

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. The shapes are primarily triangles and polygons, creating a dynamic, layered effect. The overall composition is clean and modern, with the text centered in a white space.

Nurse Staffing Levels Act: Evidence provided to Health and Social Care Committee

Professor Dame Anne Marie Rafferty

Professor Davina Allen

Nursing Staffing and Patient Outcomes

What do we know?

Registered nurses and patient outcomes

- ▶ Substantial evidence relates lower nurse staffing levels to adverse patient outcomes in acute care

The risk of adverse patient outcomes, including death, is lower in hospitals that provide more registered nurses to care for patients on inpatient wards. The association has been demonstrated in a body of evidence comprising several hundred studies, involving hundreds of hospitals and millions of patients from around the world. The association has been shown at hospital level in large cross-sectional studies and in a growing number of longitudinal studies examining the effect of variation in staffing experienced by individuals.

(Griffiths & Dall'Ora, 2022)

Team composition and skill mix matters

Nurses Save Lives:

- One additional nurse during a 12-hour shift decreases the individual odds of patient death by 9.6%
- Senior nurses are especially valuable (Bands 7 or 8 have 2.2x the effect of Band 5 nurses)
- Adding healthcare support workers or agency nurses has no statistically significant effect

Zaranko, B., Sanford, N. J., Kelly, E., Rafferty, A. M., Bird, J., Mercuri, L., ... & Propper, C. (2022). Nurse staffing and inpatient mortality in the English National Health Service: a retrospective longitudinal study. *BMJ quality & safety*.

The image shows a screenshot of a research article from the BMJ. The title is "Nurse staffing and inpatient mortality in the English National Health Service: a retrospective longitudinal study". The authors listed are Ren Zaranko, Natalie Jean Sanford, Elaine Kelly, Anne Marie Rafferty, James Bird, Luca Mercuri, Janice Sigsworth, Mary Wells, and Carol Propper. The article is marked as "ORIGINAL RESEARCH" and "OPEN ACCESS". The abstract states: "Objective To examine the impact of nursing team size and composition on inpatient hospital mortality. Design A retrospective longitudinal study using linked nursing staff to being and patient data. Methods Conditional logistic regression models with adjustment for patient characteristics, day and time variation and differences examined the association between registered mortality and staffing at the ward-day level. Two staffing measures were constructed: the fraction of target hours worked (0-1) and the absolute difference from target hours. Setting Three hospitals within a single National Health Service trust in England. Participants 19 267 ward-day observations with information on 2028 nurses and 65553 hospital admissions in 66 treatment beds open to adult inpatient patients for calendar year 2017. Main outcome measure In-hospital deaths. Results A statistically significant association between the HR rate for registered nurse (RN) and inpatient mortality (OR 0.906, 95% CI 0.872 to 0.940, p<0.001) was found only for RN hospital employees. There was no association for healthcare support workers (HCWs) or agency nurses. An average extra 12-hour shift by an RN was associated with a reduction in the odds of patient death of 9.6% (OR 0.904, 95% CI 0.870 to 0.939, p<0.001). An additional nurse (RN or HCW) per ward 7 am to 10 pm had a 2.2 times the impact of an additional band 5 RN (OR 2.216 for band 7 and 8, 95% CI 0.955 to 5.991, p=0.037; band 5, OR 2.203, 95% CI 0.871 to 5.617, p=0.085). Conclusions RN staffing and mortality levels were associated with inpatient mortality. Benefit of association for HCWs and agency nurse indicates they are not effective substitutes for RNs who register work on the ward. greater education levels and higher nurse-to-patient ratios are associated with better patient outcomes, increased staff well-being, decreased healthcare spending and improved workforce retention. Patient outcomes that have been examined include mortality, 30-day readmission rates and nurse-driven outcomes like pressure ulcers, falls and medication errors. While there is consensus that improving nurse staffing improves patient outcomes, the role of the nursing team and the impact of its size and composition on outcomes remains relatively unexplored. Human capital theory suggests that team composition, in addition to size, matters. Becker's distinction between general and firm-specific human capital. The former is derived from higher skills or qualifications. The latter is built up from the workers' familiarity with their physical environment and coworkers. Teams are composed of individuals with different levels of general and firm-specific human capital and these factors, in addition to team size, will influence outcomes. Exploration of the role of different types of human capital has been undertaken in various settings outside healthcare. Related research has examined differences, an element of human capital, in the nursing context. This has typically been done by distinguishing between two groups: registered nurses (RNs) and healthcare support workers (HCWs). RNs are fully qualified nurses on the Nursing and Midwifery Council register, who have completed formal training and typically hold a university diploma or degree-level qualification.

