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Planning nurse staffing: are we willing and able?

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Abstract

Academic research and public enquiries demonstrate the link between adequate staffing levels and patients' experiences and outcomes. Health care providers have a legal duty to ensure (and demonstrate to care regulators) that staffing levels are safe. Yet evidence of effective workforce planning, locally or nationally, is scarce. A plethora of tools exist to help employers to determine nurse staffing required. Although not perfect, the technical resource is none the less available to support planning, but are we willing to use it? In England the different systems have not been reviewed or tested and there is no consensus about the best approach to use. This paper asserts that decisions about current and future configurations of the nursing workforce are currently taken in a data vacuum. Fundamental aspects of nurse deployment – the proportion of registered nurses, the ratio of patients to nurse – are not systematically captured or recorded, either nationally or locally. We argue that a first step in planning is to establish this baseline. We need data on nursing inputs to relate to the growing body of data on patient outcomes, to enable managers and policy makers to understand the efficacy of current workforce configurations and inform future plans.

Keywords

nurse staffing, nurse workforce planning, patient safety, skill mix, staffing levels

Background

Time and again inadequate staffing has been identified by coroners' reports and inquiries as a key factor in the high-profile cases of care failure in England. In 2009 the Health Select Committee report on patient safety commented:

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...inadequate staffing levels have been major factors in undermining patient safety in a number of notorious cases. It is clearly unacceptable for care to be compromised in this way. NHS organisations must ensure services have sufficient staff with the right clinical and other skills. (paragraph 153)

In one year the National Patient Safety Agency (NPSA) recorded more than 30,000 patient safety incidents related to staffing problems (NPSA, 2009). In addition, 1 in 10 inpatients in National Health Service (NHS) hospitals in England reported that there were never or rarely enough nurses available (Care Quality Commission (CQC), 2010b).

The literature reveals a large number of research studies that have explored the association between nurse staffing (specifically registered nurse (RN) staffing) and patient outcomes, particularly in the acute hospital setting. In 2005 Lankshear and colleagues (Lankshear et al., 2005) published a systematic review of international research since 1990 that looked at relationships between nurse staffing and patient outcomes. Across the 22 studies covered they report that the findings strongly suggest a higher nurse staffing and richer skill mix are associated with better patient outcomes, although they note that the effect size could not be reliably estimated.

Research in the UK reported a 26% higher mortality for patients in hospitals that had the highest patient:nurse ratios – that is, poorer nurse staffing levels (Rafferty et al., 2007). Nurses in these hospitals also showed higher burnout rates and were approximately twice as likely to be dissatisfied in their job. They were also more likely to report low/deteriorating quality of care on their ward/in their hospital.

A systematic review published in 2007 provides a good overview of the research on the links between RN staffing and patient outcomes (Kane et al., 2007). Overall, 28 of the studies examined in the meta-analysis reported differences in patient outcome in relation to level of RNs (relative to patient numbers) and met the reviewers' inclusion criteria. The review concluded that the studies show an association between increased RN staffing and a lower rate of hospital-related mortality and adverse patient events.

More recently, research on the effect of mandated minimum staffing levels in California reports that the lower patient per nurse ratios that it produced are associated with significantly lower mortality rates (Aiken et al., 2010).

The research in this field has continued to develop. Researchers have refined their investigations by exploring associations at a more detailed level of analysis (contrasting units rather than hospitals), controlling for a wider range of factors (including medical and other organisational features) and examining a wider range of nurse-sensitive outcome measures. Increasingly, research has been conducted outside of the USA. For example, a EU funded three-year research study known as 'RN4Cast' is currently underway, exploring the association between nurse staffing and patient outcomes in 15 countries, in order to inform approaches to nurse workforce planning (Sermeus et al., 2011).

