IMPLEMENTATION, IMPACT AND COSTS OF POLICIES FOR SAFE STAFFING IN ACUTE NHS TRUSTS

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University of Southampton

Jane Ball, Hannah Barker, Peter Griffiths, Jeremy Jones, Jane Lawless

Bangor University

Christopher Burton, Rob Couch, Jo Rycroft-Malone

UNIVERSITY OF Southampton

PRIFYSGOL BANGOR UNIVERSITY

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Advisory group members

Professor Sue Latter (Co-Chair)	University of Southampton
Professor Jackie Bridges (Co-Chair)	University of Southampton
Paul Stonebrook	Department of Health and Social Care
Ann Casey	NHS Improvement/NHS England
Dr Philippa Ryan-Withero*	Department of Health, Ireland
Professor Gillian Leng	National Institute for Health Care Excellence
Mary Lewis	Health Education England
Claire Helm	Royal College of Nursing, then NHS Providers
Lara Carmona	Royal College of Nursing
Francesca Lambert (PPI)	Southampton
Ruth Lutz Tracy (PPI)	West Sussex
Ann-Marie Riley	Nottingham University Hospitals NHS Trust
Paula Shobbrook	The Royal Bournemouth & Christchurch Hospitals NHS Trust
Maggie Davies	Western Sussex Hospitals NHS Foundation Trust
Professor Jim Buchan	Queen Margaret University College
Professor Davina Allen	Cardiff University
Professor Graham Cookson	University of Surrey
Dr Pauline Milne*	Health Education England/NHS Improvement

* Organisational affiliation at time of joining advisory group
PPI – Patient/Staff & Public Involvement representative

Executive Summary

The aim of this research has been to describe the implementation of safe staffing policies in NHS general acute Trusts in England looking at costs and consequences, and examining the factors that have influenced implementation. A mix of qualitative and quantitative methods were used (national survey, analysis of national data, four case studies, realist evaluation) to examine the impact of policies nationally, and explore commonality and variation in local responses to safe staffing policies.

Background

The Francis Inquiries in 2010 and 2013 highlighted the importance of nurse staffing as a factor affecting patient safety and prompted the development of policy and guidance aimed at ensuring 'safe staffing' in NHS Trusts.

The association between nurse staffing and the quality, safety and outcomes of care is evidenced through research that spans decades. However prior to the Francis Inquiry, there was little formal guidance on nurse staffing on NHS general acute wards in England. How decisions should be taken, what systems should be used to plan staffing, what levels needed to be achieved to minimise risk, how adequacy of staffing should be assessed, how changes to staffing should be reviewed and risks determined – were all matters for Trusts to determine locally.

This study: aims, objectives and methods

The aim of this study has been to examine how safe staffing policies have been implemented by Trusts and explore the impact of these policies. The central question the study sought to address was: *"What difference have safe staffing policies introduced after Francis made to the achievement of safe staffing in the NHS?"* Four research objectives were identified to help answer this question. We set out to:

1. Describe how safe staffing policies had been implemented by Trusts and how that varied.
2. Assess the associated costs of policy implementation at Trust level.
3. Describe the effects and outcomes of safe staffing policy implementation.
4. Describe processes of policy implementation paying attention to contextual factors.

The methods used to undertake the study comprised four main elements:

- Policy mapping: a review of policies and the health service context in which they have been developed and implemented.
- National survey: A national survey (using online, postal, and telephone) of all Directors of Nursing in general acute NHS Trusts was undertaken in March–April 2017 to discover what changes had been made to nurse staffing decision making processes, and gauge their views. 91 of the 148 (61%) contacted responded.
- National data: Analysis of existing national datasets to explore changes in staffing over time within acute trusts and to identify shifts between acute trusts and other sectors. This included review of NHS safety thermometer data and the NHS staff survey.
- Case studies: an in-depth qualitative study of implementation using a realist evaluation approach, combined with a description of policy implementation and assessment of costs, in four acute NHS trusts. The realist approach was used to identify underlying mechanisms that could explain how different outcomes of policy implementation may have come about, depending on the context.

Francis Inquiry and subsequent policy development

The Francis Inquiries drew attention to the vulnerability of nurse staffing decisions to internal and external pressures; patient safety risks associated with low RN staffing levels had not been considered in the decision to reduce the number of nursing posts at Mid-Staffordshire Trust.

The government and the Department of Health responded to the Francis Inquiry with policies to ensure that patients, and their safety, were put 'first and foremost' in the NHS. Policies and guidance related to nurse staffing following Francis were developed including NQB expectations of Trusts in 2013 and NICE guidelines for safe staffing on general acute adult wards in 2014. NICE guidance included a recommendation that 'red flags' should be used to monitor instances where nurse staffing levels were insufficient to meet patients' needs, and that a level of 8 patients per RN (a level associated with increased risk of harm in the literature) should trigger a review of staffing.

Our study suggests that the Francis Inquiry and subsequent policy have been instrumental in reinforcing the link between nursing staffing and patient safety, a principle that the term 'safe staffing', now used universally within the NHS, embodies. Members of the public involved in the study assumed that hospital services will be adequately staffed to an agreed standard: "*80 percent of patients come in assuming their care is safe*".

As the NHS context has changed, safe staffing policy has continued to evolve with new directives released each year since. Since 2015, safe staffing guidance has been led by NHS Improvement and includes a focus on adopting sustainable and affordable approaches to safe staffing. In 2016 the Carter Review outlined strategies to tackle variation in efficiency and workforce productivity, and introduced measurement and benchmarking of Care Hours per Patient Day. Another efficiency measure which influences response to staffing shortfalls was the introduction of the 'agency cap'.

Despite the urgency and commitment that characterised policy responses to the Francis Inquiry, five years on policies for safe staffing in the NHS have become more muted.

Changes in nursing workforce: nationally and locally

The whole time equivalent number of nursing staff employed in the NHS acute sector has increased since 2013, by 10% for registered nurses and 30% for HCAs/support staff. The disproportionate increase in support staff numbers has resulted in a slight lowering of skill mix; Registered Nurses (RNs) account for 66% of nursing staff in 2017 compared with 69% in in 2013. The increase in nurse numbers seen since 2013 followed a period of zero growth in the workforce from 2009. Whilst there have been staff increases it is not clear whether this is over and above the historical trend which had paused in the post 2008 austerity period.

Looking further back at growth since 2001, increases in the nursing workforce have been at a slower pace than the medical workforce, with the exception of primary care. The post-Francis growth in the nursing workforce has not been uniformly distributed across all areas of work; 'adult, elderly and general nursing' have shown consistent growth whilst other

fields such as community services, learning disability and maternity, have experienced reductions. The post-Francis increase seen in the acute sector has not been reflected elsewhere, in sectors that have not had the same level of policy attention

Estimating changes in registered nurse staffing levels, as opposed to looking simply at full time equivalent numbers of staff employed, is possible through proxy measures generated such as admissions per RN, or RNs per bed. These estimates suggest that there has been an improvement in registered nurse staffing levels in the acute sector since Francis, however at a lower level than the growth in absolute numbers.

Growth in registered nurse staff employed in acute Trusts has been constrained by Trusts' inability to fill posts due to the ongoing national shortage of registered nurses. At a shift level, Trusts have had increasing difficulty filling planned registered nurse hours (as gauged through 'fill-rate' data). Nursing staff are reported as working a larger number of additional hours (beyond those contracted).

In common with the national pattern, the total number of registered nurses and nursing support staff has increased at all four case study sites since 2012/2013. Unregistered support staff numbers have grown at a faster rate than registered nurse, creating a reduction in overall skill mix, particularly in those Trusts which started with a higher proportions of RNs.

The success of safe staffing policy can be assessed not only in terms of how Trusts have interpreted and implemented safe staffing policies, but also by examining the extent to which policies introduced post-Francis have enabled Trusts to achieve safe nurse staffing levels. There have been modest increases in nurse staffing levels measured as RNs per occupied beds. The increase in staff per bed however is not always reflected in nursing staff deployed at shift level; fill rates indicate persistent difficulty in achieving planned RN staffing levels. One in four Trusts surveyed reported that the number of patients per RN had exceeded 1:8 on more than 65% of shifts in the past 12 months. Key challenges to planning and achieving safe nurse staffing levels are unfilled vacancies. The average RN vacancy rate in 2017 was 10%; the labour market context has created recruitment and retention difficulties.

Policy implementation: changes and processes

The majority of Trusts surveyed reported that nursing establishments were reviewed at least every six months. Almost all were using the NICE-endorsed Safer Nursing Care Tool (SNCT) or a related tool (Safe Care, in Allocate, Association of UK Hospitals tool, Shelford tool), alongside professional judgment. Electronic rostering has become the norm; 97% of Trusts were using it. Trusts review nurse staffing and assess its adequacy or any shortfall at the start of each shift, using a combination of professional judgement (75% of Trusts) and patient acuity and dependency systems (69% of Trusts). The 'red flags' proposed by NICE as a means of flagging potential compromise due to staffing insufficiency, were being used by 97% of Trusts in their data reporting, and more specifically in varying degrees to report to board and internal operational management.

At a local level, all four case study Trusts had responded to safe staffing policies by making changes to the collection, monitoring, review and reporting of data on staffing. E-rostering and integrated electronic systems had played a key role in improving staff planning and ability to review staffing levels and deployment. Many of the approaches to collecting and reporting data were uniform across the case studies: six-monthly establishment reviews and reports, monthly reporting to board, wards, website and national data repository on planned versus actual nursing numbers and CHPPD. Trusts had started to introduce the use of data to inform day-to-day responses to staff shortfall. Daily staffing review meetings were typically site-wide and involved a multidisciplinary perspective. Escalation procedures in response to shortfall at all four Trusts had changed to include 24-hour bleep cover at Matron-level or above.

Views of the policies: which have been most helpful?

The national survey of Directors of Nursing provided an opportunity to explore views directly, asking how useful different forms of policy and guidance had been, as well as asking how things had changed since Francis. The way in which staffing is planned and rostered, and board awareness of staffing were reported as having improved. However the ability to recruit staff, staff retention, and nurse satisfaction with staffing levels, had not improved, and in many cases had got worse since Francis. The Francis recommendations and NQB guidelines from 2013 were both seen as having been helpful in supporting safe staffing. The elements of guidance related to metrics and reporting –– the use of 'red flags' and reporting CHPPD – were less likely to be viewed positively by Directors of Nursing.

Assessment of costs

Estimated nurse staff costs for NHS acute care increased by 15% between July-September 2012 and the end of 2017 (from £1.9bn to £2.2bn): RN costs increased by 12%, support staff costs increased by 30%. Staff spending at case study sites followed a similar trend to that identified nationally from mid-2012 onwards. In the case study Trusts, the roles of existing staff had changed to enable safe staffing policy to be implemented and a small number of new posts had been created specifically related to safe staffing. Changes in information technology and management processes over time make it difficult to determine whether changes in cost are directly attributable to policy post-Francis. Substantial IT investment has been made, for example through use of electronic rostering and systems to collect and collate patient acuity data, which are supported by analytical staff to collate and feedback staffing requirements.

The impact of safe staffing policy implementation and factors influencing

Safe staffing policy implementation had impacted on the four case study Trusts in terms of: changes in the language used to refer to staffing, increased visibility of safe staffing within the organisation, use of data to support investment in nurse staffing, data providing a rationale for difficult decisions, policy as a driver for accelerated action around safe staffing, tools changing the nature of management practice, and policies enabling workforce redesign.

Ward level safe staffing policy implementation can be regarded as a balancing act, balancing patient need against real time resources, in a context of internal and external influences. A realist evaluation described the many strategies Trusts use to cope with and mitigate against staffing shortfalls. Nevertheless, across the four hospitals, senior nurses reported that sometimes an imbalance occurred, resulting in times when wards were not operating with safe nurse staffing levels.

Four main influences on policy implementation were identified through the realist evaluation: clarity of the safe staffing policy message, how organisations innovate and learn to deliver safe staffing, the role of tools and technologies to support decision making, and the credibility and reliability of staffing and outcome data used.

Implementation appears to work best when there is a 'whole-systems' approach with sufficient alignment across organisational strategies and data systems relevant to safe staffing including workforce, finance, quality, safety, and professional practice. Clearly defined leadership, a shared sense of accountability, consideration wider workforce issues such as recruitment and retention, engagement with external stakeholders and a high degree of goodwill, were all factors associated with success. A lack of transparency and equity around staffing within organisations risked this goodwill.

External limitations have severely hampered Trusts' ability to implement safe staffing policy. A national shortage of registered nurses has constrained Trusts' ability to fill the number of nursing posts that they identified – using the NICE endorsed systems – to meet patient care needs and provide 'safe staffing' levels. The labour market context has been a major challenge to Trusts recruitment of RNs; the number of registered nurses has been, and continues to be, insufficient to meet demand. A recurring theme across the study has been a lack of resource to deliver safe staffing.

The requirement that Trusts both deliver safe staffing in every situation and remain within budget, is a source of tension identified in the case studies and the survey of Directors of Nursing.

In conclusion

The study findings suggest that the principle of 'safe staffing', that underpins policy, has resonated with Trust boards and Directors of Nursing, and the policies have triggered a shift in thinking. Directors of Nursing considered that Board level awareness of safe staffing as an issue had improved since Francis and had been accompanied by Trust investment in nursing. Accountability for providing safe staffing was seen by Directors of Nursing as being part of the culture at every level of the organisation. Safe staffing policy appears to have acted as a catalyst for accelerating a change in thinking which has led to changes in the processes, technologies and systems that support safe staffing as an outcome. We have also seen a shift in resource towards 'safe staffing' in adult acute hospitals.

The Francis report was published after a period in which staffing levels had stagnated. Innovations associated with post Francis policies, including the use of 'evidence based tools' such as the SNCT to review the staffing required with a safety 'lens', identified a need to increase staffing levels in many Trusts. Whilst the post-Francis policies have been perceived as

helpful insofar as they have provided leverage and legitimacy for local practices, they are viewed less positively where national reporting of performance metrics are concerned.

However, the supply of registered nurse staffing has not matched increases in demand; staffing levels in Trusts are falling below the level identified as being needed. There is evidence that there has been a downward shift in skill mix; support staff numbers have increased at a faster rate than RNs. Whilst in the short term this may appear to offer a solution to pulling off the 'balancing act' alluded to in the findings of the realist evaluation, research evidence to date suggests that substitution of RNs with less well trained staff is unlikely to represent an efficient or effective solution.

Financial consideration has been introduced into safe staffing policy after the event, as the perimeter fence that Trusts must work within, rather than at the outset, as an assessment of the investment required to bring nurse staffing levels up to safe levels, based on the guidance and policies developed after Francis.

While Trusts have taken on board and implemented guidelines and policies on safe staffing, their ability to staff according to the levels required has been constrained by external pressures. A number of necessary checks and balances recommended by Francis to safeguard safe staffing from being compromised have not been instigated, allowing the changes made to only partially meet the objective of improving nurse staffing levels in NHS acute hospitals, and reduce the risk of avoidable harm to patients.

Safe staffing policies following Francis set out a vision for safe staffing which appears to have been embedded in Trust actions and attitudes, despite the competing priorities and a context of labour market difficulty. Achieving safe staffing levels however, as opposed to achieving changes in how staffing is planned and monitored, will only be possible if the wider workforce and resource restrictions can be overcome.

Abbreviations

CHPPD	Care Hours per Patient Day
CQC	Care Quality Commission
CLAHRC	Collaboration Leadership Applied Health Research Care
CNO	Chief Nursing Officer
HCA	Health Care Assistant
HES	Hospital Episode Statistics
HRA	Health Research Authority
NICE	National Institute for Health and Care Excellence
NIHR	National Institute of Health Research
NHS	National Health Service
NMC	Nursing and Midwifery Council
NQB	National Quality Board
PPI	Patient and Public Involvement
PRP	Policy Research Programme
RN	Registered Nurse
SNCT	Safer Nursing Care Tool
SSA	Safe Staffing Alliance
WTE	Whole Time Equivalent

1. Introduction

1.1 Background

The Francis Inquiry highlighted the importance of nurse staffing as a factor affecting patient safety; decisions taken about nurse staffing at Mid-Staffordshire Trust had failed to consider the risks to patient care and safety (1). An independent review led by Sir Bruce Keogh, flagged nurse staffing levels as a key factor contributing to higher than expected hospital mortality rates (2). The review recommended that Trusts use an evidence-based approach to plan their staffing. Our research in 2010 found considerable variation in nurse staffing levels on acute hospital wards in England (3) and reinforced the findings from earlier studies that low staffing levels can impinge on the quality and safety of care provided (4–6).

A significant body of research has revealed that registered nurse staffing levels and patient safety are correlated (4,7). The presence of this relationship is evident in inquiry and care quality inspection reports. Whilst evidence of a relationship between staffing and patient safety make apparent the importance of getting 'staffing right' it does not give health service managers guidance as to how that can be achieved. A variety of tools exist to help determine the nurse staffing levels required to meet patient needs for a given service (8). However there has been an absence of research into impact on patient safety and patient outcomes of using workforce planning tools (7).

The Government's response to the Francis Inquiry included several policies and initiatives aimed at ensuring 'safe staffing' in the NHS (9). The National Institute for Health and Care Excellence (NICE) was asked to review the research evidence and develop safe staffing guidance for different clinical settings. At the same time the National Quality Board (NQB) and Chief Nursing Officer (CNO) published a report that set out ten expectations that Trusts should meet to address safe staffing, including using evidence-based tools to review staffing every 6 months, starting from June 2014 (10). To increase visibility and transparency, a policy to publish data on nurse staffing levels on each shift, on each ward, and for each Trust was announced. The Care Quality Commission's (CQC) role to monitor and take action to ensure compliance with the safe staffing policies was also made explicit.

The NICE guidance on safe staffing for nursing in adult inpatient wards in acute hospitals was published in July 2014 (11). It identified organisational and managerial factors needed to support safe nurse staffing, and set out a series of indicators or 'red flags' to assess whether the level of nurse staffing is sufficient to meet patient needs safely, and provide a warning of potential insufficiency. The guidance was accompanied by the endorsement of the Safer Nursing Care Tool (SNCT), to help Trusts review nurse staffing in adult inpatient care.

As a review of nursing labour markets and workforce planning expressed it, in response to Francis there was "*an emerging policy focus on organisational level nurse staffing, with a move to harness the evidence base, and improve the use of staffing tools when determining local nurse staffing numbers*" (12).

The policies that were developed have addressed staffing from multiple angles: guidance relates to how staffing levels are planned, monitored, reported, and reviewed. The expectation that staffing decisions should be evidence-based and open to public scrutiny was made explicit. Whilst safe staffing policies have been broadly welcomed by bodies such as the Royal College of Nursing, to date there has been little evaluation of how these policies have been implemented and what influence they have had on NHS services.

This research study was proposed as a means of addressing some of these gaps, examining both the costs and consequences of staffing changes to inform future policy and practice. The study examines the extent to which policies on a high profile and nationally important issue such as safe staffing have been translated into practice locally within the NHS. Attention to the processes and strategies for implementation have tended to neglect theory such that research risks being an "*expensive version of trial and error*" (13). A more theoretically driven approach to investigating the relationships between context mechanisms and outcomes of policy implementation is required.

Given the context of continued and intensifying financial constraints within the NHS, reviewing the costs and effects that key national policies in health have had is critical. The NHS needs to know whether the policies, put in place in response to the systematic failures identified by Sir Robert Francis, have been effective in achieving safe staffing in NHS acute hospitals.

1.2 Study aims & objectives

The study set out to identify the costs and consequences of implementing safe staffing policies following the Francis Inquiry and to use a theory driven enquiry to explain what has shaped policy implementation. At the time that the study was commissioned in 2015, policy related to ensuring that nurse staffing levels were sufficient to provide care safely in NHS hospital wards were centred on two main elements:

- Guidance launched by the National Quality Board (NQB) and Chief Nursing Officer in November 2013, which set out ten expectations of NHS Trusts in relation to staffing.
- National Institute for Health and Care Excellence (NICE) guidance on safe staffing for nursing in adult inpatient wards in acute hospitals published in June 2014, and accompanied by an endorsement of the Safer Nursing Care Tool (SNCT) for planning nurse staffing levels.