Team composition and skill mix matters

Support staff are important members of the team, but they are not effective substitutes for registered nurses when it comes to maintaining patient safety. Without sufficient registered nurses to supervise support staff, benefits are not realised and harm can occur. Similarly, agency staff are not effective substitutes, with other studies indicating possible harms arising from heavy reliance on temporary staff.

(Griffiths & Dall'Ora, 2022)

Costs and cost-effectiveness of improved nurse staffing levels and skill mix

Costs and cost-effectiveness of improved nurse staffing levels and skill mix in acute hospitals:
A systematic review (Griffiths et al, 2023).

“Whilst there may be residual uncertainty around the cost- effectiveness of registered nurse staffing increases, the evidence of this review lends no support to policies that maintain or increase the size of the nursing workforce through skill mix dilution. In absolute terms the evidence is limited but the conclusions are clear. Increasing the proportion of registered nurses is associated with improved outcomes and, potentially, reduced net cost. Conversely reducing skill mix could increase costs and make outcomes worse [...].

In an era of registered nurse scarcity, our results strongly favour investment in registered nurse supply as opposed to using lesser qualified staff as substitutes. Our analysis gives support for increases in nurse skill mix and shows that policies that lead to a reduction in the proportion of registered nurses in nursing teams could give worse outcomes at increased costs. Although more evidence on cost-effectiveness is still needed, increases in absolute numbers of registered nurses in general medical and surgical wards have the potential to be highly cost effective, especially where baseline staffing is low. “

Nurse Staffing Systems

What do we know?

Staffing Methodologies

A diversity of formal nurse staffing methodologies has emerged in response to global concerns with nurse staffing levels:

- Volume-based systems (nurse-to-patient ratios)
- Patient classification (Welsh Levels of Care; SNCT)
- Benchmarking
- Time-task approaches (e.g. GRASP)
- Professional Judgement (e.g. Telford; US Veterans Administration)
- Multi-factorial indicator approaches (e.g. RAFAELA system)

NB: Approaches can overlap

Nurse staffing Methodologies

England & Wales National Policies

- ▶ Wales: nurse staffing responsibilities in adult medical and surgical wards and children's wards specified in the Nursing Staffing Levels (Wales) Act 2016
- ▶ England: nurse staffing informed by policy guidance and regulated by the Care Quality Commission

England & Wales Methodologies

- ▶ England and Wales employ a triangulated approach:
 - Quantitative data derived from patient acuity patient classification workload measurement tools (Welsh Levels of Care Tool and Safer Nursing Care Tool)
 - Quality indicators (pressure ulcers, falls, medication errors, patient complaints)
 - 'Professional judgement'

Key findings from a scoping review of methodologies (Griffiths, et al 2020)

- ▶ There is no strong evidence on which to recommend any specific methodology.
- ▶ Non-patient contact time, care planning, documentation, care coordination, admissions and discharge planning are not systematically measured.
- ▶ Methods that take in more factors tend to arrive at higher workloads.
- ▶ All systems use average time allocations, indicating an assumption that individual variation can be accommodated.
- ▶ Few formal methods for assessing and quantifying variability.
- ▶ We still do not know what optimum nurse staffing levels should be (i.e.. the level at which adverse outcomes are minimized or there are diminishing returns from further increase).
- ▶ Operational research suggests rosters based on an average staffing requirement may not be the optimal solution to meet varying patient need.
- ▶ Skill mix is rarely addressed in this literature.
- ▶ Acceptable standards of care quality are not specified
- ▶ Nurse staffing systems are resource intensive to implement, with risks of cynicism if staff invest effort in a new system but see no tangible outcome.