In summarising the research evidence on nurse staffing and patient outcomes, the National Nursing Research Unit (2009) concludes by noting that '...there is clear evidence of an association between low RN staffing and some adverse outcomes'. However, they go on to caution that: '...whilst low RN staffing levels should be considered a risk factor for poor quality care, increasing nurse staffing may not be sufficient solution'. Achieving good-quality, safe care also depends upon staff in post being suitably deployed and well managed, with systems in place to ensure the quality of care being delivered and to monitor patients' responses to care.

Requirements to ensure safe nurse staffing levels

Aside from the moral imperative to deliver care safely, providers of health care face numerous legal and regulatory pressures to ensure that nurse staffing levels are adequate. In England, a patient's right to be cared for by appropriately qualified and experienced staff is enshrined within the NHS Constitution, which stipulates that patients

... have the right to be treated with a professional standard of care, by appropriately qualified and experienced staff, in a properly approved or registered organisation that meets levels of safety and quality. (Department of Health, 2009: 6)

The Health Act 1999 makes explicit that executive boards themselves must be accountable for the quality of care delivered. Demonstrating sufficient staffing is one of the six essential standards that all health care providers (both within and outside of the NHS) must meet, to comply with CQC regulation and become licensed to deliver care. Item 22 (CQC, 2010a) stipulates that in order to safeguard the health, safety and welfare of service users, care providers

must take appropriate steps to ensure that, at all times, there are sufficient numbers of suitably qualified, skilled, and experienced persons employed for the purposes of carrying on the regulated activity.

Care providers regulated by the CQC are expected to be able to demonstrate that they have carried out a needs analysis and risk assessment as the basis for deciding sufficient staffing levels, and to demonstrate that they have the appropriate systems in place to enable effective maintenance of staffing levels. However, it is noteworthy that CQC compliance guidance, although identifying staffing as key, offers little detail on how providers should ensure that it is adequate, or on how the regulator will judge whether or not it is adequate. The guidance makes it clear that the responsibility to determine what is 'sufficient' staffing rests with providers of care and is not empirically measured by regulators.

Nurses throughout the UK are also individually accountable for ensuring a safe practice environment, as set out in the code by the Nursing and Midwifery Council (NMC, 2008).

Financial pressures: Staffing, a cost or a resource?

In outlining the challenges faced by the economic downturn in 2009, the NHS Confederation England warned that measures taken in the past – across-the-board budget cuts, training cuts and allowing waiting lists to grow – are not viable options and could be counterproductive. At the end of 2010, the NHS Chief Executive David Nicholson wrote to chief executives about the challenges ahead and exhorted them to 'actively assess the quality impact of planned changes to workforce or services, and assuring ourselves that changes are being managed appropriately'.

The current economic climate intensifies what is a constant pressure on employers – to determine the optimum level and mix of staffing required, to deliver care cost effectively and efficiently, without wasting resources but also without compromising the quality of care provided. However, there is a risk that with such intense pressure to reduce costs, staffing decisions are being made without a sound rational basis, and without assessing the risk to patient care.

Mechanisms for planning nurse staffing

Tools to plan nurse staffing are not a new phenomenon; many have existed in the same or similar guises for decades. For example, the system endorsed by the Association of UK University Hospitals (AUKUH, 2009) has been modified by Energising for Excellence and the NHS Institute for Innovation and Improvement to form the Safer Nursing Care Tool, but stems from the Criteria for Care/Monitor systems, which date back to late 1980s (Ball and Oreschnick, 1986). There has been and continues to be a wide range of different options in approach/tool.

The Standing Nursing & Midwifery Advisory Committee position paper (2002) on key issues for nursing skill mix and workforce planning noted the ‘bewildering choice’ of methods/approaches and commented that this whole area needed refinement.