The aim of the study has been to examine how safe staffing policies have been implemented by Trusts and explore the impact that policies have had. The central question the study sought to address was: *"What difference have safe staffing policies introduced after Francis made to the achievement of safe staffing in the NHS?"*

The study aims were to examine how implementation of safe staffing policies has varied between Trusts, describe the factors that influence implementation locally, and provide an assessment of the costs and consequences of safe staffing policy implementation.

The study objectives were to:

Describe how safe staffing policies have been implemented by Trusts:

a) describe processes in place and actions taken to plan staffing levels on wards and across hospitals;
b) describe systems for monitoring and reporting staffing levels;
c) determine how staffing levels have changed in response to guidance;
d) determine how trusts assess, review and react to adequacy of staffing levels; and
e) describe variation in implementation and action between organisations.

Determine the associated costs of policy implementation at Trust level:

a) Costs associated with processes and actions to plan staffing levels, with systems for monitoring and reporting staffing levels and with any changes made to staffing numbers.
b) Economic assessment of net effect of changes in staffing and outcomes.

3. Describe the effects and outcomes of safe staffing policy implementation (both intended and unintended) on:

a) Patients – changes in number of patient safety incidents, reported patient satisfaction.
b) Staff – impact on staff morale, staff well-being.
c) Unintended consequences – 'knock-on' effects of staffing changes.

4. Describe processes of policy implementation paying attention to contextual factors:

a) Reported barriers to implementing guidance (e.g. local labour market).
b) Trust views of safe staffing measures and changes needed to improve them.

1.3 Approach and scope

The study adopted a multiple method approach to examine safe staffing policy implementation and impact at both a national and local level. Research activity has centred on four strands of work:

1. Mapping national policies and context.
2. Analysis of national secondary data sources.
3. National survey of Directors of Nursing in acute NHS Trusts.
4. Case studies
   i) Assessment of processes and costs of policy implementation.
   ii) Realist evaluation of factors influencing implementation.

The primary focus of this research has been on acute hospital NHS Trusts in England, as that was the focus Francis Inquiry and policy response in relation to safe staffing. Nevertheless the findings should have transferability and implications for safe staffing policy and practice that go beyond acute Trusts, to other organisations and care settings.

Chapter 1 Summary

- → The Francis Inquiry and other reviews highlighted the importance of nurse staffing as a factor affecting patient safety.
- → The study aimed to examine how implementation of safe staffing policies has varied between Trusts, describe the factors that influence implementation locally, and provide an assessment of the costs and consequences of safe staffing policy implementation.
- → The focus of the research is on acute hospital NHS Trusts in England.

2. Background

In this chapter we outline the background that led to a policy interest in nurse staffing and how policies to support 'safe staffing' have emerged in a dynamic and evolving landscape, prior to and after the release of the public inquiry into the failings at the Mid Staffordshire Trust, led by Sir Robert Francis.

Whilst there is no single definition of 'safe staffing', NHS constitution, NHS England, CQC regulations, NICE guidelines, NQB expectations, and NHS Improvement resources all make reference to the need for NHS services to be provided with sufficient staff to provide patient care safely. NHS England cites the provision of an *"appropriate number and mix of clinical professionals"* as being vital to the delivery of quality care and in keeping patients safe from avoidable harm (14). For the purposes of this report, the research team have amalgamated ideas from the different sources and define 'safe staffing' as: *"having sufficient numbers of nursing staff with adequate level of skills to meet patient needs safely and prevent avoidable harm"*.

2.1 Safe staffing pre-Francis

The roots of modern day nursing and hospital design are grounded in Florence Nightingale's analysis which revealed the extent to which death in the Crimean War was related to the conditions of the hospitals, as opposed to combat (15). A hundred and fifty years later, the conditions needed for safe and effective care in acute hospitals, including the nurse staffing required, continues to be of interest.

Hospital wards need to have sufficient nurses with adequate skills on duty to meet patient needs and deliver the nursing care required, safely and to a high standard. Too few staff may lead to care being compromised (16), work pressures becoming intensified leading to burnout (17), more staff going off sick (18), and costly recruitment and retention challenges (19). Yet with constrained budgets, health service providers can ill afford to staff wards with more nurses than they need.

In 1994, Aiken and colleagues published a paper that asked the question: *"Are hospitals that are good for nursing staff also better for patients?"* (20). Their analyses found that 'Magnet' hospitals (i.e. hospitals that were good at attracting and keeping nursing staff) had significantly lower case-mix adjusted mortality rates than a sample of matched comparator non-magnet hospitals (20). The study heralded further research in this area, looking explicitly at hospitals in terms of organisational characteristics in general and nurse staffing in particular. A retrospective study by Needleman and colleagues reported that shifts with RN staffing levels below that planned (by 8 hours or more) were associated with 2% more deaths than would be expected based on the mix of patients. The results reinforced the need to match staffing to patients' needs for nursing care. Others have reviewed the economic value of professional nursing in terms of reduced patient complications and the shorter lengths of stay associated with improved nurse staffing levels (21).

'Getting staffing right' or ensuring that health services have *"the right skills, in the right place, at the right time"* as the NQB phrases it, (10) is thus recognised as an important factor in health care delivery. In England, as in most other parts of Europe, registered nurse staffing levels and the approach to planning are not mandated, as they have been in California, parts of Australia, and more recently in Wales (22–25). Operational decisions about the number of nursing staff per ward and per shift are determined locally, within each Trust.

Prior to the independent inquiry into the Mid Staffordshire Trust in 2010 (1), there was little national guidance or policy relating to approaches to planning nurse staffing levels. In many organisations determining the number of nurses needed was largely based on replicating the pattern of staffing that had gone before, with little systematic assessment or review (26). An audit commission report in 2001 recommended that approaches to nurse staffing should be *"simple, transparent, integrated, benchmarked and linked to ward outcome measures"* (27). However whilst a range of systems and tools were available, there has been little independent research regarding the validity or effectiveness of the approaches. The Audit Commission generic recommendation was not translated into more specific national guidance for NHS providers on how they should plan nurse staffing levels, which tools to use, or how to assess the adequacy of levels achieved (28,29).

The inquiries by Sir Robert Francis into the care crises reported at Mid-Staffordshire NHS Trust highlighted that a lack of evidence-based approach and failure to consider patient safety implications of changing nurse staffing, had contributed to patient neglect and patient deaths.

2.2 The Mid Staffordshire Trust & Francis Inquiries

The Mid-Staffordshire Hospital Trust in England ('Mid Staffs') came to public attention in 2009 following reports of profound patient neglect and higher than expected mortality rates (1). Substantive changes to nurse staffing had occurred at Mid Staffs despite concerns from professional bodies about potential impacts (30). Responding to a reform agenda characterized by a focus on targets, financial restraint, and pressure to achieve Foundation Trust status had resulted in the organisation making workforce changes without considering the risks to patients (1). In 2006, the Trust reduced 150 posts, instigated a ban on the use of agency staff and left 150 posts vacant to save £10 million to meet Foundation status requirements (30).

A review by the Health Care Commission (31) pointed to higher than expected mortality rates at the Trust and identified issues with nurse staffing and the quality of care as one of the concerns. In April 2009 two other reviews highlighted the serious nature of concerns about the Trust (32,33). In July 2009 the Health Secretary appointed Robert Francis to chair an independent inquiry; the report from this first inquiry was published in February 2010. Following public pressure and a change of government, a full public inquiry was set up to examine how the operating, regulatory, and monitoring systems had failed, and make recommendations for the NHS to reduce the risk of such failure in care being repeated.

2.3 NHS Context at the time Francis

The Public Inquiry was conducted over three years. As the inquiry was underway, in the wider context, nurse staffing was being influenced by ongoing reforms and issues of funding and supply. The global financial crisis in 2008 resulted in the national introduction of austerity measures that had flow-on effects to the NHS, even though funding was ring-fenced. The need for efficiency gains of £15-20 billion was signalled (34,35) involving reductions in non-clinical staff, budget cuts and a wage freeze (36). Meanwhile the NHS prepared for considerable structural reform, with the introduction of the 'Health & Social Care Act 2012' (37). Awaiting the outcome of the Public Inquiry and recommendations for change, there continued to be no specific guidance on nurse staffing numbers. However the number of nursing places commissioned by Strategic Health Authorities was reduced (30), prompting the Royal College of Nursing to express concern that the size of the nursing workforce would be insufficient to meet future demand (38).

Concern about the lack of recourse to the evidence on nurse staffing prompted the Florence Nightingale Foundation and Nursing Standard to co-host a round-table event in 2012 involving senior nurses and workforce experts, to consider nurse staffing. It led to the formation of the Safe Staffing Alliance (SSA), a group established to promote the use of evidence in nurse staffing and to address workforce cuts (39). Whilst the SSA had no formal mandate, the make-up of the group, representing a cross-section of senior nursing leaders from across the healthcare spectrum, added voice to the concerns being raised by the two national nursing unions that nurse staffing was a serious problem meriting policy attention (40,41).

In late 2012, shortly before the release of the Public Inquiry, the Chief Nursing Officers published, "*Compassion in Practice: Nursing, midwifery and care staff: Our vision and strategy*" (42). The strategy included staffing as one of six action areas and set out plans to "*use the evidence, both national and international, to provide a series of tools to determine, locally, the most appropriate staffing levels for a particular health and social care setting that reflects and delivers quality of care, productivity and a good patient or user experience*" p22.

2.4 Recommendations from the Francis Inquiry

The public inquiry into the Mid Staffordshire NHS Trust (Mid Staffs) released in February 2013 pointed to fundamental flaws in the structure and culture of the NHS, and how these had led to serious care failures (43). In relation to nurse staffing the Inquiry highlighted poor decision-making, a failure to undertake risk assessment when changing levels or skill-mix, privileging financial matters over quality and safety, failures of leadership, not taking senior nursing advice, and failure to act in the face of evidence (Francis, 2013).

Of the 290 recommendations made, a number related to nurse staffing either directly or indirectly: the need for increased governance accountability, an evidence-based approach, supernumerary supervision by ward managers, enhanced leadership, the need to develop systems and standards for setting staffing, developing tools and standards to measure effectiveness, and increased monitoring (43).

Recommendations 21,22, and 23 proposed that NICE should be tasked with developing *"evidence-based tools for establishing the staffing needs of each service"* (p69) that were to include *"measures not only of clinical outcomes, but of the suitability and competence of staff, and the culture of organisations"* (p88) in establishing minimum staffing and skill mix. In terms of monitoring compliance, higher level of powers, accountability and involvement were proposed for Commissioners and Boards including the ability to stop provision of a service and the responsibility to *"seek and record the advice of its nursing director on the impact on the quality of care and patient safety of any proposed major change to nurse staffing arrangements or provision facilities, and to record whether they accepted or rejected the advice..."* (p107).

Two other recommendations touched on the extent to which the nurse staffing level itself, not just approaches to planning it, should be prescribed. The first was a proposal that staff to patient ratios could be considered (43) p88. The second was a recommendation that the NHS Litigation Authority should: *"...introduce requirements with regard to observance of the guidance to be produced in relation to staffing levels, and require trusts to have regard to evidence-based guidance and benchmarks where these exist and to demonstrate that effective risk assessments take place when changes to the numbers or skills of staff are under consideration*. (43) p94.

2.5 Government response and policy development

The government's response, published in 'Patients First and Foremost' (9), indicated a commitment to upholding many of the 290 recommendations. The overarching message was:

"Patients come first in everything we do. We fully involve patients, staff, families, carers, communities, and professionals inside and outside the NHS. We put the needs of patients and communities before organisational boundaries" (9) p9.

The response highlighted the importance of appropriate staffing levels and built on the 'Compassion in Practice' nursing strategy, setting out accountability for actions and outcomes. The intention to support the responsibility for local decision-making through the development and use of centrally developed evidence-based tools was signalled. The recommendation to consider fixed nurse to patient ratios however was not taken up. The response to the recommendation regarding a change in the role of the NHS Litigation Authority, made clear that accountability for nurse staffing levels was to continue to reside with Trusts (and regulators):

> *"The NHS Litigation Authority is not in a position to introduce requirements with regard to the observance of guidance in relation to staffing levels, or to require the assessment of appropriate skill mix, staffing level and staff patient ratios. It is for trusts (and where appropriate, regulators) to have regard to evidence based guidance and benchmarks and to undertake effective risk assessments when changes to numbers or skills of staff are under consideration" (44).*

A series of government reviews were rapidly commissioned to further inform the policy response to the Francis recommendations of which two (2,45) specifically reinforced the messaging around the importance of adequate nurse staffing and the mechanisms needed to achieve it and criticised the decision-making culture:

> *"In some organisations, in the place of the prime directive, 'the needs of the patient come first', goals of (a) hitting targets and (b) reducing costs have taken centre stage" (2), p8.*

Both reports emphasised the need for evidence-based tools, a shift-by-shift focus, improved monitoring, and shared accountability for staffing from 'Board to Ward'. Berwick supported the recommendation to task NICE with developing evidence-based staffing guidelines and emphasised the importance of Trusts taking heed of existing evidence suggesting that:

> *"operating a general medical-surgical hospital ward with fewer than one registered nurse per eight patients, plus the nurse in charge, may increase safety risks substantially. This ratio is by no means to be interpreted as an ideal or sufficient standard; indeed, higher acuity doubtless requires more generous staffing" (45), p23.*

In November 2013, the NQB and CNO launched a follow-up document to *Compassion in Practice,* providing the first specific directives about what was expected to be in place or put in place including the parameters to be used in approaching staffing (10). The policy, 'How to ensure the right people, with the right skills, are in the right place at the right time: A guide to nursing, midwifery and care staffing capacity and capability' was presented as an aid to organisational decision-making by identifying tools, resources and examples of good practice.

The document clearly ascribed accountability for nursing, midwifery and care staffing capacity and capability to Boards and included specific responsibilities relating to systems, processes, setting establishments and monitoring. The accountabilities required Boards to ensure sufficient staffing capacity and capability to provide high quality care in all settings and at all times. Executive teams were tasked with ensuring robust processes to *"enable staffing establishments to be met on a shift-to-shift basis"* (10) p5. Specific actions to deliver on this expectation were detailed. The use of evidence-based tools in conjunction with professional judgement was an expectation. The guideline did not offer any specifics about staffing standards, deferring to NICE on this, along with a cautionary note about the limitations; "*Getting the right staff with the right skills to care for our patients is not something that can be mandated or secured nationally"* (p3). Defined staffing ratios were rejected in favour of the use of *"evidence, evidence-based tools, professional judgement and a truly multi-professional approach"* p3. NICE commenced work on the first guideline in the latter part of 2013 accompanied by broad cross sector support (46).

In January 2014, the Government's presented its response to both Francis Inquiries and the findings from the follow-up reviews to parliament. 'Hard Truths: The journey to putting patients first' (47,48) reinforced the NQB Guidance and determined timelines for key actions to be in place by Trusts. The annual NHS England Business Plan 'Putting Patients First' (49) published in late March 2014 elevated 'Compassion in Practice' to a stand-alone business area under the leadership of the CNO. Key deliverables relating to staffing included: measurement of the effectiveness of the NICE Guidelines by August 2014; further NICE approved tools for staffing levels by September 2014; and, ward level staffing numbers to be published by all trusts in accordance with NICE accredited tools by June 2014.

2.6 NICE safe staffing guidelines

In July 2014, NICE published the first guideline on safe staffing for nursing in adult inpatient wards in acute hospitals recommending a systematic ward level approach to *"ensure that patients receive the nursing care they need, regardless of the ward to which they are allocated, the time of the day, or the day of the week"* (50) p5. The guideline included organisational strategy, principles for determining nursing staff requirements, setting the ward nursing staff establishment, assessing if nursing staff available on the day met patients' nursing needs, and monitoring and evaluating ward nursing staff establishments.

Indicators to assess staffing efficacy were proposed including a set of 'red flag' indicators that could be observed in 'real time' and which should prompt an immediate response. Whilst nurse to patient ratios had not been included in the scope provided to NICE (51), the guideline referred to evidence associating an increased risk of harm when a registered nurse is caring for more than 8 patients during day shifts – and recommended this be used as a warning level to prompt review.

The guideline was systematic in its advice, however it identified a lack of specificity in the evidence base which restricted the specificity of guidelines produced. Whilst there was ample evidence of a relationship between nurse staffing and patient outcomes in general, there was little high quality evidence (and even less specifically from the UK) to inform how to translate this evidence into implementable standards at the service level (50). NICE made detailed recommendations about where future efforts needed to be made to address the evidence gap.

In October 2014, the first decision-support tool, the 'Safer Nursing Care Tool' (SNCT) was endorsed with some caveats (50).

2.7 Shifting policy context

In early 2015 the Secretary of State for Health presented 'Culture Change in the NHS: Applying the lessons of the Francis Inquiries to parliament (52). The messaging appeared uncompromising: *"Where once poor care and low staffing levels were accepted in parts of the NHS as a necessary evil, they are no longer tolerated anywhere in the system"* p13. National guidance on nurse staffing was referred to along with confidence that changes made to the systems would mean that "*any failure to follow this* [guidance] *would be visible at an early stage and ring alarm bells for the board, the public, commissioners, the media and the Care Quality Commission"* p10. The progress made by NICE on staffing guidelines was noted along with the intention to continue coverage of further areas such as accident and emergency, community, mental health, primary care.

However the 'Five Year Forward' (53) and subsequent NHS England business plan (54), marked a shift. The plan contained just one reference that could be said to relate to safe staffing, touching on a *"requirement that all patients are treated and cared for in a safe environment and protected from avoidable harm is fundamental"* p.44.

Also in 2015, productivity and cost saving opportunities in the NHS were identified through the 'Carter Review' (55). Suggested savings of £5bn annually were proposed by targeting unwarranted variation, with 40% of this saving come from staffing with a strong emphasis on nursing costs.

In June 2015 it was announced by NHS England in a letter from the CNO that NICE's work in developing safe staffing guidelines was to be discontinued (56). Future work was transferred to the planned new entity 'NHS Improvement' in conjunction with NHS England and the CNO.

In August 2015, a letter from Monitor's chief executive to NHS Trusts warned of an *"almost unprecedented financial challenge"* (57), recommending money-saving measures such as only filling essential staff vacancies and to follow guidelines on safe staffing in a "*proportionate and appropriate* [way]" (58). In October 2015, the 'arms-length bodies' wrote to Trusts seeking to clarify contradictory messaging between requirements to achieve safe staffing and "*the need to intensify efforts to meet the financial challenge*" (59) p1. The letter reinforced that *"the responsibility for both safe staffing and efficiency rests, as it has always done, with provider Boards"* p1 and that *"Trusts are responsible for ensuring that they get the balance right by neither understaffing nor over-spending…* "p2. Assurance was given that ongoing work was underway to "*put in place a more sophisticated approach to measurement of nursing time and its connections with outcomes, costs and other critical measures; and development of further safe staffing guidance"* p2. The letter also added that the 1:8 ratio that NICE had highlighted as a potential alarm bell to trigger review of staffing levels, should be treated as a *"guide not a requirement"* p2.

The NHS planning guidance for 2016/17–2020/21 (60) outlined service and fiscal expectations and included targeting workforce productivity. The goals set included: 2-3% annual improvement in NHS efficiency and productivity, commissioners and providers staying within budgets, supporting NHS Improvement to secure annually £1.3 billion of efficiency savings, and reducing spend on agency staff by at least £0.8 billion on a path to further reductions. Controls on using nursing agency staff and the introduction of price caps were confirmed in the autumn of that year (61).

In mid-January 2016, a strategic statement of intent was issued jointly by NHS Improvement and the Chief Inspector of hospitals, to NHS Trust boards (62). Its intention was to clarify the position in terms of policy priorities:

> "*We know that, in the past, there was a perception that delivering financial targets was more important than delivering the right quality outcomes; and that, more recently, improving quality was more important than staying in financial surplus. We want to clearly and unequivocally state, with the full support of our other arms' length body colleagues, that your task as provider leaders is to deliver the right quality outcomes within the resources available".* (62)

The following month saw the publication of Lord Carter's final report (63). The most direct implication for nurse staffing arose from a recommendation to introduce a new measurement, Care Hours per Patient Day (CHPPD) to address variation in how many hours of direct care patients were receiving in different organisations. Key benchmarked performance and reporting mechanisms were proposed for local and national level, p23.

