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Too few fully trained nurses on hospital wards linked to daily 3% rise in patient death risk

No let-up in risk when headcount boosted with unregistered nursing assistants

Admission to a hospital ward with below average numbers of fully trained (registered) nurses to care for patients is linked to a 3 per cent rise in the risk of death for each day the shortfall persists, suggests UK research published online in the journal **BMJ Quality & Safety**.

But plugging the gap with unregistered nursing assistants isn't associated with any diminution in patient harm, suggesting that while these healthcare workers have a key role in maintaining ward safety, "they cannot act as substitutes for [registered nurses]," say the researchers.

The proportion of fully trained registered nurses on hospital wards in the UK is among the lowest in Europe. And many hospitals now rely on unregistered nursing assistants to provide a substantial amount of hands-on care, say the researchers.

To find out what impact this skill mix might be having on patient safety in hospital wards, the researchers drew on routinely collected data for staffing levels for all adults admitted to 32 wards in one large acute care hospital trust in the South of England between April 2012 and March 2015.

During this period, 138,133 adults spent at least one day on general medical and surgical wards, and most (79%) were admitted as emergencies. Their average age was 67; 14 per cent were aged 85 and older.

Staffing levels were measured as hours per patient per day. But across all the wards, staffing levels for registered nurses averaged 4.75 hours, while those for nursing assistants averaged 2.99.

Over the first five days of their stay, patients experienced, on average, nearly 2 days of low (below average) registered nurse and nursing assistant staffing levels, adding up to a cumulative shortfall of 23 and 15 minutes, respectively, each.

During the study period, the overall death rate was just over 4 per cent (5662 deaths). Analysis of the data showed that the odds of dying rose by 3 per cent for each day that a patient spent with registered nurse staffing levels below the average for that ward.

Although low nursing assistant staffing levels were also associated with a heightened risk of death (4%), so too were above average staffing levels.

Days where the number of admissions for each registered nurse was substantially higher than usual—more than 25 per cent above average—were associated with a 5 per cent heightened risk of death.

Each additional hour of care provided by a registered nurse was associated with a 3 per cent reduction in the chances of dying, the analysis showed. But no such impact was observed for additional hours of care provided by nursing assistants.

Based on their data, the researchers suggest that providing one additional hour of registered nurse care would be the equivalent of one extra nurse on each shift for a 24-bed ward.

This is an observational study, and as such, can't establish cause, emphasise the researchers. But the findings are broadly in line with those of other previously published studies, they say.

And although the study involved only one hospital site, so may not be typical, the researchers point out that this avoids the observed associations being influenced by the 'hospital effect,' whereby hospitals with more resources employ more nurses.

"The findings of this paper suggest potential benefits from increasing the availability of [registered nurses] on acute hospital wards," write the researchers.

"However, in England, RN shortages look set to continue in the short term...[These] are unlikely to be remedied by increasing the numbers of lesser trained nursing staff in the workforce," they add.