At the same time, a report in Scotland also identified the need for better integration of workforce development systems in NHS Scotland (Audit Scotland, 2002). Little was known about how NHS provider organisations plan staffing, and it was reported that there was

...significant variation in the availability of information at trust and ward level, limiting the ability of Trusts and ward managers to establish whether their use of nursing staff is cost effective. (Audit Scotland, 2002)

To rectify this, the Nursing and Midwifery Workload and Workforce Planning group was established to develop a ‘whole systems’ approach to workforce planning, developing and jointly agreeing tools for different settings that could be rolled out nationally. Use of the tools and workforce planning has been supported by a ‘learning toolkit’ (NHS Education for Scotland, 2008) aimed at senior charge nurses and other clinical leaders/managers at local level.

Yet no such nationally agreed framework exists in England, and employers are left to decide on which approach choice to use, or whether to use a planning tool at all, to determine the nurse staffing required. Celia Davies’ observation of more than 15 years ago still holds true:

The argument that all techniques had weaknesses and that it was impossible to recommend one was somewhat weakened by the fact that the health Department in Wales and Scotland had found it possible to be rather more prescriptive. (Davies, 1995: 72)

Choosing an approach: The issues

Hurst’s report of 2002 (and an updated summary published in 2010) is the last review of the nurse workforce planning systems in operation in England to have been undertaken. He identifies five key demand-side workforce planning methods:

- professional judgement (Telford) approach;
- nurses per occupied bed (NPOB);
- acuity–quality;
- timed-task/activity approaches;
- regression-based systems.

Each specific approach has a different set of strengths and weaknesses (Ball and Barker, 2010; Hurst, 2010). Because none is perfect, a triangulation approach is recommended so that estimates of the required staffing are made using several different methods.

Aside from the particular traits of each method, there are a number of more general challenges to choosing an approach to estimating the nursing input required. A limitation that applies to every method is that the quality and accuracy of the results will depend on the quality of data fed into the system. For example, the meaningfulness of a benchmark depends on how closely matched the comparator group is in terms of the nature of services provided, dependency mix, setting, etc. Good-quality data on attributes of the nursing workforce and how nurses are deployed is therefore crucial to successful planning and implementation.

Many of the tools available started life as in-house remedies to staffing problems (for example, eCAT, the Brighton Method, GOSHman PANDA) and have since become commercially available. The associated costs of some may be prohibiting wider take up.

There has been little systematic and independent evaluation of planning tools. Much of what is available is written by the tool developers, sponsors or commercial owners, all of whom have vested interests. Do the different systems produce similar results to one another? Are they equally effective at planning staffing? For commercial tools, do they offer good value for money or are freely available systems just as effective? Employers have very little to draw upon to determine which is the most appropriate and reliable tool to use. The lack of national recommendation or national scrutiny means that each provider needs to engage in their own investigations to determine which approach or combination of approaches to use.

Given the importance and cost associated with nurse staffing, the lack of independent evaluation and evidence-based guidance is a concern. Should these systems be subjected to the same level of scrutiny and review that is applied to specific interventions by the National Institute for Health and Clinical Excellence (NICE)? In England the government is proposing that local NHS providers will have even greater responsibilities for determining staffing requirements in the future. Unlike Scotland, this expectation is to be met without access to nationally developed and agreed workload and workforce planning tools.

Effective staff planning: Why are we not learning the lessons?

Enquiry findings (such as The Mid Staffordshire NHS Foundation Trust Inquiry, 2010), the House of Commons Health Committee report on patient safety (2009) and coroners' reports on patient safety and unnecessary mortalities all suggest that there has repeatedly been an underlying failure to recognise the ramifications of inadequate nurse staffing. However, is this part of a more general trend? How does the nurse staffing of the poorest performing organisations (as rated by the regulator) compare with the 'best'? How do nurse:patient ratios and skill mix in different Trusts or care homes compare? The simple answer is that this learning cannot be gained, as the data is not there.