2.8 Revised policy on safe staffing

In May 2016, NHS England launched an operational response to recommendations around addressing unwarranted variation in practice 'Leading Change, adding value: A framework for nursing, midwifery and care staff' (64) building on earlier policy documents. Staffing was explicitly covered, restating commitments made in the 2013 'NQB Guidance', adding references to sustainability and productivity, and requiring CHPPD to be collected and reported to NHS Improvement. This was closely followed by updated staffing guidance (65).

The 'Revised NQB Guidance' required CHPPD be collected, as well as providing a suggested set of baseline indicators that should be used to measure impact. In terms of specific guidance around setting staffing levels and skill-mix, the need to use evidence-based tools and professional judgment was reinforced but with strong encouragement to also consider changes to skill mix and models of care to achieve productivity gains.

In December, the NQB published 'Safe, sustainable and productive staffing: An improvement resource for adult inpatient wards in acute hospitals' (65). The resource was aimed specifically at adult inpatient wards and was informed by NICE's evidence reviews (7,66) and subsequent resources relating to aspects of staffing levels, shift work and flexible staffing (67). Overall the ward-specific document reiterated earlier guidance and provided links between the NQB guidance on staffing and other sector guidance.

New recommendations included ensuring *"responsiveness time"* in base staffing to ensure that *"staff are able to respond effectively to changes in patient need and other demands for nursing time that occur often but are not necessarily predictable"*, p9, and reinforcement of the Francis Report recommendation that Ward Manager roles be supervisory. The use of professional judgment in conjunction with evidence-based tools and CHPPD was put forward. The NHS Improvement included general advice resource from the generic NQB guidance on staffing (65) and sign-posted workforce related policy and initiatives such as: planning staffing around multi-disciplinary models of care, the introduction of the Nursing Associate role, use of e-rostering, flexible shifts and strategies such as 'float pools'.

Chapter 2 Summary

- A connection between nurse staffing and the quality, safety and outcomes of care has long been recognised and supported by research evidence spanning decades.
- Prior to 2014 decisions about nurse staffing levels and skill mix were made by Trusts locally without formal guidance on the systems to be used or levels to be achieved.
- Events at Mid Staffordshire and subsequent inquiries led by Sir Robert Francis revealed that the patient safety risks associated with low RN staffing levels had not been considered in the decision to reduce the number of nursing posts at the Trust.
- Response to inquiries (led by Francis, Berwick and Keogh) and the recommendations made prompted a response from the government, Department of Health, NHS England and arms' length bodies, to ensure that patients, and their safety, were put *"first and foremost"* in the NHS.
- Policies and guidance to support 'safe staffing' following Francis were issued (summarised in Box 2.1), including the NQB expectations of Trusts and commissioning of NICE to develop evidence-based guidelines on safe staffing.
- A number of policy documents and directives since 2015 emphasise approaches to workforce and staffing need to be sustainable and affordable as well as achieving levels needed for safety.
- The Carter Review (2016) outlined strategies to tackle variation in efficiency and workforce productivity, including monitoring Care Hours per Patient Day.
- Policies that relate to the provision of safe staffing levels have continued to evolve, as the NHS context changes.

Key policies and guidance that have had a bearing on the development of safe staffing policy in response to Francis are listed in Table 2.1.

Table 2.1: Timelines: key policies & guidance related to safe-staffing

February 2010	First Francis Inquiry Published
February 2013	Second Francis Inquiry Published
December 2012	Nursing strategy: Compassion in practice – area 5: staffing (CNO)
November 2013	Announcement that staffing data would be made publicly available (Secretary of State for Health, Houses of Parliament).
November 2013	National Quality Board (NQB)/CNO guidance
June 2014	National Institute for Health and Care Excellence (NICE) guidance on safe staffing for nursing in adult inpatient wards in acute hospitals
July 2014	Endorsement of the Safer Nursing Care Tool (SNCT) (NICE)
April 2014	Guidance on publishing data on nurse staffing levels: 'fill-rates' (CNO guidance, NHS Choices)
June 2015	Discontinuation of guidance on safe staffing by NICE. Transfer to NHS England and NHS Improvement
September 2015	Announcement of agency 'cap' Note: Rules on agency price caps were announced in September and in November guidance was released
February 2016	Carter Review Note: the interim report was released in June 2015
July 2016 December 2016	Refreshed NQB updated guidance; NQB guidance for acute adult inpatient settings
January 2018	NHS Improvement 'Safe & Sustainable Staffing Resources'

3. Methods

To address the research questions about the implementation of safe staffing policy nationally and locally, and examine costs and consequences, required both breadth and depth of enquiry. The approach adopted needed to establish the extent of policy implementation and how this has varied between Trusts nationally, whilst exploring in detail local responses to safe staffing policies how implementation has been shaped.

The research methods used in this two-year 'mixed-methods' study, comprised three main elements: 1) a national survey of acute NHS Trusts; 2) an analysis of national secondary datasets; 3) case studies involving in-depth qualitative study of implementation and quantitative economic assessment of impact. Across the study, patient and public involvement was considered, as well as exploring the perspective of frontline staff and stakeholders.

The study focussed on NHS acute Trusts and adult in-patient settings in particular, as this is the setting to which NICE safe staffing guidance pertains. Whilst nursing staff has been the primary focus, the study has examined the impact of policy implementation in a broader context.

3.1 Secondary analysis of national data

Data on all NHS trusts that are published and available were collated to provide a high-level overview of staffing changes and outcomes. Data sources drawn on included:

- NHS Information Centre non-medical workforce statistics – examining the full-time equivalent (FTE) of staff in the NHS, and available data on vacancies and bank/agency spend.
- NHS Choices website – looking at data on 'fill-rates' that describe the difference between planned staffing and actual levels achieved for each Trust, in order to examine changes since first monitored.
- Patient outcomes such as falls, pressure ulcers, hospital acquired infections, catheter acquired urinary tract infections, deep vein thromboses, as reported through the 'NHS Safety Thermometer'.
- Staff satisfaction – particularly focusing on views of staff on workload and staffing level, obtained through the NHS staff survey.
- System/Trust changes – observable changes in net unit costs attributed to staffing changes.

These data were examined longitudinally to detect trends in workforce numbers and explore if the introduction and implementation of safe staffing policies appeared to have had an impact on numbers of staff employed in the acute sector nationally. The national data sets were also used to examine Trust level changes for the four case study sites (see section 3.3).

By examining staffing data from other sectors, beyond acute hospitals, we explored whether safe staffing policy implementation may have had any 'knock-on' effects on the broader NHS workforce context. Quantitative analysis of changes in staffing levels over time provides a descriptive account at identified points across the time series. Long-term or secular trends in staffing levels were examined to explore evidence of change related to exogenous 'shocks', such as the Francis Inquiry or policy changes.

3.2 National survey of Trusts

A census survey of Directors of Nursing all NHS Acute Trusts in England (149) was undertaken in Feb-April 2017 to gauge how policies on safe staffing had been implemented (objective 1) and to gain an overview of national variation in staffing changes and implementation, and the attributed costs and consequences (objectives 1, 2 and 3). The population was identified through Binley's management database and details refined by checking websites and, where necessary, telephoning Trusts. To maximise the response rate we offered multiple participation routes for the survey (online, postal, and telephone). Follow-up contact and reminders were targeted at non-respondents.

As well as providing a broad descriptive account of policy implementation, the aim of the survey was to profile the population so as to place the case studies in context.

A questionnaire entitled "Safe Staffing in the NHS: Survey of Directors of Nursing" was developed to address the core issues identified in the policy and guidance documents on safe staffing, and seek Directors of Nursing views about the current situation, the extent things had changed since Francis, and their views on the helpfulness of specific policies and guidance in achieving safe staffing (see Appendix). After a cover page describing the study and making clear participation was entirely voluntary, questions were organised under five sections:

A Establishment setting

B Staffing per shift

C Assessing staffing adequacy on the day

D Measure of staffing

E Your views

Most questions were closed with tick box responses provided, but the questionnaire also included two open ended questions (on challenges in planning, and challenges in achieving safe staffing level in their Trust) and a final space for *"any other comments about nurse staffing, the policies aimed at ensuring safe staffing, or process of implementing national policies and guidance"*. Data from the paper forms were manually entered. Open ended responses were typed, and a coding frame developed to allow common themes to be identified and responses categorised, to enable a quantification of the frequency of different issues being raised. Descriptive analysis of the data (frequencies, cross tabulations with chi-square, comparison of means with ANOVA) was undertaken using the IBM statistical analysis software, SPSS.

3.3 Case studies

Case studies were used to gain an insight into the detail of the process of implementing safe staffing policies at Trusts, to explore the costs and consequences of implementation and, through a realist evaluation (described in 3.3.1), to better understand the factors shaping policy implementation. The case studies involved a mix of quantitative, economic and qualitative methods. Areas of enquiry covered three main domains: policy implementation (objectives 1 and 4), staffing changes and associated costs (objective 2), outcomes and associated costs (objective 3).

A parallel study (HS&DR 14/194/21) underway at the University of Southampton on the use of the SNCT provided the research team with access to staffing data in four NHS organisations, and allowed us to develop 'in-depth' comparative case studies of policy implementation and impact. The sample comprised four cases: 2 general hospitals (1 large, 1 medium), a large teaching hospital, and a specialist hospital.

3.3.1 Processes and costs of policy implementation

The resource implications of policy implementation was examined in the four case study Trusts, looking at the activity undertaken and costs associated with planning and providing safe nursing care. Financial costs to the organisation were identified in terms of the costs for additional staff requirement (as identified by the staffing tool), costs of administration and costs of technical support for implementing safe staff planning processes.

Both ward and Trust level data have been collected on the implementation effort and resource that has been required to implement safe staffing policy. For example:

- → Costs associated with using SNCT or other workforce planning methodologies (relative to what was in use before).
- → Responses to assessed need – increasing staffing, redeployment, escalation policies, temporary staffing.
- → Reporting/monitoring staffing – at ward and Trust level

A detailed description of resource use associated with using the SNCT and the process of planning, reviewing and monitoring staffing was developed to include costing resources associated with collecting the data required for the tool and activities

within the Trust that are related to planning, reviewing and reporting nurse staffing. Assessment of cost identified one-off costs (e.g. associated with the initial implementation of the workforce planning programme, which may have included IT investments, additional clerical/technical support or staff training) and on-going costs incurred throughout the nurse staffing planning cycle.

Discussion with key informants within the Trust allowed a description of the activity and impacts of implementation to be built. The range of staff expected to be involved were: senior nursing staff responsible for implementing the safe staffing initiative and adoption of the SNCT, finance staff responsible for managing staffing budgets, ward–level staff responsible for collecting and/or quality assuring SNCT data, relevant IT management and support staff.

Trust documentation and reported data were reviewed to identify resource implications of safe staffing changes, e.g. examining the regular reporting (e.g. to Trust Board) on staffing levels, fill rates (a shift by shift comparison of achieved vs planned staffing), and NHS Safety Thermometer data, as well as the biannual staffing reviews. Resource use descriptions and associated costings were developed for a single instance of each report cycle and then applied to each recurrence.

A challenge was to disentangle the description of the current planning process from staff planning process used previously to provide a definitive estimate of the incremental cost. To avoid over-stating the costs attributable to the adoption of safe staffing policy, we used a range of approaches (including qualitative methods) to derive a description of the workforce planning processes in each Trust prior to the safe staffing initiative.

The University of Southampton HS&DR study provided a framework for data collation and analysis that allowed us to examine the impact on staffing levels (predicted, and actual) of using SNCT in hospital Trusts. This enabled the associated costs to be determined. We added to that by collecting a wider range of ward and Trust level data on workforce for periods that pre-dated the SNCT study, to establish the net effect of safe staffing policy implementation on the Trust. For example, using data drawn from the SNCT itself, e-rostering, and HR workforce data in addition to key informant interviews, we can collate data on:

- the level of nurse staffing for wards as determined by the SNCT;
- achieved level of nurse staffing (e-roster);
- trends in the match or mismatch between the planned and achieved levels;
- changes in the incidence of shortfall in staffing (relative to SNCT); and
- recruitment of staff.

The data from the SNCT study could provide descriptive statistics on ward-level staffing and to examine variation over time, looking at trends throughout the year or variation by day of the week. [The HS&DR SNCT study is due to be completed later in 2018].

Analysis of staffing identifies the costs associated with staffing on wards within the Trusts, but takes no account of recruitment costs or potential short-term capacity to employ/re-deploy staff within Trusts. We used the case studies to examine the approaches used by the Trusts to meet identified ward staffing deficits and their resource implications, including administration costs, recruitment costs, use of overtime, redeployment, and the use of bank/agency staff.

3.3.1 Realist evaluation of policy implementation

Qualitative research to explore the barriers and facilitators to implementing safe staffing policy adopted a realist evaluation approach (objective 4). Realist evaluation (68) aims to 'develop explanatory programme theory' by acknowledging the importance of context in understanding how safe staffing policy implementation has worked, for whom, and in what circumstances . Programmes (i.e. organisational activities connected to safe staffing policy) are broken down so that we can identify what is about them (mechanisms) that might produce a change (impact), and which contextual conditions (context) are necessary to sustain desired changes. Specifically the qualitative case studies aimed to:

- investigate the context of the organisational response to safe staffing policies in four NHS organisations;
- identify and track safe staffing policy implementation mechanisms and processes within and across these organisation;.

- determine what had shaped how safe staffing policy has been implemented (or not), paying particular attention to contextual factors; and
- evaluate both the intended and unintended consequences of safe staffing policy implementation.

Our case study work reflected the complexities of implementation within health organisations by focusing on how individuals and organisational units engaged with safe staffing policy, and investigated policy impact in relation to:

- **instrumental use:** the direct impact of policy on ways of working;
- **conceptual use:** how policy may impact on thinking, understanding and attitudes; and
- **symbolic use:** how policy may be used to legitimatise opposition or change (Weiss 1979).

The work comprised three phases:

- **Phase 1:** Interviews and co-production workshops (within cases) to map policy implementation contexts.
- **Phase 2:** Programme theory development (checking through a cross-case event).
- **Phase 3:** Programme theory evaluation.

In Phase 1, five semi-structured interviews were to be conducted in each case to explore the organisational response to safe staffing policies, with a purposive sample of nursing managers. This phase concluded with a within-case co-production workshop to generate a deeper understanding of the contexts of safe staffing.

A purposive sample of up to 20 participants was identified by the NHS organisation from across stakeholder constituencies and invited to each workshop. These samples combined a range of discussion and practical activities based on soft systems methodology in order to illuminate the complexity of systems in which safe staffing operates (69). This approach had been used successfully in previous research: a realist synthesis of workforce development within Older People's health services (HS&DR project 12/129/32). A comprehensive analysis of the contexts of each NHS organisation in relation to its response to safe staffing policy was used to inform further data collection activities exploring safe staffing policy implementation, and to develop an initial programme theory.

Using our initial programme theory as a guide and drawing on the interviews conducted as part of the analyses of contexts in phase 1, programme theories/plausible hypotheses about 'what works' were developed with stakeholders phase 2. A cross-case workshop was held to check the credibility and representativeness of the initial programme theory. This allowed us to further refine hypotheses for this study.

Finally, in Phase 3, we undertook a series of follow-up interviews and a documentary review to evaluate the hypotheses developed against what had happened in reality within each case, i.e. what is working (direct, conceptual and political impacts) for whom, how, and in what circumstances. Interviews targeted relevant stakeholders such as ward managers, matrons, executive leads for nursing, workforce, and finance, within each case. The focus in phase 3 was on perceptions about what influenced policy implementation efforts, and stakeholder perceptions of both the intended and unintended consequences of policy implementation.

Analysis was focused on developing and refining the relationships between mechanisms and context and determining their impact on outcomes. Each case was regarded as a 'whole study' in which convergent evidence was sought and then considered across multiple cases. A pattern matching logic was used, which allowed us to build up an explanation of policy implementation *within* sites, and then a*cross* the four sites.

3.4 Patient and Public Involvement

The topic of nurse staffing levels was identified as a priority for research through a consultation and prioritisation exercise undertaken on behalf of NIHR CLAHRC Wessex (70) and at a workshop involving both patients and public (23) and NHS staff (16) in October 2015. A further workshop exploring aspects of nurse staffing that could be pursued through research was held with a mix of 28 patient, public and staff in June 2017. The current study was commissioned following an invitation to tender from the Department of Health, the proposal and did not include any specific Patient or Public Involvement (PPI). It should not be under-estimated how important the theme of 'safe staffing' is to the general public, given that the inquiries at Mid Staffordshire were triggered by staff and patient whistleblowing and concern over safe practice at the Mid Staffordshire Hospitals Trust.

The study has included patient input through: a) membership of the advisory group (Ruth Lutz and Francesca Lambert – see below), b) interviews undertaken by the Bangor University team as part of the realist evaluation, and c) a public and patient engagement event near the end of the study to gauge reaction to the emerging findings and consider next steps (detailed in the Appendix).

Ruth Lutz Tracy is a nurse of considerable experience, who qualified in 2008 and worked for five years in general surgery at a large hospital. Ruth then worked on a ward specialising in Liver, Pancreas and Gall bladder care, with senior responsibilities. Ruth then moved to a head and neck ward, where she was in charge of the Ward. Ruth now works in intensive care, looking after extremely unwell patients. Ruth has a particular interest in safe staffing and has worked with researchers on other research studies.

Francesca Lambert has experience of patient and public involvement in both a lay and professional role. Francesca is a parent of four, including twins who are learning disabled with associated health problems. Francesca has worked in the University as a PPI Facilitator in the NIHR Research Design Service, and then in the NHS for 15 months with services across the Trust from stroke rehab, mental health to podiatry. She worked closely with services to enhance PPI in research, service evaluations and clinical audit. Francesca has participated as a lay PPI member on a wide range of research studies, as well as working professionally with patient groups and researchers at 'design' stage as well as facilitating both PPI and participant focus groups.

Our PPI representatives bring unique insights to the research through a number of perspectives, i.e. staff, patient and patient groups. Francesca has already been involved post-funding in assisting with research information being produced in plain English and working with the Lead researcher to produce staff and patient information sheets and consent for ethical approval. Francesca and Ruth have links to patient groups and both will work on a dissemination plan with the research team and advisory group to ensure the results of the study are shared with the general public in a productive and easily accessible way.

3.5 Diversity and equality issues

No specific diversity issues were raised in relation to the conduct of this research. All research staff met university standards and had undertaken the compulsory training on equality and diversity.

3.6 Ethics

As this study involves a survey of organisations, analysis of routinely collected staffing data, and interviews/discussion groups with staff, NHS Ethical approval was not necessarily mandated but was nonetheless sought and obtained. The study has the approval of the University of Southampton (ERGO 24344), the NHS Research Ethics Service (16/EE/0381) and the NHS Health Research Authority (IRAS number 204589). Research and development approvals and agreements with each of the four case study Trusts were also obtained prior to data collection. Findings from the study have been anonymised, and the results presented in aggregate, taking care that the identity of individual staff or units is never apparent and cannot be deduced from unique combinations of information. Data are kept secure using standard approaches such as password protected and encrypted laptops and secure file transfer protocols.

Chapter 3 Summary

- The study aims to identify the costs and consequences of implementing safe staffing policies following the Francis Inquiry, and describe the factors that have shaped policy implementation.
- To meet the objectives, the research required both breadth and depth of enquiry, to establish the extent of policy implementation and how this has varied between Trusts nationally, whilst exploring in detail local responses to safe staffing policies.
- The approach adopted is a mixed methods study using:
  1) national scoping survey (postal and online, all acute NHS Trusts);
  2) analysis of national secondary datasets (on workforce and 'outcome' metrics); and
  3) case studies involving in-depth qualitative study of implementation (informed by realist evaluation) and quantitative economic assessment of impact.
- The study focuses on nurse staffing in NHS acute Trusts, examining adult in-patient settings in particular, as the setting to which NICE safe staffing guidance pertains.
- Patient and public involvement is embedded in design, management, and dissemination stages of the study.
- The study has ethical approval and R&D approvals from HRA and each of the case study sites.