Professional judgement in nurse staffing systems

- ▶ Whether implicit or explicit, professional judgement is a component of many nurse staffing systems
 - “There is a limit to what can be achieved through measurement, both because of the fallible nature of the measures, but also because of the complex judgements that are required” (Griffiths et al, 2020).
- ▶ Previous research has focused on the technical and organisational aspects
- ▶ We know little about the role of professional judgement in staffing methodologies or its contribution to decision-making

The Pro-Judge Study

Inside the Black Box of Nurses' Professional Judgement in Nurse Staffing Systems in England and Wales

Aims

- How do clinical leaders and nurse managers deploy professional judgement in assessing need, planning staffing levels, deploying nurses, and organising nursing work in response to changing demand patterns?
- What are the skills and knowledge that underpin nurses' professional judgments on staffing decisions?
- How do nurses articulate professional judgement in nurse staffing decisions?
- What weight is given to professional judgement in the triangulated approach to staffing decisions?
- What is the relationship between professional judgement, planning tools, and nurse sensitive patient outcomes data?
- Are there elements of nurses' professional judgement that could be supported by new measurement or decision tools?
- What are the implications of the research for nurse education, professional development, and leadership?
- What are the implications of the research for nurse staffing systems and future policy and practice?

Study Design

- ▶ Cross-case comparative research design
- ▶ Adult in-patient services in 3 University Health Boards (Wales) & 3 NHS Trusts (England)
- ▶ Digital stakeholder interviews
- ▶ Observations (staffing meetings; clinical areas)
- ▶ Analysis of documents and artefacts
- ▶ Practice approach focused on how professional judgement operated within the wider staffing systems.

DATA SOURCES	Wales Case Study 1	Wales Case Study 2	Wales Case Study 3	England Case Study 1	England Case Study 2	England Case Study 3
Observations (clinical)	7 hours	0	14 hours	0	14 hours	0
Observations (meetings)	4	1	4	3	3	13
Interviews: operational nursing staff (e.g. ward managers, senior/lead nurses, matrons)	3	1	8	4	8	4
Interviews: senior nursing staff (e.g. directors of nursing, workforce leads, chief nurses)	5	8	7	6	2	4
Interviews: non-nursing senior and managerial staff (e.g. finance managers, HR managers, chief operating officers, medical directors)	1	3	0	1	1	9

Summary of case study data

SUMMARY FINDINGS



1. Despite national policy differences in England and Wales, the role of professional judgement in nurse staffing systems followed a common pattern.



2 Two kinds of professional judgement were deployed in the nurse staffing systems: the judgement of clinical nurses and the judgement of senior nurse managers.



3. Nurses' professional judgement was central to the generation of data, its interpretation and contextualisation.



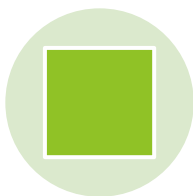
4. Healthcare organisations relied on the professional judgements of clinical nurses and senior nurse managers in making operational decisions to mitigate risk, where real-world understanding of the status of the organisation was privileged over formal data.



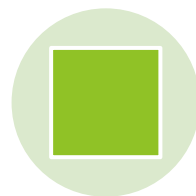
5. Professional judgement had attenuated authority for the purposes of workforce planning, where data was a master actor and strategic decision-making prioritised safety and efficiency rather than quality.



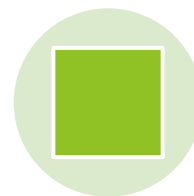
6. Nurses expressed concerns that formal measurement systems did not capture important aspects of care quality or staff wellbeing, which made it difficult to articulate their professional judgement for the purposes of workforce planning.



7. There were no obvious differences in the policy impacts between England and Wales.



8. The operation of staffing systems in England and Wales were impacted by the workforce and recruitment challenges.



The operation of staffing systems in England and Wales were impacted by financial constraints.

Conclusions

- ▶ The implementation of staffing systems is resource intensive.
- ▶ Given limited evidence on which to recommend any specific methodology, the priority for future research is to optimise existing systems.
- ▶ If nurses are to deploy their professional judgement to proactively influence the conditions for care, as well as responding to the challenges of risk mitigation, there is a need for:
 - robust systems of measurement which capture all aspects of nursing work
 - quality indicators aligned with agreed standards of care, that do not increase burdens on nursing
 - strengthened nursing leadership and socio-technical understanding of staffing systems
 - a vocabulary through which nurses' professional judgements can be articulated
 - more inclusive discursive context for strategic decision making which gives voice to clinical concerns



- ▶ Link to full paper

<https://www.sciencedirect.com/science/article/pii/S0020748923001517>