

Why are vital sign observations missed at night?

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 is based on the severity of a patient’s condition - using ‘early warning scores’ - observations still get missed. In this Evidence Brief we describe findings from interviews with nursing staff about why they take or miss scheduled vital sign observations at night.

Missing vital signs at night: what is at stake?

Checking patients’ vital signs is a vital step in preventing avoidable deaths in hospitals [1] and a fundamental part of nurses’ care work.[2] Yet patients are monitored less frequently at night - even when the frequency of taking vital signs increases in line with the severity of the patient’s illness with protocols based on ‘early warning scores’.[3,4]

Existing research shows nurses use early warning scores to support their clinical intuition, using recognition of patterns of deterioration and family concerns to guide the timing of vital sign checks.[5] Relationships with other health professionals, equipment problems and the clinical environment also affect when observations are done.[6] However we do not fully understand why scheduled vital signs observations are less likely to be taken at night than during the day and this topic has not been much researched.[6] Previous research shows cardiac arrest calls peak at 6am, following the night shift [7] and survival after cardiac arrests in hospital is worse when they occur at night [8], which could relate to lowered observations.

This evidence brief is a summary of our 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. [9]

What did we do?

Nursing staff were recruited through a survey that was undertaken as part of a larger mixed methods project (the Night Surveillance Study). Seventeen members of staff from a single general acute hospital completed semi-structured interviews over the telephone or face-to-face. Interviews explored patient mix, care, ward specialty, role responsibilities, views of why the ward performance data showed high, low or medium adherence to the expected frequency of observations at night, and how staff decided whether to take scheduled observations.

Who did we speak to?

We recruited a ‘maximum variation sample’ which included staff with varying experience, from different ward specialties and with varying levels of adherence to the hospital’s early warning protocol. This included 13 registered nurses, two student nurses and two support workers from wards with low (n=3), moderate (n=8) and high (n=6) levels of adherence to the protocol at night. Amount of experience of working on hospital wards ranged from under a year to over 30 years. Staff came from medical, emergency, surgical, trauma, rehabilitation,

oncology, and gynaecology wards. We analysed the interviews using a thematic analysis approach.

Findings

Three key findings emerged. These were the difficulties of balancing sleep with taking vital signs at night; the importance of clinical judgements and ward expectations; and potential under- and over-monitoring of specific patient groups.

Balancing sleep with taking vital signs at night

Supporting sleep was seen as central to night time care. Some interviewees argued it was integral to the process of 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 a key part of nursing work too:

“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 caring tasks clashed. Interviewees told us about their struggles to provide a ‘solid block of undisturbed sleep’.

Some interviewees used strategies to maximise this period of undisturbed sleep. For instance, they took vital signs just before ‘settling down’ patients to sleep (where this was possible – some wards were noisy throughout the night). This meant patients could sleep for the full interval between expected vital signs set by the early warning protocol.

Nursing staff also weighed up whether taking observations of one patient might wake others. This could happen when patients shared a room with others.

During the day staff said they would take observations that were scheduled by the protocol but which they judged to be ‘unnecessary’, because it did not affect sleep. However, this changed at night. Staff talked about deciding when they felt it was ‘necessary’ to carry out vital sign observations at night, versus when they felt they could be delayed or even missed in order to protect sleep.

The following two themes explore how nurses judged whether it was ‘necessary’ to interrupt sleep to take observations.

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Clinical judgements and ward and hospital expectations

Both nurses and healthcare assistants told us they used their “clinical judgement” to decide if it was worth waking a patient to take their vital signs when scheduled. This could be based on formal judgements and clinical expertise about their patient group, or on ‘gut feeling’. However, it became clear there were other influences on when vital signs were taken at night. On some wards, post-operative protocols overrode observations scheduled using the early warning protocol. This required observations to be taken at pre-specified intervals after an operation. Some interviewees told us that doctors would expect observations at the end of the night shift. These could be in addition to those scheduled by the early warning score based protocol, which 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)

Where the hospital used adherence to vital sign observations scheduled by the early warning protocol as a ward performance measure, interviewees said this made them more likely to take observations when scheduled. But 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).

Patient groups and monitoring at night

Staff told us that people with Chronic Obstructive Pulmonary Disease always gained high early warning scores (and hence scheduled night-time observations) because certain vital signs like oxygen saturation were always high. For some interviewees this meant skipping the vital signs at night, with or without written advice from a doctor, or taking other vital signs instead of the full set expected on the protocol.

Patients with dementia could become agitated when woken, which could mean other patients woke up. Attitudes to managing this were varied: some teams modified the way they took observations, such as taking oxygen saturation readings on people’s toes rather than their fingers. However others deliberately avoided observations of people 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 the formal end of life pathway could have their night time observations overridden nurses identified a group of patients judged to be nearing this stage where observations were expected as usual under the protocol.

Conclusions

The evidence from this study led us to suggest a few improvements to how night time observations are managed:

- Decisions to miss or delay night time observations should be discussed with the ward team and documented
- Hospital audit teams could explore how nursing teams could record reasons for missed or delayed observations
- Conflicting expectations about when observations should be taken should be discussed and clear guidance agreed
- Hospitals should collect data on the prevalence of missed or delayed night time observations of people with dementia and chronic conditions
- Early warning scores and protocols need to be adapted to consider their use with people with chronic conditions and people on a long palliative pathway

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