4. National secondary data

This chapter examines national data on nursing workforce to offer a high-level overview of changes to the number and mix of nursing staff working in the NHS acute sector. Our aim was to examine how numbers have changed and identify patterns in workforce numbers over time. Aside from how policies have been implemented and the impact on staffing numbers in the acute setting, one of the areas for research exploration is whether there have been any apparent 'knock-on' effects from the implementation of guidance in the acute sector on staffing in other sectors. The findings on changes to the nursing workforce in acute hospitals is thus viewed alongside the broader NHS workforce context.

Three types of data are examined:

- NHS Information Centre non-medical workforce statistics (WTE by staff group).
- NHS Choices website – predicted staffing vs actual – how have the 'fill-rates' changed since first monitored (summer 2014).
- Staff satisfaction regarding staffing levels from the annual staff survey.

In addition to examining these data directly to identify trends, we also examined the data and findings from other reports and reviews that cover nurse staffing in recent years (details in Table A.1 in the appendix).

4.1 Data sources

The primary source for data on NHS staff data was official publication through the NHSIC. Where data could not be found on the NHSIC/ NHS Digital website we requested further information from NHSIC/ NHS Digital. We have also spoken to experts advisors to determine potential alternatives sources. These have been supplemented by searches for reported information on NHS workforce in general and nursing workforce in acute sector, in particular policy documents to determine the data identified and used in official reports and reviews by other bodies (including Department of Health, National Audit Office, and NHS Improvement).

NHS Digital publish routine statistical reports on the NHS workforce, covering a range of time frames (monthly and annual reports including varying durations of historical data), organisational breakdowns (national [England], regional and organisation type [Trust, PCT/CCG]) and staff categories (medical/non-medical, professionally qualified clinical/ support) under the general heading of 'NHS Workforce Statistics'. The statistical reports drew on data from NHS HR and Payroll systems.

While published data are available back to at least 2000 there are however inconsistencies in the definition of staff groups, which restrict the range of consistent time series available, as Table 4.1 details. For this reason data were examined for two separate periods, within which the inclusion criteria and data definitions are consistent: i) 2001-2014 ii) 2009–2017. These sources have been drawn on extensively in reports identified for this review (see Appendix). It is worth noting, with reference to accessibility of NHS workforce data, that access to the NHS Digital repository was hampered by a partial reorganisation of the site which had left numerous broken links.

Table 4.1 NHS Workforce Statistics publications by series and content

Title	Frequency	Content
NHS Workforce Statistics in England, Summary of staff in the NHS: Overview (71,72)	Annually (up to 2014)	Headcount and FTE medical and dental, non-medical and general practice staff. National and HEE breakdown. Ten-year overview (at 30 September each year)
NHS Workforce Statistics in England: Non-medical staff (formerly titled NHS Hospital and Community Health Services: Non-medical staff, England) (73)	Annually (up to 2014)	Headcount and FTE non-medical staff. Overall and by staff group, HEE, sex, age, ethnicity, organisation type and organisation. Ten-year overview (at 30 September each year)
Healthcare Workforce Statistics, Provisional Experimental (74)	Annually (from 2015)	Headcount and FTE HCHS medical and dental, non-medical and general practice staff. National level. Provides annual data back to 2009 (at 30 September each year). Also includes Independent Sector Healthcare workforce (FTE)
NHS Workforce Statistics – Provisional Statistics (formerly titled Monthly NHS Hospital and Community Health Service (HCHS) Workforce Statistics in England) (75)	Monthly (09/2009 – current)	Headcount and FTE medical and dental, non-medical staff in Trusts and CCGs (excludes primary care). National and HEE breakdown. Non-medical staff groups by clinical area and level.

4.2 Trends in the number of Registered Nurse posts

We start by examining the period from 2001 to 2014. The number of registered nurses employed by the NHS expressed as full time equivalents (FTE), increased from 2001-14 by about 30% from 231,135 to 300,984. This is equivalent to a 2.1% annual increase, with the majority of that increase occurring between 2001 and 2010, and the number roughly static at around 300,000 from 2010 to 2014 (see Table 4.2).

Table 4.2 NHS Staff numbers (FTE) 2001 – 2014

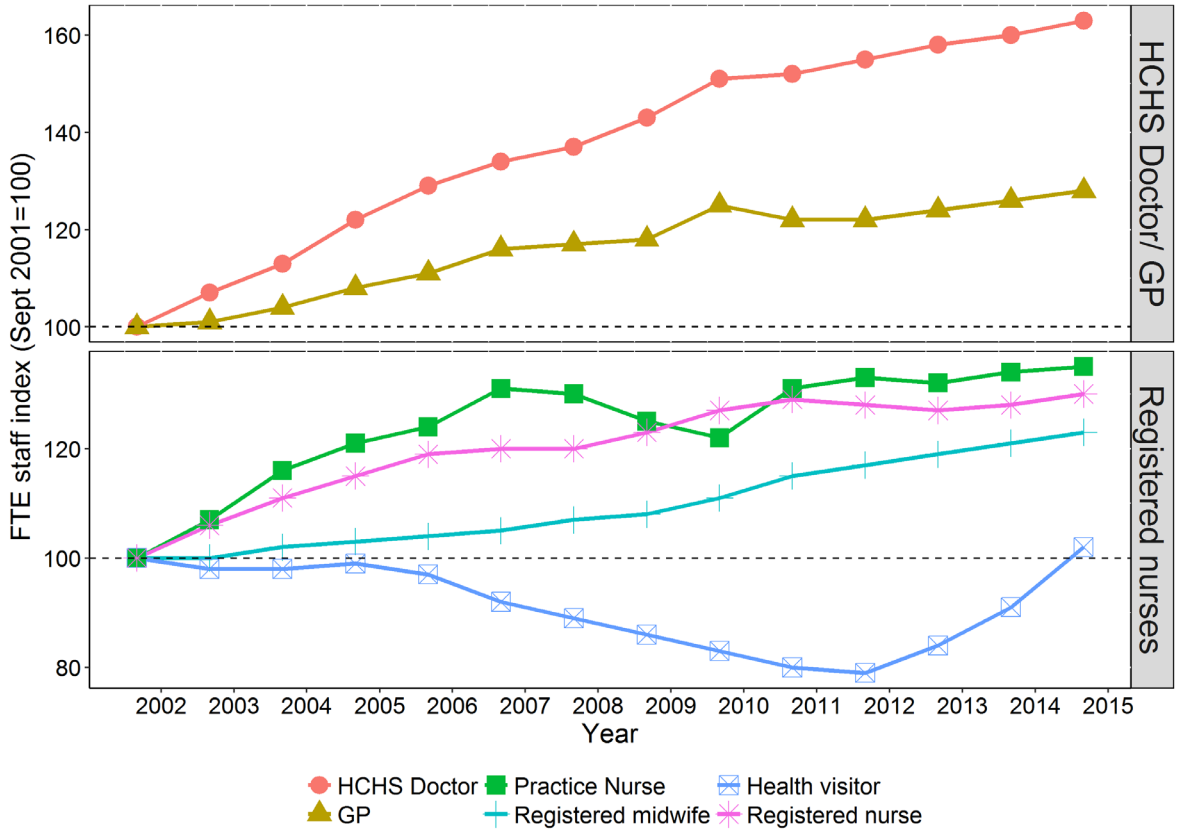
Year	Medical & dental	Registered nurses	Registered midwives	Health visitors	GPs	Practice nurses
09/2001	64,055	231,135	17,571	10,012	28,854	11,163
09/2002	68,260	245,142	17,566	9,774	29,155	11,998
09/2003	72,260	256,009	17,855	9,827	30,084	12,967
09/2004	78,462	266,074	18,137	9,951	31,021	13,563
09/2005	82,568	275,165	18,326	9,669	31,901	13,793
09/2006	85,975	278,255	18,380	9,241	33,384	14,616
09/2007	87,533	277,667	18,751	8,959	33,730	14,554
09/2008	91,586	284,943	18,896	8,644	34,043	13,962
09/2009	96,598	292,668	19,496	8,307	36,085	13,582
09/2010	97,636	297,017	20,126	8,017	35,243	14,644
09/2011	99,394	294,924	20,519	7,941	35,319	14,797
09/2012	100,899	293,466	20,935	8,386	35,871	14,695
09/2013	102,640	295,788	21,284	9,109	36,294	14,943
09/2014	104,501	300,984	21,670	10,167	36,920	15,062

Source: NHS Workforce Statistics in England, Summary of staff in the NHS: Overview 2001-2011; NHS Workforce Statistics in England, Summary of staff in the NHS: Overview 2004-2014) (72,73,76)

In the same period, medical and dental staff FTE increased by 60% from 64,055 to 104,501, equivalent to 3.8% annual increase over the whole period[1]. Practice nurses increased by 35% (11,162 to 15,062, equivalent to 2.3% annual growth) GPs whereas GPs increased by 28% (28,854 to 36,920, equivalent to 1.9% annual growth). Data in Table 4.2 are drawn from two publications (2001-2011 and 2004-2014) in the Overview series. While these cover only a limited period following publication of the Francis Report, and resulting safe staffing initiatives, they provide historical context and evidence of long term trends in clinical staffing levels in the NHS. Figure 4.1 shows trends over time using the data in Table 4.2, with staffing numbers indexed to their 2001 values.

1 Equivalent annual increase calculated as (n_c/n_b 1/r -1) where n_c is number in current year, n_b is number in base year and t is the number of years elapsed between b and c.

Figure 4.1 Relative change in NHS FTE numbers by staff group: 2001-2014



Source: NHS Staff 2001-2011 Overview & NHS Workforce Statistics; September 2004-2014 Overview (72,73,76)

Note that the data presented in Figure 4.1 for each staff group have been indexed to a value of 100 for September 2001 (the first year in Table 4.2). This allows easy identification of trends in the rate of increase in different staff groups and allows all staff groups to be represented in a single figure. However the figure does not indicate the absolute number of staff in each group – for example the 20% decline in health visitors represents approximately 2,000 FTE fewer nationally while the same proportionate reduction in registered nurses would translate to over 46,000 FTE nationally.

Hospital and community health services (HCHS) doctors, GPs and qualified midwives show a largely consistent upward trend. In contrast registered nurses and practice nurses show consistent increases up to 2005/06, but then fluctuations up till around 2011 when numbers appear to be stable. One of the most noticeable trends in Figure 4.1 is the dip and recovery in full time equivalent health visitor staffing, which reduced over the period 09/2001 to 09/2011 by around 20%. Since then numbers have recovered to their 2001 levels as a result of DH policy.

There are substantial differences in trends and rates of increase or decrease between broad areas of the nursing workforce. Table 4.3 reports FTE qualified nurses by work area, and also shows the percentage change in staffing over the whole period from 2004 to 2014, and for the shorter period from 2009 to 2014 (post-credit crunch and international economic recession). Overall registered nurse FTE increased by around 9% over the whole period (equivalent to an annual increase of 0.89%), with a smaller rate of increase (2.2% equivalent to an annual increase of 0.21%) from 2009 to 2014.

Four work areas (comprising around 60% of the registered nursing workforce) showed an increase in FTE over the whole period. These were acute, elderly and general nursing, paediatric nursing, school nursing and education staff. Increases in the acute, elderly and general nursing workforce were above the overall average at 11.3% and 5.4% for the whole period and post-2009, respectively (equivalent annual increases of 1.07 % and 0.53% respectively). In contrast, three groups (covering about 12% of the workforce) experienced decreases in FTE over the period. These were other psychiatry, community learning disability and other learning disability. Overall these data appear to indicate that, while overall staffing numbers increased over the period from 2001 to 2014, there was a slow-down in growth around 2009, which appears to have particularly affected community-based nursing with many of these areas showing substantial reductions in the total number of staff.

Table 4.3 FTE Registered Nurses (RNs) by work area (2004 – 2014)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	% change 2004-14	% change 2009-14
All areas of work	286,841	294,412	295,767	293,962	299,917	306,887	309,139	306,346	305,060	307,692	313,514	9.3%	2.2%
Adult, Elderly & General	157,285	161,289	161,742	160,161	162,936	166,064	168,042	167,547	167,007	170,224	174,994	11.3%	5.4%
Paediatric Nursing	14,691	14,860	14,796	14,902	15,362	15,588	15,807	15,629	15,607	15,819	16,108	9.6%	3.3%
Maternity Services	23,414	23,871	24,206	24,202	24,762	25,643	26,654	24,916	24,510	24,627	24,655	5.3%	-3.9%
Community Psychiatry	13,400	14,325	14,782	14,897	15,022	15,528	15,986	15,575	15,767	15,694	15,389	14.8%	-0.9%
Other Psychiatry	26,135	26,132	26,239	25,975	26,116	26,183	25,334	24,477	23,558	22,896	22,398	-14.3%	-14.5%
Comm. Learning Disabilities	3,258	3,167	3,081	2,857	2,611	2,647	2,570	2,367	2,268	2,086	2,003	-38.5%	-24.4%
Other Learning Disabilities	3,951	3,746	3,496	3,433	3,347	2,996	2,684	2,421	2,186	2,086	1,921	-51.4%	-35.9%
Community Services	41,978	44,019	44,323	44,308	46,057	48,106	47,779	46,399	46,035	45,716	46,850	11.6%	-2.6%
Education Staff	1,115	1,113	1,068	1,003	1,100	1,145	1,279	1,241	1,290	1,227	1,326	19.0%	15.8%
School Nursing	1,610	1,890	2,035	2,225	2,606	2,986	3,003	2,997	2,936	2,957	3,017	87.4%	1.0%
Neonatal Nursing (including SCBUs)	-	-	-	-	-	..	-	2,777	3,895	4,359	4,854	-	74.8%‡

Notes: ‡ percent change from start to end of time series

Source: *NHS Workforce statistics England: Summary of staff in the NHS Overview 2004-2014* (72)

We move on to look at more recently published annual data which overlaps the 2001-2014 time series but has a change in definition of staff included staff[2]. These data span 2009–2017.

The last data set included relates to September 2017 (published on NHS Digital on 28/2/2018). These data show a broadly similar picture with declining numbers of qualified nurses between 2010 and 2012 (reduction of 2.6%) followed by growth (4.6%) which continues from 2014 into 2015, 2016 and 2017 (see Table 4.4).

2 NHS Hospital and Community Health Service in England workforce statistics – proposed developments (http://content.digital.nhs.uk/hchs). Current publications contain reconfigured data back to September 2009 consistent with current classification

Four nursing work areas showed an increase over the whole period, although much of this growth occurred between 2013 and 2016. Three of these fields ('Paediatric', 'Education', and 'Acute, Elderly & General') are the same as those identified as showing overall growth using the older time series, from 2001 to 2014. A fourth area that shows growth in the more recent datasets is 'Community psychiatry'. Five areas experienced decreases between 2009 and 2017. These were maternity services, other psychiatry, community learning disability, other learning disability (all of which showed decreases in the older time series) and school nursing. For other psychiatry and other learning disability, the rate of decrease seems broadly consistent over the whole time series, whereas for maternity services and community learning disability the decrease appears to be markedly lower in the period 2013-2016 compared with the overall decrease.

Table 4.4 Registered nurses (FTE) by work area (2009 – 2017)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	% change 2009-17	% change 2013-17
All areas of work	297,430	299,370	296,925	291,620	295,163	299,819	302,408	305,326	305,059	2.6%	3.4%
Adult, Elderly & General	160,211	161,878	161,408	160,188	163,881	168,227	170,882	173,829	174,343	8.8%	6.4%
Paediatric Nursing	14,874	15,100	14,900	14,898	15,078	15,308	15,654	16,264	16,890	13.6%	12.0%
Maternity Services†	25,407	26,316	24,662	24,144	24,203	24,152	23,880	23,763	23,873	-6.0%	-1.4%
Community Psychiatry	15,261	15,666	15,266	15,386	15,292	14,966	15,338	16,218	16,671	9.2%	9.0%
Other Psychiatry	25,341	24,581	23,758	22,749	22,105	21,615	20,333	19,269	18,718	-26.1%	-15.3%
Community Learning Disabilities	2,604	2,508	2,305	2,176	1,992	1,907	1,907	1,966	1,918	-26.3%	-3.7%
Other Learning Disabilities	2,948	2,628	2,362	2,136	2,043	1,870	1,670	1,476	1,386	53.0%	-32.2%
Community Services	46,536	46,304	45,155	42,049	42,237	42,835	43,247	42,797	41,501	-10.8%	-1.7%
Education Staff	1,110	1,237	1,211	1,245	1,186	1,289	1,398	1,571	1,613	45.4%	36.1%
School Nursing	2,915	2,933	2,928	2,730	2,772	2,763	2,715	2,570	2,400	-17.7%	-13.4%
Neonatal Nursing (including SCBUs)	NA	NA	2,674	3,734	4,188	4,643	5,168	5,350	5,546	107.4%‡	32.4%

† qualified midwives represent 74% of qualified staff in maternity services in 2009, increasing consistently during the time series to 88% in 2016

‡ percent change from start to end of time series

Source: NHS Workforce Statistics – Provisional Statistics (75)

4.3 Nursing staff (RNs and HCAs) in acute sector

Figure 4.2 shows trends in the number of both registered nurses and support staff, focusing specifically on adult, elderly and general medicine. The total FTE of staff in both groups has increased consistently from the middle of 2012 onward, with numbers being roughly static prior to this. We can also see that the proportionate increase in support staff has been greater than for registered nursing staff, with registered nursing staff FTE increasing by approximately 10% over the whole time series while support staff FTE increased by 30% (albeit from a lower baseline number). These figures correspond with an equivalent annual increase in registered nursing staff of 1.1% and 3.3% for support staff. This has produced a corresponding shift in skill mix; between 2009 and 2017 the proportion of the nursing workforce in the acute sector that are registered nurses has reduced from a total of 69% of filled posts to 66%.

Figure 4.2 Acute sector: Relative change in RNs and support staff (Sept 2009 - Dec 2017)

Source: NHS Workforce Statistics – Provisional Statistics (75)

These data suggest that NHS nurse staffing in acute care has increased in absolute numbers of FTE from the end of 2012. It is not clear whether this may be a result of the Francis Inquiry (which did not publish its report until 6th February 2013), whether this may be a return to the growth observed prior to 2009 and associated austerity measures or is due to other factors unrelated to either or both of these issues.

4.4 Nurse staffing and NHS activity levels

The data presented thus far describe how total staff numbers (FTEs) have changed, but does so without considering changes in activity rates in the NHS that may have been occurring during this period. We have endeavoured to investigate changes in nurse staffing relative to activity in two ways: by examining crude staff to bed ratios, and then examining admissions per member of staff.

An estimate nurse staffing based on the full time equivalent posts (at the time of the NHS annual census, 30th Sept each year) relative to the number of beds has been produced. The national means for each year are presented in Table 4.5 Further detail of the variation in nurse staffing per bed at quarterly intervals between Jun 2010 and Dec 2017 is presented in Appendix 10. Total nurse staffing per bed inclusive of support staff has increased by 13.1% between 2013-2017, whilst RN per bed has increased by 7.4%. However these figures take no account of the number of patients and bed occupancy.

