

Is there a case for the UK nursing workforce to include grades of qualified nurse other than the registered nurse?

Debate continues about the hierarchy of skilled roles comprising the nursing workforce: should there be grades of qualified nurses other than registered nurses; should all registered nurses be prepared to degree level; and to what extent should the nursing workforce comprise staff not qualified as nurses? Such questions raise critical issues on how different configurations of staff impact on patient care outcomes and whether judgements can be made about their cost effectiveness. Against a background of challenging economic circumstances, this Policy Plus considers the implications for UK nursing of systematically reviewed international evidence on one of these questions; namely the impacts of including a second level qualified nurse in the skill mix of the nursing workforce.

Skill mix: recent developments and research challenges

Second level entry to nursing (enrolled nurses [ENs]) ended in the UK when nurse education moved into higher education. In many settings, the enrolled nurse had been the main provider of direct patient care; subsequently, this role was fulfilled by diploma educated registered nurses supported by nursing aides (now healthcare assistants)⁽¹⁾. Recent developments suggest that new direct care-giving roles may be emerging; Agenda for Change creates a hierarchy of nursing workforce posts below the Band 5 registered nurse; these include Band 2 and 3 healthcare assistants and a direct care-giving role is being fulfilled by the new Band 4 assistant practitioner, sometimes called an associate nurse.

Skill mix research presents challenges of definition, method (e.g. disentangling separate effects of staffing levels and skill mix) and data quality^(2,3,4) and limitations posed in having to use grade mix as a proxy for skill mix⁽⁵⁾. Most studies are North American, focus on acute care settings or nursing homes, use routinely collected staff and patient outcome data; and include second level entry nurses (known as licensed practical or vocational nurses). Studies differ in the extent to which registered nurses (RNs), second level nurses (LPNs) and nursing assistants (NAs) feature separately or jointly in analyses.

How do different nursing workforce configurations impact on patient care?

Needleman et al investigated associations between staffing levels and mix, and adverse outcomes (including failure to rescue, shock or cardiac arrest, rates of UTI) in medical and surgical wards in 799 US hospitals in 11 states⁽⁶⁾. Higher proportions and, to a lesser extent, higher levels of RNs were consistently associated with lower rates of adverse outcomes. No associations were found between lower rates of adverse outcomes and higher levels of LPN or NA staffing or a higher proportion of NAs in the mix.

Person et al investigated the association between nurse staffing and 30 day mortality for Medicare patients with acute myocardial infarction in a study involving 6668 US hospitals and just under 119000 patients⁽⁷⁾. Nurse staffing variables comprised: ratio of RNs to inpatient days; ratio of LPNs to inpatient days; and the ratio of RNs to LPNs. After adjusting for a range of patient, treatment and hospital variables, findings showed that patients treated in hospitals with higher RN staffing were less likely to die in hospital whereas those in hospitals with higher LPN staffing were more likely to die in hospital. Another US study, using data from 12,000 nursing homes, showed that the higher the proportion of LPNs, the higher the incidence of pressure ulcers⁽⁸⁾.

An observational study of nurse-patient interaction on 15 acute medical or surgical wards at seven English hospitals indicated that the higher the grade of nurse providing care, the better its quality but that variation in quality of care between different staff grades was reduced when higher grade staff worked in combination with lower grade staff⁽²⁾.

What is the cost effectiveness of different workforce configurations?

Assessing cost effectiveness of different skill combinations is complex; some US work has made a start by modelling costs of different staff combinations against costs of treating adverse outcomes.

Hendrix and Foreman⁽⁸⁾ modelled optimal staffing levels for long-term US nursing home care. Investing in less qualified LPNs was associated with more pressure ulcers and the apparent wage bill savings were more than offset by treatment costs. Investing in RNs and NAs made better business sense by reducing the incidence of ulcers and thus the costs of their treatment.

In another US study, data were used to investigate the business case for 3 options for qualified nursing hours⁽⁹⁾:

1. Increase proportion of RN hours but not the total number of nursing hours;
2. Increase total number of hours of RNs and LPNs without changing the proportion;
3. Increase proportion of RN hours and the total number of nursing hours of both groups.

National estimates of staff costs and associated reductions in length of stay, levels of avoided deaths and adverse outcomes were constructed for each option. Options 1 and 3 resulted in higher levels of avoided deaths than Option 2 and much higher levels of avoided adverse outcomes. Options 2 and 3 had higher levels of hospital days avoided. When costs of treating adverse outcomes and avoided hospital days were set against the wages bill, only Option 1 led to a net decrease in hospital costs. There was thus a business case for increasing richness of skill mix but not total nursing hours.

Conclusions and implications

Evidence on relationships between skill mix, patient outcomes and costs is limited and most research is from the US. More work is required to confirm whether assumptions and relationships in existing studies hold for other settings, health economies and nurse education systems.

- there is no simple relationship between either numbers or skill mix of nursing staff and either outcomes and cost
- where studies have explored the impact of second level nurses, similar to the old 'EN' qualification, the evidence is not supportive of the role
- better clinical and cost outcomes are achieved by a qualified nursing workforce comprised primarily of RNs
- there is little evidence to suggest a benefit from replacing unlicensed NAs with LPNs
- the implications of this for formal training and accreditation of practitioners at Band 4 is unclear but well-defined role boundaries and RN leadership are likely to be essential for success

The reinvention of a second level nurse, akin to that of the Enrolled Nurse, does not offer a simple solution to current workforce challenges.

Key issues for policy

- Much more work is needed to determine optimal nurse staffing skill mixes and how requirements may vary across clinical specialties and settings.
- The limited evidence available does not support the UK introducing a nurse in a direct care-giving role below that of the Band 5 registered nurse.
- The success of initiatives to formalise the training of Band 4 assistant practitioners is likely to depend on clear role boundaries and strong leadership.
- The cost effectiveness of skill mix decisions depend on long term as well as short term economic considerations.

References and information

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