There is a paucity of data both locally and nationally, which has impinged upon our ability to plan the workforce effectively or gauge the impact of policy and practice changes. The Audit Commission (2010) studied the number of nurses employed relative to the number of hospital beds in 56 NHS Trusts and reported considerable variation. However, these data are based on a subset of Trusts rather than nationwide, and are not linked to data on quality or other performance indicators. We can therefore learn little about the relative cost effectiveness of the different configurations. Despite the advent of the electronic staff record in England: '...there is little sign of improvement in the availability of necessary data on the nursing workforce. Instead, there are signs of continuing paucity of data' (Buchan and Seccombe, 2010).

Table 1. Royal College of Nursing (RCN) proposed staffing metrics

Actual nursing staff in post as a proportion of total establishment	To identify current staffing relative to the planned number of nurses required – per ward/unit/catchment area.
Proportion of registered nurses (RNs) as percentage of total nursing staff	The benchmark average on general hospital wards is 65% RNs.
Nursing staffing relative to population served	<ul style="list-style-type: none"> ● In hospitals this is nurses per occupied bed (NPOB) or per bed. ● In community this is nurse per head of population (and may include measure of socio-economic need of population).
Nurse staffing relative to patients	<ul style="list-style-type: none"> ● Ratio of the patients per RN (on a day or night shift) provides indicator of <i>actual</i> staffing levels on hospital wards. ● Nursing hours per patient day (provides global measure). ● In the community this is typically captured through caseloads
Staff turnover	For example using data on annual joiners and leavers to provide a stability index (defined as the percentage of staff in the organisation for at least a year). Length of service can be used as a proxy.
Sickness absence	Sickness absence rate is calculated by dividing the sum total sickness absence days by the sum total days available per month for each member of staff.

Source: RCN, 2010

Health system regulators, such as the CQC, in England do not currently include a set of staffing metrics for assessing compliance with their safe staffing standard. Yet these are exactly the sorts of measures that are used in reviewing the adequacy of staffing and skill mix of a failing trust. For instance, when reviewing staffing at Maidstone and Tunbridge Wells in 2007, the Healthcare Commission reported on the number of wards with less than 65% RNs. Similarly, Professor Sir George Alberti's report (Alberti, 2009) drew attention to the skill mix at Mid Staffordshire, referring to a 42-bed medical ward with a skill mix of 50% RNs, and only four trained staff per shift (i.e. a ratio of at least 10 patients per RN).

The Royal College of Nursing (RCN) has put forward a set of staffing metrics that they argue should be routinely monitored by providers, commissioners and regulators of care to inform workforce configuration and review (RCN, 2010; see Table 1).

Such data is currently not sought – let alone reported – until *after* a health care crisis has arisen. If boards were routinely monitoring their staffing according to these simple staffing metrics, and looking at this data alongside their measures of patient outcomes and care quality, maybe such crises would be avoided.

Conclusion

Lack of basic nursing workforce information held in a consistent format is hampering our ability to determine whether current nurse staffing levels are adequate to provide care safely,

and plan staffing in the future. There is increasingly a focus in the UK on capturing and recording the 'effects' of care in terms of patient outcomes and experience. However, to understand the effectiveness of different models of care delivery, we need to have a clear understanding of the inputs, as well as the outcomes, of health care.

Key points

- There is an association between nurse staffing and patient outcomes in hospitals, evidenced both from the growing body of research, and from the reports of the causes of high-profile care crises, where inadequate nurse staffing has been identified.
- Many different tools exist (and have done for several decades) to help health service providers determine the number and mix of nursing skills required to deliver care.
- The tools have not been independently reviewed to test their efficacy or consistency of results. In England, there is no central guidance on which methods to use to reliably and cost-effectively determine nurse staffing.
- Measures of patient outcomes and nursing sensitive indicators are developing, but there continues to be a dearth of nursing workforce data at all levels.
- Regulators are unable to assess the adequacy of nurse staffing levels, as consistent and standardised data describing staffing levels in relation to patient numbers are not available.
- The collection and review of basic staffing metrics, in tandem with measures of quality and patient outcome, is an essential first step in assessing current staffing and reviewing its adequacy.

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Conflict of interest statement

None declared.

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