Table 4.5 Nursing staff (FTE) per bed in general acute

Year (at census point)	Registered Nurses per bed		Nursing staff (RNs + HCAs) per bed	
	Mean	St. Dev	Mean	St Dev
2010	1.52	0.43	2.16	0.50
2011	1.56	0.41	2.22	0.48
2012	1.58	0.44	2.27	0.51
2013	1.63	0.47	2.36	0.55
2014	1.66	0.46	2.43	0.57
2015	1.69	0.48	2.51	0.58
2016	1.72	0.48	2.58	0.58
2017	1.75	0.55	2.67	0.71
% change 2013-17	7.4%		13.1%	

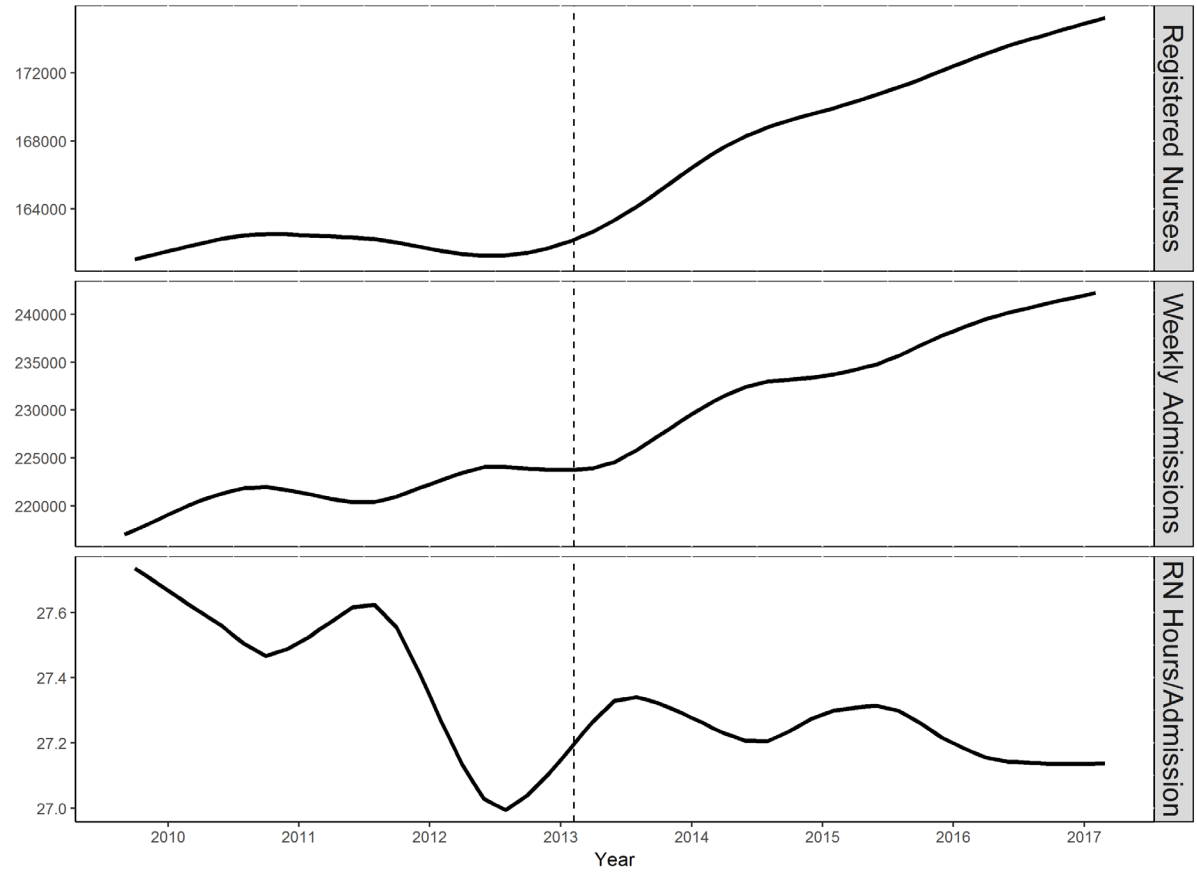
Source: NHS Workforce Statistics – Provisional Statistics & Bed Availability and Occupancy data (KH03) (85)

Using the September 2017 dataset, this measure – nurse staffing per bed – was examined to see if there were any differences between Trusts according to their characteristics. Comparing the means of 'nurse staffing FTE per bed' by geographical region (based on commissioning regions) no statistically significant differences were found. A significant difference was however found between Trusts that had a teaching status versus those that did not, with both RN staffing and all nursing staffing greater per bed in the teaching hospitals (2.14 vs 1.63 RN FTE per bed, and 3.01 vs 2.54 all nursing staff FTE per bed).

An alternative measure which takes account of throughput, is based on the number of inpatient admissions per month, derived from published Hospital Episode Statistics (HES) reports, which is used to generate a measure of activity per fulltime equivalent of staff. Figure 4.3 shows the trend in registered nurse FTE, the trend in estimated weekly admissions and a calculated value of registered nurse hours per admission (FTE*37.5/weekly admissions).

The resultant analysis (presented in Figure 4.3) suggests that the total RN hours per admitted patient fell from September 2009 to 2012 (though with a significant upturn from late 2010 to mid-2011) dropping from 27.7 in September 2009 to just under 27 in July 2012. Following that the number of hours per admission increased sharply to around 27.3 by mid-2013 and has remained fluctuating around that level for the rest of the observation period. However, it has not returned to the level observed at the beginning of this time period.

Figure 4.3 Admissions, RN FTE, & estimated RN hours per admission (Sept 2009 - Feb 2017)[3]



Source: NHS Workforce Statistics – Provisional Statistics and Provisional Monthly Hospital Episode Statistics for Admitted Patient Care, Outpatient and Accident and Emergency data (77)

The number of in-patient admissions is a relatively simplistic measure of workload, which could be enhanced if factors such as length of stay were taken into account. However mean length of stay is not published on a monthly basis so cannot be directly incorporated into this analysis. Nonetheless summaries of annual mean length of stay at the national level indicate a year on year reduction, from 5.6 days in 2009/10 to 4.9 days in 205/16 (from Hospital Admitted Patient Care Activity Annual reports).

The workforce report published by NHS Improvement included a similar analysis to that presented above, using patient bed days as the denominator.[4] Their analysis of RNs per patient bed day identified three distinct periods of change in nurse staffing level. In the first two periods (up to December 2011 and from December 2011 to January 2013) the number of nurse staff was static, while the nurse-to-patient bed day ratio first increased (Period 1) and then decreased (Period 2) due to changes in length of stay and admissions. In the third period (January 2013 to the end of the time series in April 2015) the nurse-to-patient bed day ratio increased due to a consistent increase in the number of nurses, whilst patient bed days was static; increases in admissions were being offset by reductions in length of stay.

3 The qualified nurse hours per admission were calculated from the original data, rather than the smoothed values shown in the figure.

4 nurse-to-patient bed day ratio = $\frac{\text{FTE Nurses}}{\text{Admission x average length of stay}}$

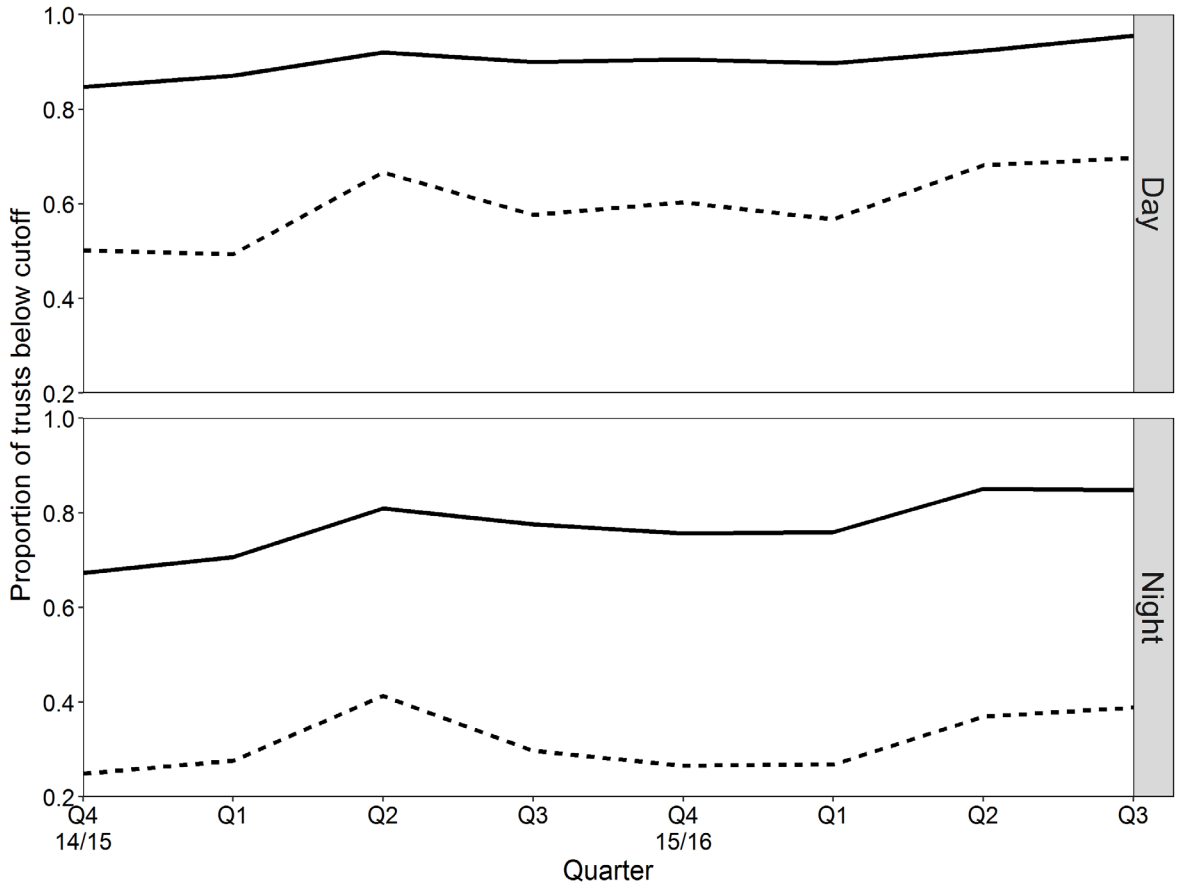
4.5 Planned versus actual staffing

Nurse staffing 'fill rates' (reporting of which was mandated since June 2014 (10) provide one potential source for addressing questions over the ability of trusts to fill planned hours. The NHS Choices Website says: "*This measure shows the overall average percentage of planned day and night hours for registered and unregistered care staff and midwifes in hospitals which are filled*". However, whilst all Trust supply these data and they are published for each Trust on the NHS choices website, they are not publicly available as a collated data set in the National Data repository. To explore the extent to which planned staffing levels are achieved, we have made use of a partial dataset that has been collected by another organisation. The Health Services Journal has collected quarterly 'fill-rate' data at the hospital trust level since its introduction and has published an analysis of these data. The data reported are a summary of the total planned hours of nursing (on each ward in the trust) and the number of hours actually provided, across a calendar month. The data are broken down for 'day' and 'night' (although the hours covered by these headings are not specified) and by registered nurses and support staff. As the data are reported across the calendar month, they do not provide any information on the number of shifts that were short-staffed nor what scale of shortfall might be experienced. Such data are collected via 'red flags' (which include two indicators: a shortfall of more than 8 hours or 25% of registered nurse time below that required for the shift and there being fewer than two registered nurses present on the ward during any shift). However, these data have only been collected for a relatively short time period and are typically reported as composite measures – i.e. all 'red flags' (of which NICE defined six) rather than by specific causes.

Their Health Services Journal analysis indicated that the majority of acute Trusts have failed to match their actual staffing to planned numbers and that the proportion had increased over time (78) [see Figure 4.4 and Figure 4.5 for registered nurses and support staff, respectively – redrawn from the Health Service Journal figure to show proportions, rather than raw numbers].

The Health Service Journal reported that, in Quarter 3 of 2016-17, 96% (214 of 224 trusts for which they had data) failed to meet planned staffing levels for registered nurses during the day and 85% (190) did so at night. It is not clear from the data presented how frequently within the quarters of the financial year the trusts were below their target staffing numbers, nor how far from any of the trusts were from their target (planned) value. Using a lower cut-off value (for example, trusts filling up to 95% of planned hours) substantially reduces the proportion identified as falling below target levels. The proportion of Trusts below planned staffing increases over the duration of the observation period for both cut-off values.

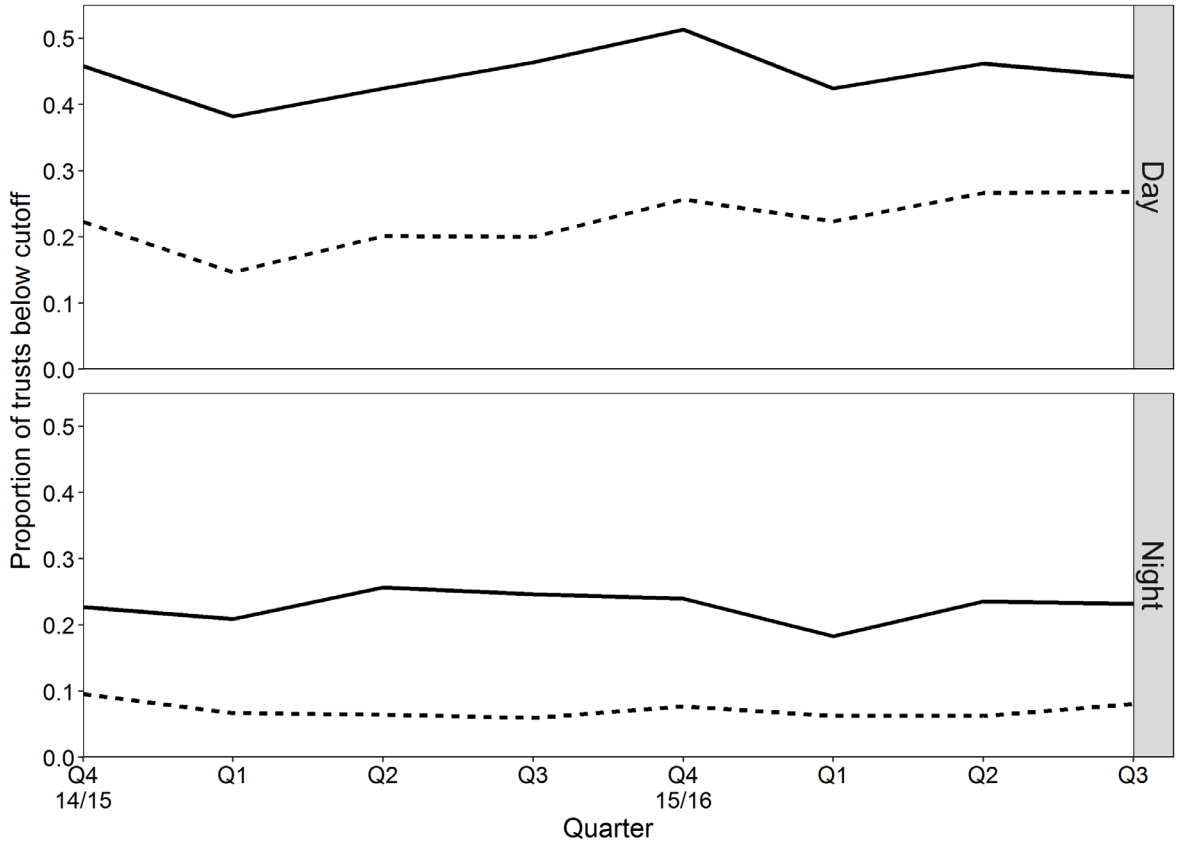
Figure 4.4 Proportion of trusts with actual registered nurse hours lower than planned



Note: Observations in the figure are for the first month in each quarter (Quarter 4, 2014/5 to Quarter 3, 2016/17) [Source: spreadsheet provided by Shaun Lintern, personal communication]

The equivalent data for support staff (HCAs and other unregistered nursing staff) over the same time period shows a different picture (Figure 4.5). Difficulty in staffing to planned levels is primarily related to registered nurses rather than unregistered support staff. The analysis presented by the Health Service Journal indicated that trusts that were below planned staffing levels for registered nurses were at, or above planned, numbers for unregistered staff, suggesting that in these situations, unregistered support staff were used to substitute for registered nurses.

Figure 4.5 Proportion of trusts with actual support staff hours lower than planned



Note: Observations in the figure are for the first month in each quarter (Quarter 4, 2014/5 to Quarter 3, 2016/17) [source: spreadsheet provided by Shaun Lintern, personal communication]

These data chime with the analysis of trends in skill-mix in the nursing workforce as a whole; the growth of unregistered nursing staff since 2012 having been proportionally greater than the growth in registered nurse numbers.

4.6 Staff satisfaction and perception of staffing levels

The 'NHS Staff Survey' (79) is conducted annually gathering staff views on their experience at work in key areas. We have identified four questions that have been asked, consistently within the questionnaire since the 2011 survey which may be of most relevance to staffing levels. These are[5]:

- There are enough staff at this organisation for me to do my job properly? (Q4g)
- On average, how many additional PAID [UNPAID] hours do you work per week for this organisation, over and above your contracted hours? (Q10b [c])

The first question, while it does not address the question of safe staffing directly, is the most direct measure of staff perceptions of staffing adequacy. Figure 4.6 shows responses to this question reported for all staff and for Registered Nurses and Midwives (RN & RM) and Nursing support staff/ Health Care Assistants.

Among all staff groups 30% agree (4-6% strongly agree, 25-26% agree) with the statement, with none of the categories of agreement or disagreement appearing to show a strong secular trend. In contrast, all nursing staff (registered and support//HCA) showed slight but consistent trend of increasing agreement (23% to 26% and 27% to 30% respectively) with the statement.

Figure 4.6 Responses to staffing adequacy question in NHS Staff Surveys 2011 to 2017

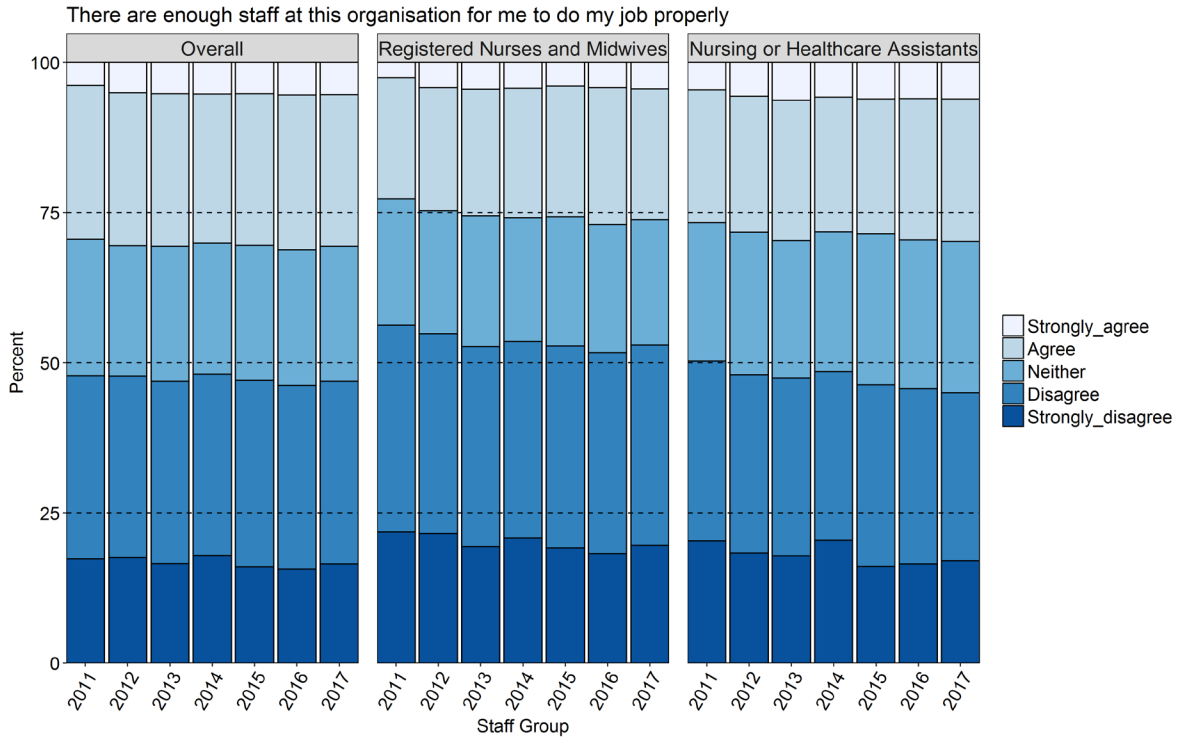
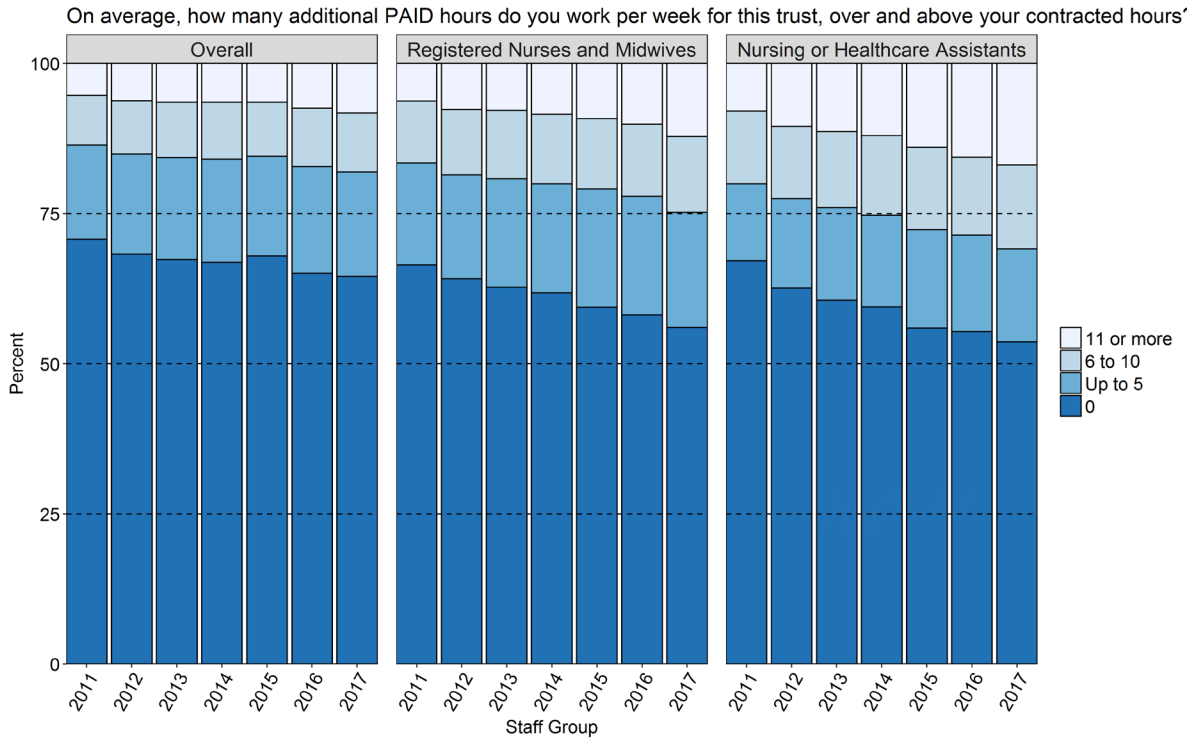


Figure 4.7 and Figure 4.8 show the proportions across all staff groups reporting that they have worked beyond their contracted hours (Figure 4.7 shows the proportions reporting they have worked additional paid hours while Figure 4.8 reports those reporting unpaid additional work hours) and separate panels for Registered Nurses and Midwives, and Nursing support staff/HCAs. In both cases RNs/ RMs report higher proportions working additional hours than support staff (44% and 46% vs 36% for RN and RM and nursing support staff respectively, compared with all staff groups combined in 2017).

