of nursing practice. *Journal of Clinical Nursing*; 24: 1-2, 173-182.
- Robinson EJ et al (2016) Risk-adjusted survival for adults following in-hospital cardiac arrest by day of week and time of day: observational cohort study. *BMJ Quality and Safety*; 25: 11, 832-841.
- Smith GB (2010) In-hospital cardiac arrest: Is it time for an in-hospital “chain of prevention”? *Resuscitation*; 81: 9, 1209-1211.