Patient Safety Tip of the Week

May 9, 2017

Missed Nursing Care and Mortality Risk

Many studies have demonstrated a relationship between nursing staffing levels and patient mortality and complications. High levels of nursing staffing are associated with lower mortality and lower levels are associated with higher mortality. In our November 26, 2013 Patient Safety Tip of the Week "Missed Care: New Opportunities?" we also noted that adverse patient outcomes may be related to missed nursing care (also known as "care left undone"). Now a new study appears to connect the dots and demonstrate that much of the excess mortality related to poor nursing staffing is due to missed nursing care. Jane Ball, in a thesis using data from the RN4Cast study, found that **a 10% increase in the amount of care left undone by nurses was associated with a 16% increase in the likelihood of a patient dying within 30 days** of admission following common surgical procedures (Ball 2017).

Lack of time is the major reason that care gets left undone. This, in turn, may be due to nursing staffing shortages or to disparities between nursing staffing levels and complexity of care required or overall task load.

In several of our columns we've discussed findings that have come out of the RN4Cast study. That is a collaborative study of nurse staffing at hospitals in fifteen European countries, though the data in the Ball study came from a subset of hospitals in England, Sweden, and nine countries.

In the Ball study missed care (aka care left undone) was measured using the "Basel Extent of Rationing of Nursing Care (BERNCA)"instrument (Schubert 2009). Nurses were asked 'On your most recent shift, which of the following activities were necessary but left undone because you lacked the time to complete them?' Respondents were presented with a list of 13 nursing care activities and asked to tick all that applied. The list included activities such as timely medication administration, skin care, oral care, comforting patients, care documentation, pain management, changing a patient's position, care planning, discharge preparation, patient surveillance, and patient/family education.

It was not uncommon for necessary nursing care to be left undone by RNs on a shift due to lack of time. Ball found that 86% of RNs surveyed in England and 74% in Sweden reported that they left some care undone on their last shift.

Interestingly, higher support worker staffing levels (eg. nursing aides) were not associated with better outcomes. But see our comments below about the potential relationship with non-nursing staffing.

Nurse-rated quality of care and patient safety environment scores were also significantly related to differences in care left undone. But the striking finding was that a 10% increase in the amount of care left undone by nurses was associated with a 16% increase in the 30 day mortality rate.

In our November 26, 2013 Patient Safety Tip of the Week "Missed Care: New Opportunities?" we noted that the concept of missed care as a potential contributor to adverse patient events can largely be attributed to Beatrice Kalisch, RN, PhD. In 2006 (Kalisch 2006) she first brought examples of commonly missed nursing care that have been associated with adverse patient outcomes. (Make no mistake: the root causes of missed nursing care extend well beyond nursing and those factors put nurses in the position of having to prioritize care, leaving some care undone or delayed). Prior to 2006 there was virtually nothing in the literature about missed nursing care and its occurrence was described as "undiscussable" (Kalisch 2009a). Kalisch did qualitative studies of hospital nursing staff using focus group interviews and developed a tool, the MISSCARE survey, to measure missed nursing care (Kalisch 2006, Kalisch 2009a). We are not talking here about occasionally missed or delayed nursing care but rather regularly missed nursing care. We refer you back to our November 26, 2013 Patient Safety Tip of the Week "Missed Care: New Opportunities?" for a discussion of the individual elements of missed care and the themes as to the reasons for missed care.

While understaffing is an obvious root cause for missed care or care left undone, don't just look at nurse:patient staffing ratios. Even when nurse:patient ratios are "acceptable" there may be additional factors that prevent nurses from carrying out all regular aspects of nursing care. In our numerous columns on "the weekend effect" we've noted the many additional activities nurses get stuck doing on weekends because of inadequate non-nursing staffing. Sometimes the nurses end up doing tasks such as transporting patients or even mopping floors. There is also less dietary and nutrition support, pharmacy and imaging services, physical therapy, patient teaching, and social services. They may spend more time on the phone trying to track down doctors on weekends. So nurses end up doing many more tasks that they do not normally perform during regular "day" hours and they do not have as much time to do patient care and bedside nursing.

It's interesting that the Ball study did not find use of higher support worker staffing levels to be of any mortality benefit. We have often recommended having **dedicated "teams"** of appropriately trained individuals for regular turning of patients at risk for decubiti, or for ambulating patients, or for feeding patients. These could perhaps free up nurses to perform some of the other activities that require more professional backgrounds. Such may be more practical at larger hospitals and may not be feasible at small hospitals.

But the Ball study did not find evidence that the availability of nursing support staff increased the ability of RNs to complete their work. They also note some prior studies

have shown that higher support staff levels in certain contexts may even be associated with increased mortality rates. So the jury is still out on what, if any, specific activities currently done by nurses might be done by support personnel to free nurses up for those activities more closely tied to outcomes.

Kalisch has also pointed out that experience levels of staff may vary from shift to shift and that issues with orientation and handoffs may also be contributing factors. In a subsequent concept paper (Kalisch 2009b) Kalisch and colleagues developed a Missed Nursing Care Model which highlights teamwork and communication issues as one of three major antecedents to missed care.

Missed nursing care has also recently been implicated in some disparities of care in the US (Brooks-Carthon 2016). Looking at older patients admitted with acute myocardial infarction, the researchers found that unmet nursing care was associated with a higher risk of 30-day readmission for older black patients but not older white patients. Older black patients were 18% more likely to experience a readmission after adjusting for patient and hospital characteristics and more likely to be in hospitals where nursing care was often left undone. Factors identified as contributing to this phenomenon were when nurses were unable to talk/comfort patients, complete documentation, or administer medications in a timely manner.

Missed nursing care or care left undone is still a relatively new concept in the patient safety world. The striking finding by Ball that a 10% increase in the amount of care left undone by nurses was associated with a 16% increase in mortality is a wakeup call that tells us we must begin to address the issue. Using tools like the BERNCA instrument or the MISSCARE survey to identify what aspects of care are not being completed, trending them over time and, most importantly, identifying and ameliorating the root causes could result in significant improvement in patient outcomes.

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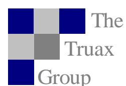

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