Much of the increase in staff reporting paid additional hours has occurred in the category of staff providing eleven or more hours than contracted. Overall these data indicate that the proportion of nursing staff in acute trusts reporting working beyond their working hours has increased from 34% to 44% and 33% to 46%, respectively, compared with 29% to 36% for all staff groups combined.

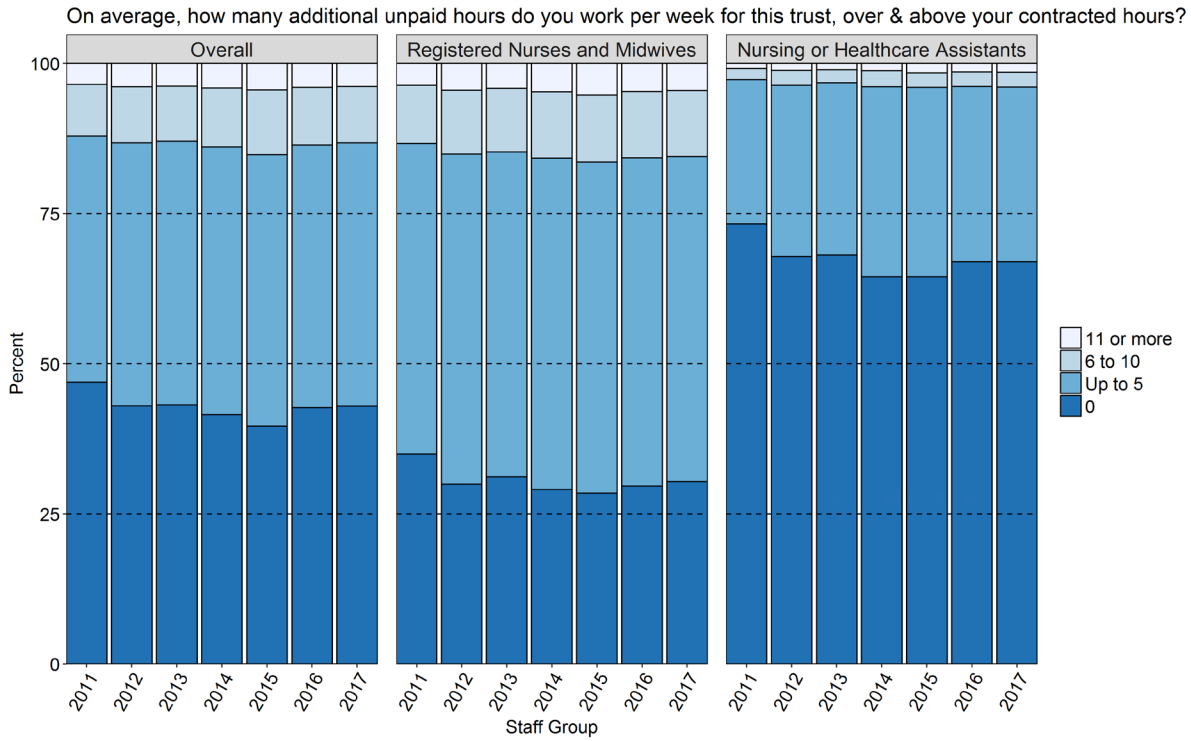
5 The figures in parentheses indicates the question number in the current (2017) staff survey questionnaire.

Figure 4.7 Staff reporting amount of paid overtime in NHS Staff Surveys 2011 to 2017



The pattern of responses differs for unpaid work. Over the period around 70% of nursing support staff report working no additional unpaid hours which contrasts with approximately 30% of RN/RM reporting working no additional unpaid hours. The most commonly reported category of additional unpaid hours across all of the staff groups is the 'Up to 5 hours' category. While the proportion of staff reporting working additional unpaid hours was higher in the 2017 survey compared with 2011 (53% to 57% across all staff groups) there does not appear to be a clear and consistent trend of increase in these data.

Figure 4.8 Amount of unpaid overtime by staff group (NHS Staff Surveys) 2011-2017

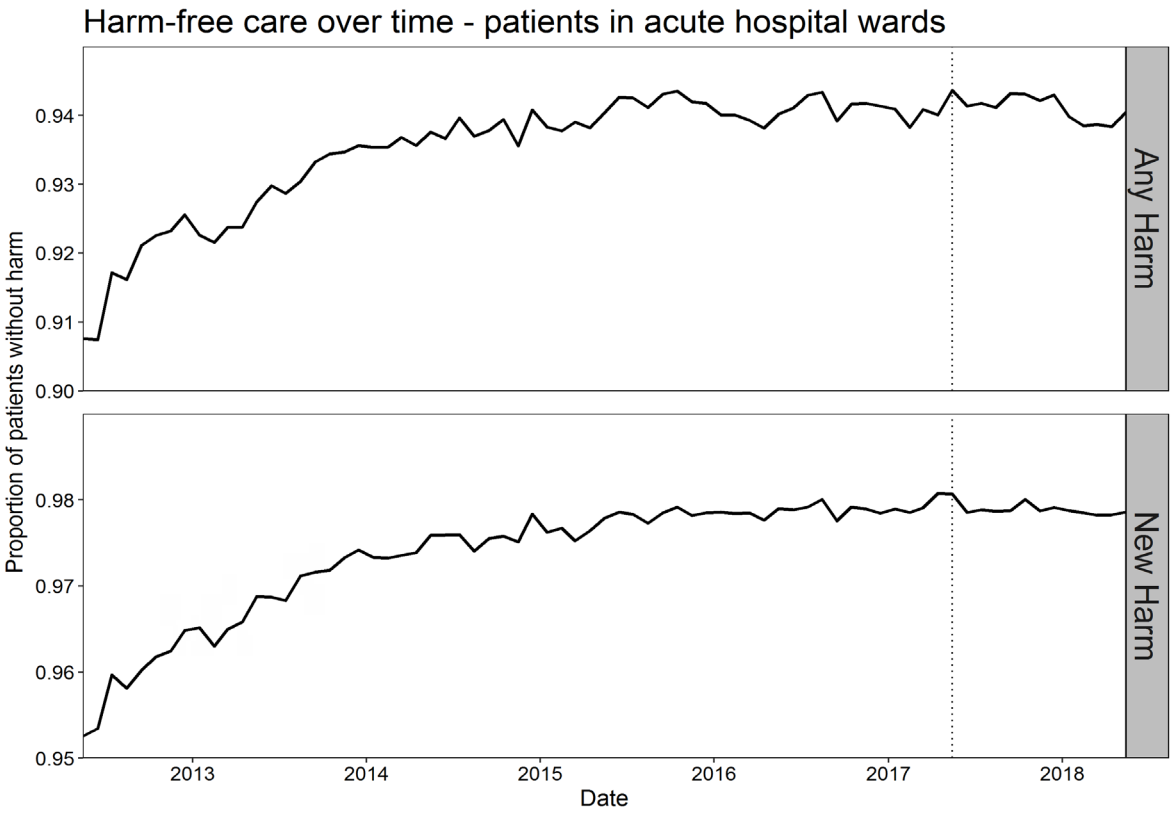


4.7 Indicators of nurse sensitive outcomes

Figure 4.9 show trends in harm-free care for patients on acute hospital wards, derived from the NHS Safety Thermometer (80). The four categories of harm included in the safety thermometer are: pressure ulcers; patient falls; urinary tract infections (UTI) in patients with catheters; assessment, prophylaxis or treatment for venous thromboembolism (VTE). The composite measure 'any harm' includes all pressure ulcers, falls with harm, UTIs, pulmonary embolism (PE), new deep vein thrombosis (DVT) and any other new VTE, while 'new harm' only includes new harms occurring during the patient's stay (in the case of pressure ulcers, those developing three or more days after the patient was admitted).[6] The vertical line in Figure 4.9 is drawn at the end of May 2017 and indicates the last finalised observation – all values to the right of the dotted line may be updated at any period up to 13 months from initial submission.

6 Data are collected on a single day each month and include all patients in wards at individual trusts. National summary data are reported for each month and a range of routine data visualisation tools exist to examine the data at various levels of detail (https://www.safetythermometer.nhs.uk/) Historical data (pre-2017), available at patient-level, summarised and presented in this report were downloaded from NHS Digital, while current (2017) data were downloaded directly from the 'Classic' area of the NHS Safety Thermometer website. The current values (from June 2017 onward) maybe subject to change, since data for the NHS Safety Thermometer are collected on a 13-month timeframe, with revision allowed any time within the 13-month period from initial data collection.

Figure 4.9 Trends in harm-free care (May 2012 to current) in acute hospital wards



The proportion of patients reported with harms (any harms or just those experienced during their hospital stay) has reduced over the period (from 9.2% to 6.0% and from 4.7% to 2.1% for any harms and new harms respectively). Over the whole period the absolute difference in percentage between any harm and new harms was approximately 4%, indicating that the trend toward reduced harms is predominantly the result of fewer harms reported during patients' hospital stay. For both groups of harms, the reduction in incidence appears to have occurred between mid-May 2012 (inception of the time series) and mid 2015 after which the proportion of patients without harms has stabilised (at approximately 94% for any harm and approximately 98% for new harms).

Chapter 4 Summary

Our analysis of national secondary data has resulted in a complicated picture comprising multiple, not easily aggregated, elements. The key points are summarised below. Whilst there have been a number of changes in the nursing workforce these vary between Trusts and service areas and have occurred alongside increases in numbers of patients admitted to hospital. It is thus difficult to discern from these data the net effect of changes, and the extent to which the changes that are observed, could be ascribed to policies on safe staffing.

- There has been an increase in total nursing numbers in the acute sector since 2013.
- In general over an extended period of time growth in the nursing workforce has been at a slower pace than the medical workforce, with the exception of general practice.
- Routine data analysed in this report and previously published reports indicate that nurse numbers have increased since the end of 2012/ early 2013:
- increases occurred at the end of a period of zero growth (from 2009); and
- it is not possible to determine whether the growth since 2012/13 is a return to trend or a new trend toward growth post-Francis.
- The growth in unqualified nurses since 2012/13 exceeds the growth in qualified nurses.
- Growth in the nursing workforce has not been uniformly distributed across all areas of work; adult, elderly and general nursing have generally shown consistent growth while other fields (particularly community services, learning disability and maternity) have experienced reductions.
- RN per bed increased by 7.4% from 2013 to 2017. Staffing levels measured by admissions per RN fell steadily from Sept 2009 to July 2012 (27.7 to 27.0). After an increase between 2012 and 2013, levels have since plateaued at around 27.1-27.2.
- While there has been some growth relative to demand (admissions) since mid-2012, this growth is less than the growth in absolute numbers and it is unclear whether changes can be attributed to post Francis policies.
- Growth in registered nurse staff employed in acute Trusts may have been constrained by an inability to fill posts.
- Trusts appear to have an increasing difficulty in filling planned RN hours despite nursing staff working an increasing number of additional hours (above those contracted).
- There is no clear trend of nurses working increased amounts of unpaid overtime although there has been an overall increase since 2011.
- Overall an increasing proportion of nursing and midwifery staff say *"there are enough staff at this organisation to do my job properly"*.
- There has been a reduction in incidence of patient harms (measured through the Safety Thermometer) between May 2012 and mid 2015 after which the proportion of patients without harms has plateaued at roughly 94% for 'any harm' and 98% for 'new harms'.

5. Survey of Directors of Nursing

Recognising the limitations of using routinely collected national workforce data (described in Chapter 4), a national survey of Directors of Nursing at every NHS acute Trust in England was undertaken in order to get an overview of the implementation of safe staffing polices nationally and explore variation across the country. By targeting the Director of Nursing we not only acquired a snapshot of the systems and processes in use to plan, review and report nurse staffing levels, but were able to probe their views of how things had changed since the Francis Inquiry, and the impact of policies and guidance on achieving safe staffing in their organisations.

Directors of Nursing at every acute NHS Trust in England were surveyed between February and April 2017 to explore how implementation of safe staffing policies had varied nationally. Multiple modes of participation were offered: a secure online survey, a postal survey with free-post envelope, or telephone interviews. Of the 148 Directors of Nursing contacted, 91 responded, representing a response rate of 61%. As far as possible the survey focused specifically on the safe staffing and workforce issues that Directors of Nursing were best placed (and uniquely able) to address. Factual data such as bed number and staffing numbers were derived from administrative datasets to reduce unnecessary burden on respondents.

5.1 Establishment setting

Most Trusts (all 91 responded) reported that they reviewed their nursing establishments – that is the planned total number of nursing posts per ward/department – twice a year (71%) or more frequently than that (15%), although 13% reported they reviewed establishments annually.

Trusts may use a number of different methods in tandem with one another to set their nursing establishments. Directors of Nursing were thus asked to indicate which approaches were used to determine nurse staffing establishment on general acute wards and were presented with multiple options and asked to indicate all those that applied. On average three approaches were selected, demonstrating use of 'triangulation' in most cases (Table 5.1).

Table 5.1 Approaches used by Trusts to determine nursing establishment and skill-mix – percent reporting each

	Establishment	**Skill-mix**
Primarily historical	7%	9%
Safe Care (in Allocate)	37%	32%
Safer Nursing Care Tool (SNCT) / Shelford	80%	67%
AUKUH	25%	22%
Benchmarks such as Hurst/Skills for Health 'Nurse per Occupied Bed'	41%	40%
Formally assessed using professional judgement	86%	79%
Other evidence-based system/tool	23%	23%
RCN Guidelines (on skill-mix specifically: 65% RN)	N/A	55%
Total cases (N=)	*91*	*91*

Professional judgment was used to set nurse staffing establishments in 86% of cases. The vast majority (80%) indicated they used the 'SNCT' (81) (also referred to as the 'Shelford Tool' in reference to the group of hospitals that were involved in its development) to determine establishments, with over a third specifying that they use the electronic version offered by Allocate, known as 'Safe Care' (82). A quarter were using the approach that the SNCT was based on the AUKUH (Association of UK University Hospitals) Acuity & Dependency Tool (83)). Despite increasing emphasis on the use of formal establishment setting methodologies, six Trusts reported that nursing establishments were 'primarily historical'.

The 'skill-mix' refers to the proportion of all nursing staff (on a shift or the planned establishment of posts) that are registered nurses. The remainder of the nursing team comprised nursing support staff such as health care assistants (HCAs), health care support workers (HCSWs), nursing auxiliaries, assistant practitioners and trainee nursing associates. The approaches used to set the skill-mix for acute wards generally mirrored the approach used for determining the total number of posts. Which whilst it may seem an expected finding, it should be noted that the SNCT does not provide guidance on the skill-mix. More than a half (55%) refer to using the RCN guidance to set the skill-mix (which specifies a mix of 65% RNs relative to 35% support staff).

Directors of Nursing (N=88) were almost unanimous in reporting that the way in which ward nurse staffing levels are planned had changed following the Francis Inquiry – 66% saying it had changed considerably, 33% saying it had changed to some extent. Of those currently using the SNCT/ Shelford Tool/ Safe Care tool, the majority (71%) had introduced it within the past five years, with 29% reporting that they first introduced it in 2012 or before. Most (75% of 88) Trusts had relied on professional judgment as their main approach to planning nurse staffing prior to this.

Planning nurse staffing establishments (that is determining how many nursing posts are needed to staff a service) involves determining the number of staff needed to meet the anticipated patient based workload, using patient dependency-acuity measures such as the SNCT, and then applying an 'uplift' to take into account the anticipated additional time needed for annual leave and absences. The mean average 'uplift' applied was 21.8% (SD 1.53). Whilst nine out of ten Trusts used an uplift figure between 20% and 24%, the range extended from 16%-25% as Figure 5.1 shows. Some respondents indicated that this is made up of two elements – the 'standard' uplift percentage, plus an additional percentage to take account of the vacancy rates. In all bar four cases (96% of 90 respondents) the uplift included time for staff continuous professional development (CPD). 60 of the 91 respondents gave details of the number of study days factored in per member of staff: the average was 4.4 days a year but ranged from none through to 14 days per member of staff per year, as Fig. 5.2 shows.

In 85% of Trusts (77 of 91), Directors of Nursing reported that ward sisters/charge nurses/ward managers have a 'supervisory' status to some degree, in that they are not 'counted in the numbers' for care provision, although the proportion of the ward managers' time that is seen as 'supervisory' varies between Trusts. In 37% of Trusts ward managers are 100% supervisory, but the average across all is 66% (N=89).

Figure 5.1 'Uplift' or 'Headroom' applied to calculate establishment

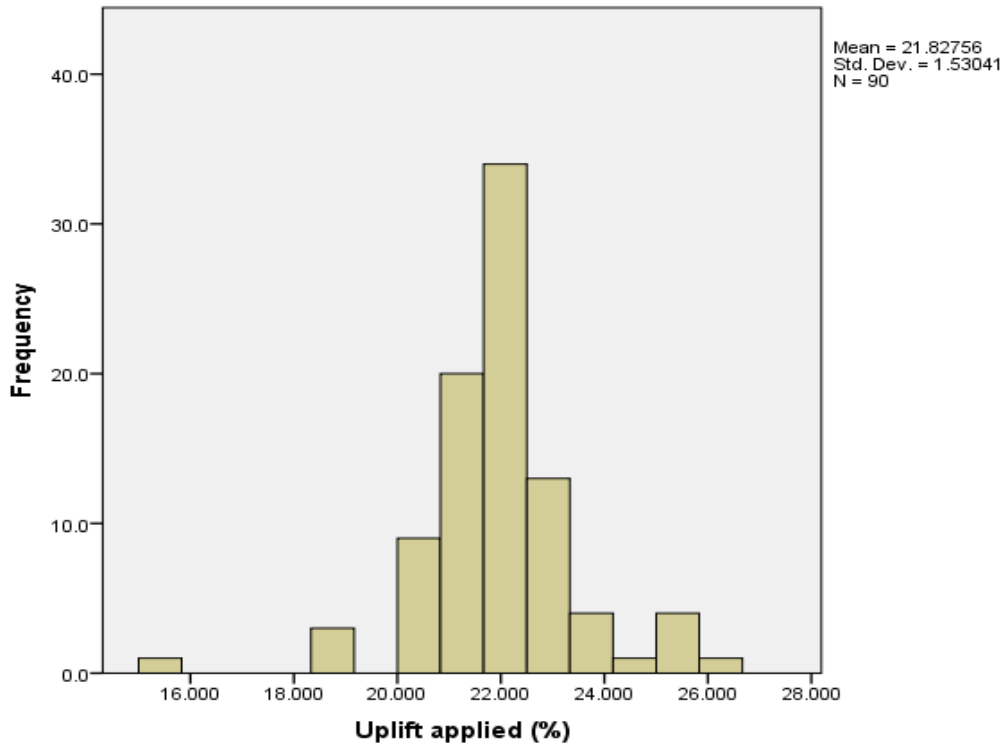
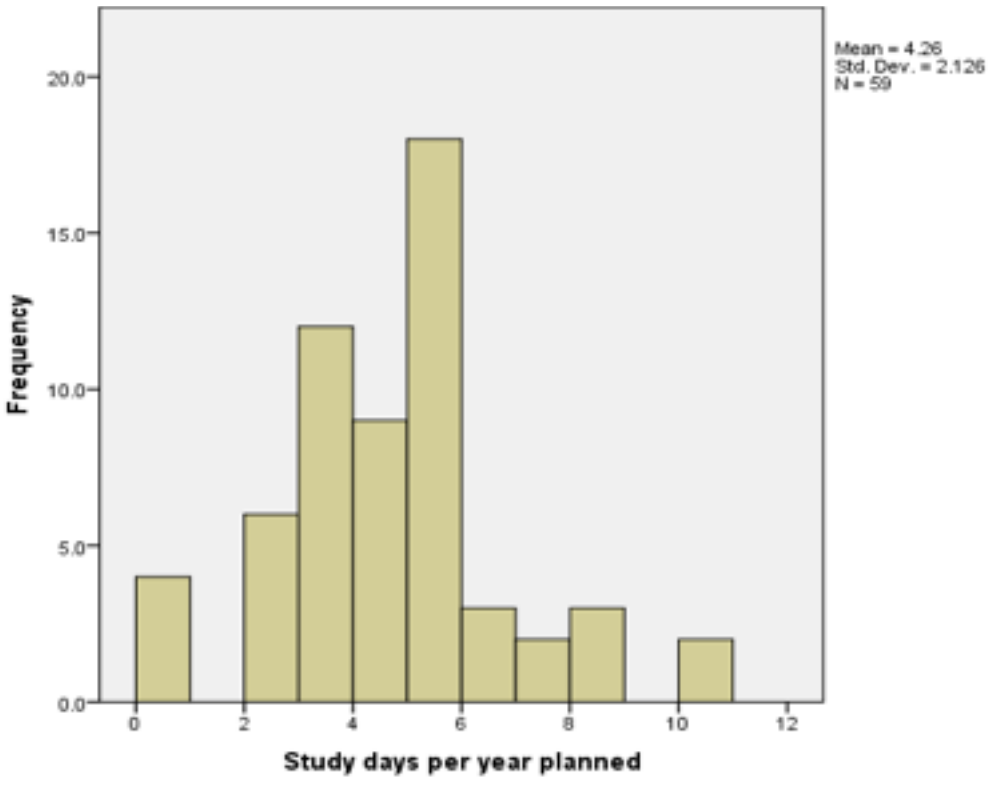


Figure 5.2 Average number of study days per year planned/factored in per member of staff



5.2 Staffing per shift

Electronic rostering has become the norm and is used in all bar three of the Trusts surveyed (97%, N=90). Most report that the rostering system they use takes account of variation in expected workload by day of the week (80%, N=88) and by time of the day (74%, N=88). Typically it is a senior nurse manager or matron that has final responsibility for approving rosters (73%, N=90), although in 13% of cases the director of nursing or deputy has ultimate responsibility for approving rosters.

In most Trusts (89%, N=89) the nurse staffing required is reassessed at the start of each shift. Most typically this is done by a formal review using professional judgement (75%), with 39% using the Safe Care module in 'Allocate' to undertake reviews each shift, 15% using other forms of the SNCT, and a further 15% reporting they use a different patient dependency system for this.

5.3 Assessing adequacy of staffing levels

We asked how the Trust determines whether the nurse staffing level on a ward is adequate to provide care safely and meet patient needs. As planning staffing, multiple methods were reported as being used to assess if staffing levels are adequate on each shift: professional judgement by the ward manager (86%), review by senior nurse managers (82%), daily 'safety huddles' (74%), operational team meetings on site (69%) and other methods (14%).

The NICE guidance on safe nurse staffing in acute adult wards (50) introduced the use of 'red flags', as indicators of potentially insufficient staffing relative to the levels needed to provide care safely and meet patient needs. Directors of nursing in 82% of Trusts (N=91) report that there is a formal mechanism in place for staff to report the 'red flags' as defined by NICE. Respondents were asked to say how reports of 'red flags' were reviewed by the Trust. 72 of the 91 respondents gave details and their responses were content analysed. Almost all (97%) of these referred to data capture/reporting, with 35% also referring to use of 'red flags' in internal operational management, and 33% adding that red flags were reported to the board.

In the event that staffing is assessed as being insufficient to meet patient needs' safely, almost all (97%) Trusts reported having an escalation policy in place describing the action that should be taken.

5.4 Measures of staffing level & achieved staffing

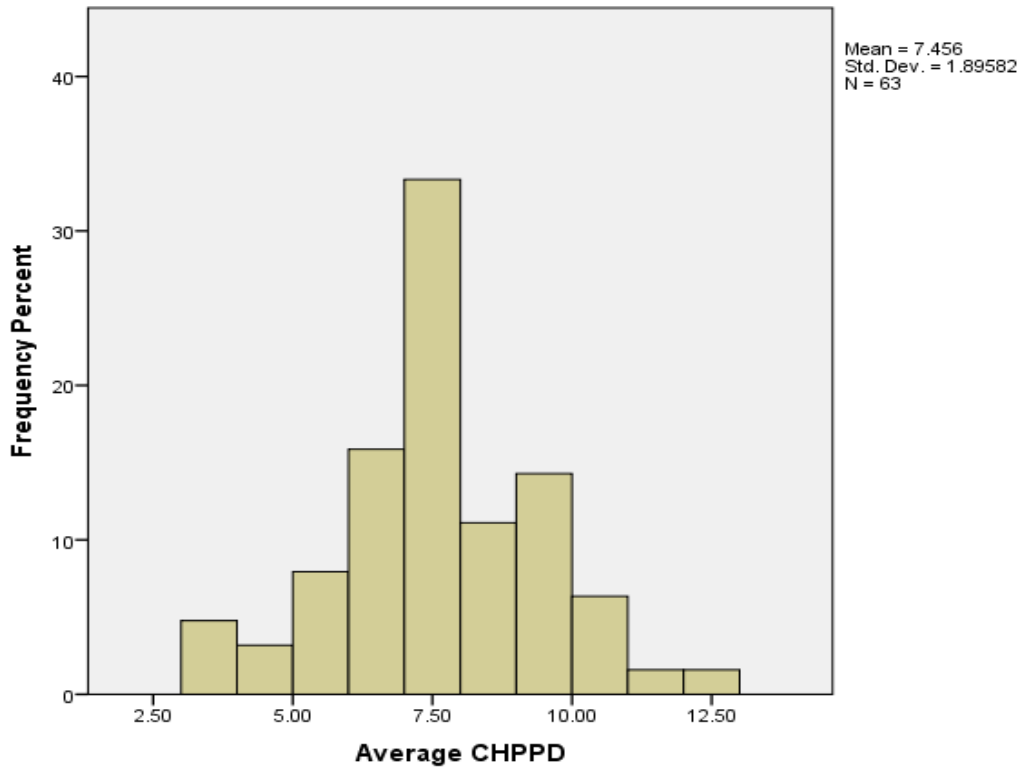
Following the Francis Inquiry, policies were instigated to increase the information available about nurse staffing, by better reporting to the board and making staffing data publicly available. In 85 out of the 91 Trusts (94%), Directors of Nursing indicated that RN and HCA staffing levels for each ward are reported to the board every month. Two staffing metrics have been introduced that are captured by each Trust and reported centrally:

- 'Fill rates' - that is the percentage of shifts that have the staffing number planned. Introduced by the CNO of NHS England following the government's response to Francis and announcement that nurse staffing data would be made publicly available. Data are published for each Trust on the NHS Choices website.
- Care Hours per Patient Day (CHPPD) – hours of care provided by RNs. A metric which was developed out of the Lord Carter review of efficiency in the NHS and subsequently launched by NHS Improvement for collection in all Trusts in England. These data have not been published to date.

Directors of Nursing were asked "On average in 2016, what was the Trust's 'fill rate' for shifts?" The reported fill rates (from the 78 Trusts supplying these data) varied between 70% - 102%, with an average of 93% shifts reported to have been staffed to the level planned. However, it is worth noting that this figure does not separate the fill rates achieved for registered nurse staffing and from the fil rates achieved for HCAs, nor does it disaggregate day shifts and night shifts, but presents an amalgamation for nursing staff over all shifts. An analysis of 'fill rate' data nationally is presented in Chapter 4.

Directors of Nursing were asked: *"What is the average Care Hours Per Patient Day (CHPPD) on adult acute wards in the Trust?"* Sixty three of the 91 Trusts provided data on CHPPD which varied considerably between Trusts as seen Figure 5.5. On average 7.5 hours of combined RN and HCA time were provided to each patient on adult acute wards, over each 24 hour period. The average skill-mix planned for adult acute ward was 62.3% for day shifts, and 58.6% for night shifts, with a 24 hour average skill-mix of 60.2%.

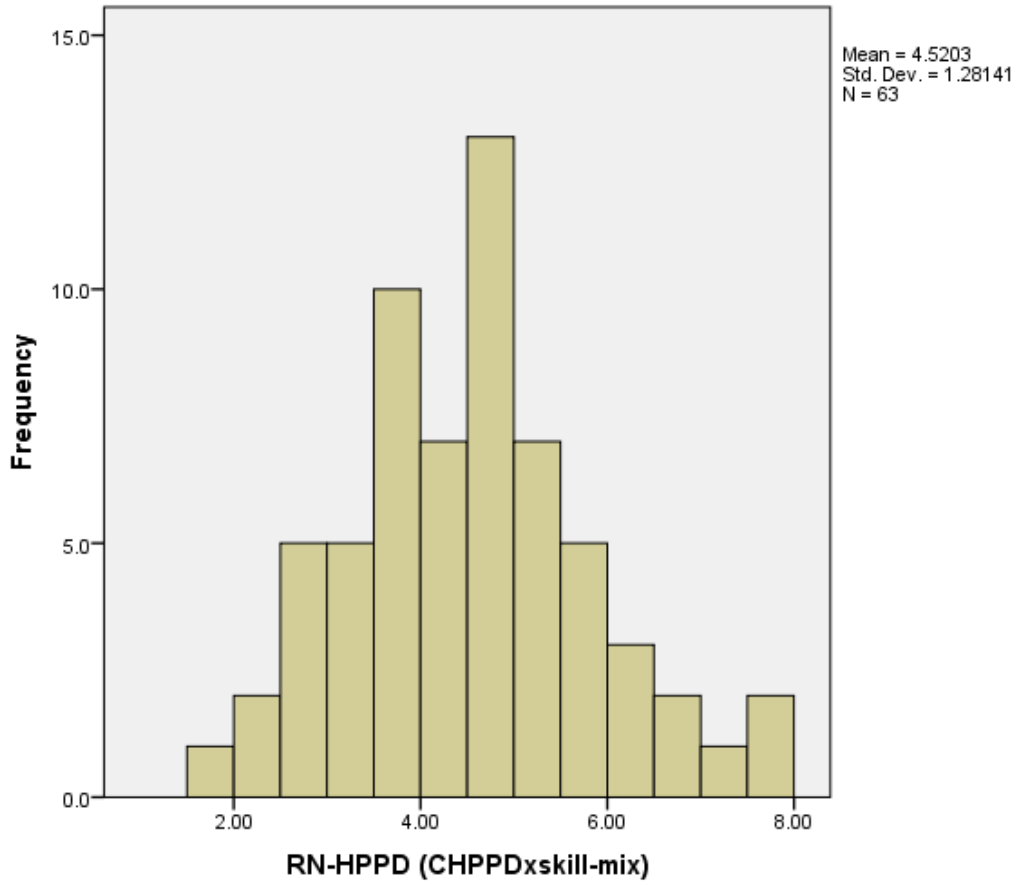
Figure 5.5 Average 'Care Hours per Patient Day' (CHPPD) on adult acute wards



By taking the averaging the skill mix between day and night shifts to create a 24 hour estimate, and multiplying by the total CHPPD, we can produce an estimate of the RNHPPD, for acute general wards, based on Director of Nurses' responses. Across 63 Trusts the overall average was 4.5 hour RN hours per patient day although this varied hugely between Trusts from a low of less than 2 hours RN time per patient over 24 hours to a high of almost 8 (Figure 5.6).

Comparison of the mean RNHPPD revealed differences according to region with London having the highest RN staffing (average of 5.78), the South and Midlands & East having the lowest (average of 4.24 and 4.26 respectively) and Trusts in the North having an average of 4.5 RNHPPD. No significant difference are seen according to size (the average for a large Trust being 4.7 RNHPPPD, for a medium 4.6 and for a small Trust 4.2)..

Figure 5.6 Average 'RN Hours per Patient Day' (RNHPPD) on adult acute wards



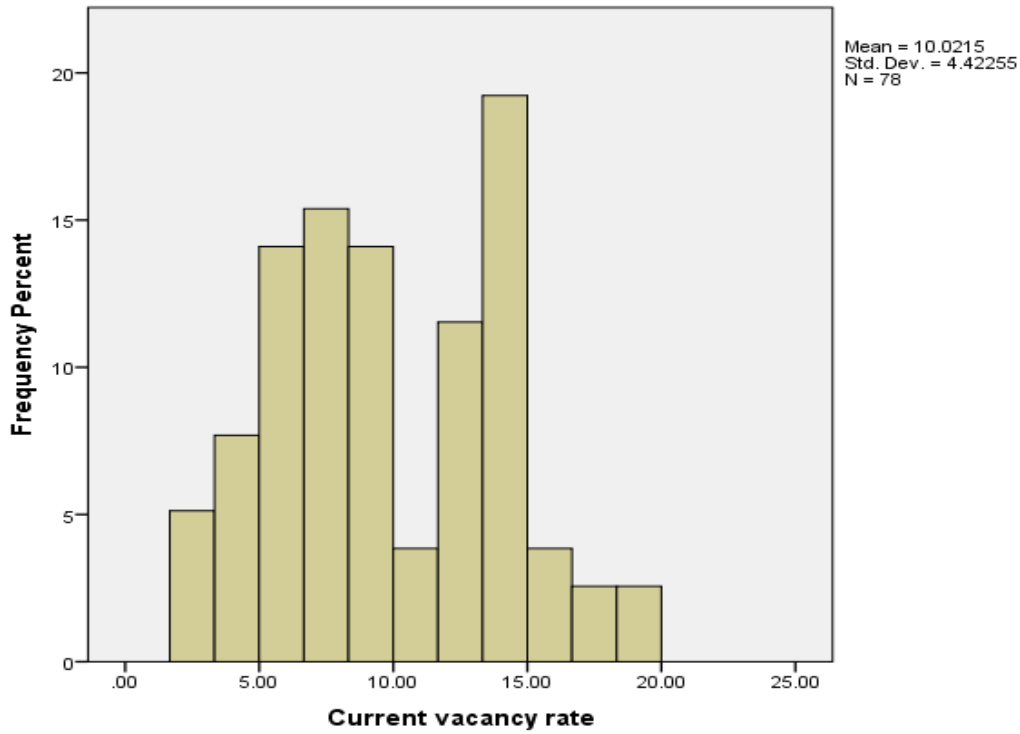
NICE advised that a staffing level of more than eight patients per RN providing care on general acute wards should be used as an additional warning indicator, to prompt review. Directors of Nursing were asked: *"How often has the number of patients per RN providing care on general acute wards during the day exceeded 1:8 in the past 12 months?"* In 17% of Trusts the Director of Nursing indicated that the data were not available and 3% did not answer this question. Of the 73 Trusts where information was provided, 10% reported that the 1:8 had never been exceed over the previous 12 months. At the other end of the spectrum, 24% reported that the 1:8 level had been exceeded (i.e. more patients per RN) on more than 65% of shifts. This finding suggests that a ratio of 1:8 or worse, remains the norm in many parts of the NHS. Given that Directors of Nursing reported that planned staffing is achieved on 93% of shifts, it would seem that in these Trusts a level of 1:8 patients per RNs is not due to unexpected shortfalls, but is down to the staffing level that has been planned.

In 23% of Trusts the Directors of Nursing estimated that the planned skill-mix had *"nearly always"* been achieved (90-100% of shifts) in the past 12 months. In 62% of cases it had *"usually"* been achieved (60-89%) of shifts have skill mix planned) with 15% reporting it had been achieved less frequently than this.

Whilst 85% report that ward managers are to some extent supervisory, 75% report that this status is regularly compromised with ward mangers 'pulled into the numbers' for half or more of their shifts when they are due to be supervisory.

The data on current vacancy rates (at the time of the survey, Feb-April 2017) shed some light on the nursing labour market that Trusts are operating within. The average RN vacancy rate (defined as current FTE RN posts unfilled) varied from 2% to 20%, with an average of 10%, as Figure 5.6 shows.

Figure 5.6 RN vacancy rate (percent of FTE RN posts vacant)

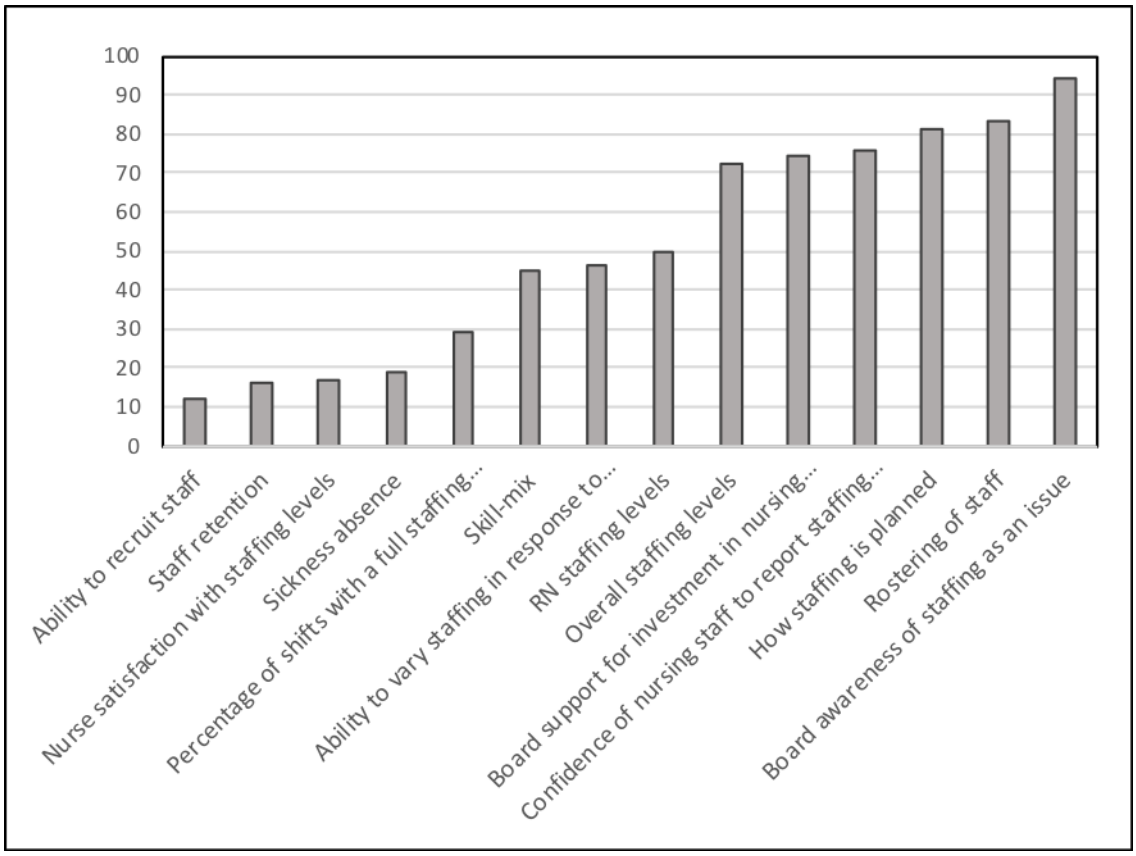


5.5 Impact of the Francis Inquiry and safe staffing policies

A key goal of undertaking a survey of Directors of Nursing was to get their perspective on the extent to which the Francis Inquiry, and subsequent safe staffing policies, had influenced what Trusts do in relation to planning nurse staffing and what has changed as a result. To explore this, we presented respondents with a list of aspects of nurse staffing and asked how each has changed at the Trust since the Francis Inquiry. The response options were 'worse', 'same' or 'better'. The percentages reporting that each had got better are presented in Figure 5.7.

The aspect that Directors of Nursing were most likely have reported as having got better since the Francis Inquiry is *"Board awareness of staffing as an issue"*; 94% reported it had got better, and 6% reporting it had stayed the same. 74% report that *"Board support for investment in the nursing workforce"* had improved and 76% felt that the *"Confidence of nursing staff to report staffing issues"* had also got better.

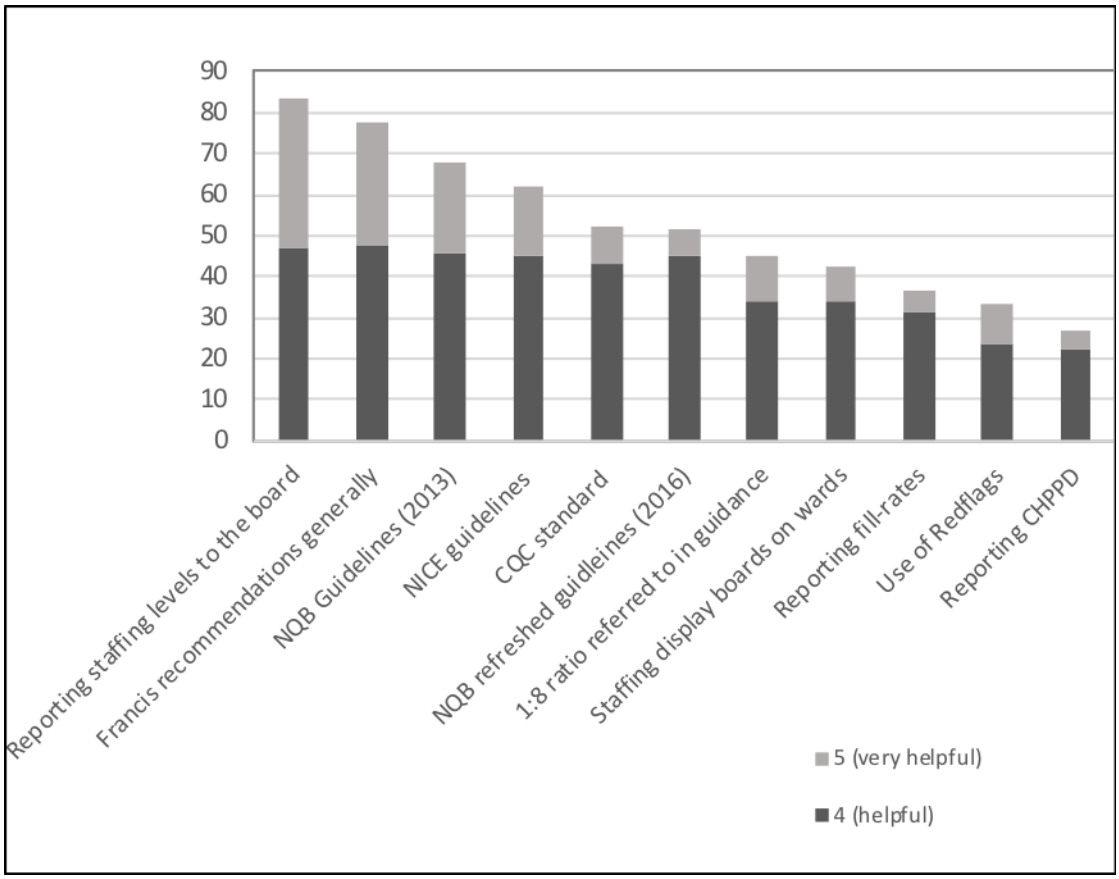
Figure 5.7 Aspects of nurse staffing that have got better since the Francis Inquiry - percent



Directors of Nursing are unanimous in their view that accountability for providing safe staffing is now part of the culture in their Trust at every level of the organisation: 76% reporting it was the case to a great extent, 24% to some extent and none of the respondents (all bar one answered the question) said it had not.

They were also positive about the changes in how staffing is planned (81% report it is better) and in rostering staff (83% say it is better since Francis). Whilst 72% report overall staffing levels have improved, only 50% consider that RN staffing levels have got better. 55% report that the skill mix has stayed the same (49%) or got worse (6%). Ability to recruit staff and staff retention were the issues that Director of Nursing were most likely to report as having got worse: 57% report ability to recruit staff has got worse, 31% say it has stayed the same with just 12% reporting it has got better since Francis. Added to this, few had seen any improvement in sickness absence (19%). Perhaps reflecting these combined pressures, only 17% reported that nurse satisfaction with staffing levels had improved with 53% saying it had stayed the same and 30% reporting it had got worse.

Figure 5.8 Factors that have been helpful in supporting changes to achieve safe staffing



The introduction of compulsory reporting of the CHPPD metric is least likely to have been regarded as having been helpful in supporting changes to achieve safe staffing (Figure 5.8). Views of Directors of Nursing are not uniform however. For example, there is a difference in opinion according to the average CHPPD levels achieved in the Trust; Trusts with the lower CHPPD staffing levels were less likely to have regarded the CHPPD metric as helpful in achieving safe staffing (25% rated it 4 or 5 on the five point scale) compared with those with the higher average levels of staffing (60%). Similarly Trusts with lower levels of CHPPD regarded the use of red flags and mandatory reporting of nurse staffing fill rates as helpful.

In contrast, the Francis recommendations generally were viewed as having been helpful in achieving safe staffing (78% indicating they were helpful or very helpful). Trusts with lower levels of RN staffing (with an average estimated RNHPPD of less than 4.5) were more likely to have viewed the Francis recommendations positively: 90% compared with 73% in the Trusts with higher RN staffing levels. In contrast a smaller portion of the Trusts with lower RN staffing considered that the NQB 2016 guidelines had been helpful: 37% compared with 64%. Views of the extent to which the NICE reference to 1:8 had been helpful were divided; 45% seeing it as helpful or very helpful. There was no significant difference in views held on this guidance according to current RN staffing levels.

Reporting staffing levels to the board was seen as having been very helpful or helpful by 84% of Directors of Nursing.

5.6 Challenges and other views

The survey explored what Directors of Nursing see as the biggest challenges firstly in planning and secondly in achieving safe nurse staffing levels in their Trusts (see Table 5.2). Recruitment difficulties are the most frequently cited challenge to both. Mostly recruitment referred to a general way but some Directors s of Nursing gave more specific details of the types of recruitment problems they faced or their views as to factors contributing to recruitment challenges. For example, some referred to a lack of availability of staff with suitable qualification & experience for particular specialty areas (13 cases) with older people's care singled out as a 'hard to staff' area by 2 respondents. Others referred to shortages both in the UK and abroad (8), or made reference to the level of competition in the labour market with other health care providers. Other issues surfaced related to recruitment included: a Brexit effect', Migration policies, the NMC English Language test, the OSCE/ Skills test, loss of the bursary, and poor workforce planning leading to nurse shortages.

Table 5.2 What are the biggest challenges? (percent citing each in open ended questions)

	Challenges in planning nurse staffing	**Challenges in achieving safe-staffing**
Unfilled vacancies	36%	25%
Barriers to recruitment	55%	60%
Budgets/cost control	15%	10%
Meeting demand - Trust level	16%	16%
Patient needs - ward/shift level	33%	10%
Policy	3%	4%
Covering unfilled shifts	26%	16%
Rostering	7%	0%
Retention	14%	16%
Staff factors	17%	7%
Systems	9%	12%
Organisational culture and accountability	6%	3%
Covering absences	16%	9%
Contractual issues	1%	1%
Other	2%	1%
Innovations and strategies	3%	10%
Total number of respondents	N=88	N=68

Key challenges to planning nurse staffing highlighted by Director of Nursing are unfilled vacancies (vacancy rates average 10% with a range of 2-20%) and barriers to recruitment, retention, covering unfilled shifts, covering absences and staff factors. While perception of organisational culture and accountability and implementing innovations and strategies are seen as lesser challenges. Generally challenges in achieving safe staffing (as opposed to planning it) broadly mirror these same concerns; 60% of respondents referred to difficulties recruiting staff as a major challenge in their Trust's ability to achieve safe staffing levels.

A final question on the survey asked Directors of Nursing if they had any other comments to make about nurse staffing, the policies aimed at ensuring safe staffing, and the processes of implementing national policies and guidance. A the previous questions covered the challenges associated with nurse staffing and implementation of safe staffing policy, In Table 5.3 below we present issues raised that point to other issues raised, and solutions put forward to address challenges.

Table 5.3 Any other comments: solutions put forward

Consistency in staffing methodologies/workload measurement
"To have a consistent approach across the Trust in regards to using data measurement tools re. AUKUH/SNCT/CHPPD."
"There needs to be consistency with guidelines and staffing levels expectations so DoNs can use one national tool to provide additional evidence to support why there is a need for certain level/skill mix of staff. This would also greatly assist operational staff/finance teams when planning budgets."
Accessible data for peer-benchmarking
"It is important that if we record staffing figures and send them in centrally that we are able to benchmark across England and London. The model hospital portal is not yet fully populated with data to enable peer benchmarking. This has been promised by NHSI for some time. It would be helpful to have benchmarks, nationally published for CHPPD."
"CHPPD not as helpful as hoped. Lack of benchmarking data available."
Focus on recruitment and retention & promoting nursing
"A HR and CN focus helped to improve recruitment, induction, training, learning and retention. A below (1:7) trigger a senior review."
"I am currently lobbying with Chief Nurse colleagues the need to promote nursing as a profession. I strongly feel that we need a national campaign to recruit and retain nursing (and midwifery) staff."
Removal of barrier to recruiting from the EU
"I would be able to meet safe staffing guidelines if I could recruit from non EU countries in a timely way. The requirements from NMC have put significant barriers in place which put patients at risk."
Attention to staff wellbeing and staff satisfaction
"Staff wellbeing and satisfaction plays a major part so working with the HR director on this and OD is essential for a sustainable future. I think guidance and policy should pay more attention to this."
Changing skill mix & alternative staffing models
"I would like to see the regulation of the Nurse Associate as this has been held up as part of the nursing workforce solution, whilst I do not want Nursing to be diluted I think roles which are developed which can undertake some nursing tasks without degree level education would be extremely helpful."
"I think the difference in opinion and views nationally makes it difficult to be brave and really look creatively and safely at staffing models and who is best placed to provide which elements of care to the patient at the bedside."

Consideration of input from therapies and multi-disciplinary team (MDT)
"Our patients their needs are a blend of therapy and nursing and we are not providing enough respect and value for the contribution of therapy."
"Reporting currently required pays little attention to the MDT."

Resourcing policy
"NHSI and other arenas are demanding more efficiencies which is reasonable enough but you need to invest to save. More often than not, electronic systems [for planning nurse staffing] do not get the impetus they require because of a lack of funding. E-Rostering teams themselves are run on a shoestring budget meaning it takes much longer to implement things than is necessary. I'd like to see the funding come with the recommendations."

The comments made by Directors of Nursing offer pointers as to how some of the challenges in achieving safe staffing might be overcome, or at least types of support that might help. The issue of consistency in approach to safe staffing arises, to enable better benchmarking. They also raise issues connected to improving ability to recruit staff, as well las thinking about safe staffing more broadly, to encompass the wider multidisciplinary team, and explore new ways of working. The need for funding and resources to support the implementation of safe staffing policy was also highlighted.

Chapter 5 Summary

- The vast majority of Trusts are reviewing nursing establishments at least every six months, and almost all are using the SNCT or a related tool (Safe Care, in Allocate, AUKUH), alongside professional judgment.
- Electronic rostering is the norm, being used by 97% of Trusts.
- In 89% of Trusts nurse staffing is reassessed at the start of each shift using methods of professional judgement (75% of Trusts) and or patient acuity and dependency systems (69% of Trusts).
- Multiple methods, mainly including professional judgement of senior nurses during review meetings, are used to plan staffing adequacy on each shift.
- 'Red flags' are reported at 82% of Trusts, 97% of them using the data in reporting, and more specifically in varying degrees to report to board and internal operational management.
- Planned staffing is reported as being achieved on 93% of shifts.
- 24% of Trusts reported that the number of patients per RN had exceeded 1:8 on more than 65% of shifts in the past 12 months.
- In 85% of Trusts, ward managers are supervisory to some degree, however in 75% of cases Directors of Nursing report this status is regularly compromised.
- Most frequently reported improvements since the Francis Inquiry are: how staffing is planned, rostering of staff and board awareness of staffing as an issue. The aspects least likely to be reported as improved were: ability to recruit staff, staff retention, nurse satisfaction with staffing levels and sickness absence.
- Francis recommendations generally and NQB guidelines (2013) were typically seen as having been helpful in supporting safe staffing. The use of 'red flags' and reporting CHPPD were less likely to have been regarded as having been helpful.
- Key challenges to planning and achieving nurse staffing are unfilled vacancies (vacancy rates average 10% with a range of 2-20%) and barriers to recruitment, retention, covering unfilled shifts, covering absences and staff factors.

6. Case study: processes & changes

In this chapter we draw on material from the four case studies to describe Trusts' experiences of implementing safe staffing policies, and their responses to national guidance on nurse staffing levels in greater detail. We look at how their approaches to planning, reviewing and reporting nurse staffing levels has changed following the Francis Inquiries and subsequent policies, and whether there has been any change in the number of nursing staff employed at each, the nurse staffing levels achieved, and examine metrics for signs of change.

After a short introduction to the four cases (which are outlined in full in the Appendix), we present a cross-case description on policy implementation, which highlights differences and commonalities in the approaches and procedures associated with planning, reviewing and reporting nurse staffing levels, and considers the roles involved in delivering safe staffing. Although these elements are presented separately each is interconnected which is evident in the cross over of descriptions in each section of this chapter. We move on to examine data on the number of nurse staffing posts and nurse staffing levels achieved at the four cases, and a description of changes in key metrics.

This chapter presents a descriptive account of the processes and changes observed. A more in-depth qualitative exploration – adopting a 'realist' approach to consider the mechanism and outcomes of implementation in relation to the context is then reported in Chapter 7.

6.1 Overview

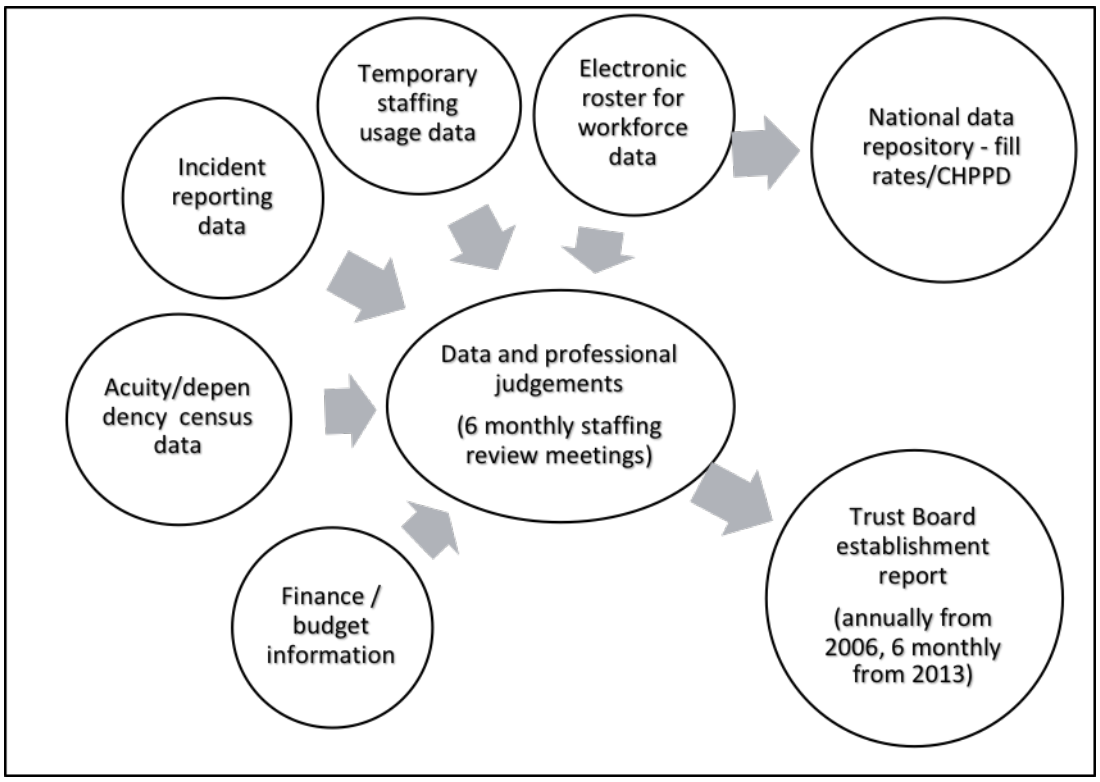
The four case study sites were mixed in terms of their size, generalist vs specialist (one specialist three general acute), and location (one in London, two cities outside of London and one town). All four were located in the South East/South West and included a London based Trust. Case A is a large university NHS hospital foundation Trust with over 1000 beds that serves a city population of approximately 1.9 million with specialist services branching out to cover regional populations of 3.7 million. Case B typifies a small 'district general hospital' associated with a large town and serving a rural area, usually covering a city population of approximately 400,000, though doubling that population over the nearby region in relation to some services. Case C is a small specialist Trust with approximately 200 in-patient adult beds. It treats over 50,000 NHS and private patients a year. Case D is an NHS hospital Trust with over 1000 beds serving a population living in a city and the wider region of approximately 675,000.

6.2 Planning nurse staffing: establishment setting

Prior to 2013, all four Trusts reviewed their nursing establishments annually. Following publication of the 2013 NQB guidance, all Trusts performed a six-monthly establishment review, although one reverted to an annual review following the 2016 NQB guidance (10,65). Reviews now typically relied on input from a wider team than previously, including ward leaders, finance and HR, as well as Matrons, Heads of Nursing and a Band 8 Safe Staffing Lead. The data used to inform the establishment reviews now included information derived from new electronic systems.

New elements that inform establishment setting include benchmarking of Care Hours Per Patient Day (CHPPD) using model hospital by NHS improvement, 'red flag' incident reporting as defined by NICE 2014 (50), more easily accessible and usable data relating to the staff roster, temporary staffing data and patient acuity and dependency. Trends and hotspots of nurse staffing were identified and used to inform the budget post Francis linked to an evolving culture that safety and quality comes first and this relies on safe nurse staffing. That said, budgets did also have a role, alike to pre-Francis, in setting nurse establishment. It remained a balancing act but one that is more favourable to the voice of nurses at board level. The elements that inform establishment setting are summarised in Figure 6.1.

Figure 6.1 Elements that inform establishment setting



6.3 Electronic technology data collection and monitoring

Common changes in all Trusts included shifting to easily accessible, real-time, functional and integrated Trust wide electronic data monitoring tools facilitating the availability of using more information to inform decisions. At three of the Trusts electronic rostering pre-dated Francis, however it was not linked and integrated with temporary nurse staffing data (i.e. nurses employed on the Trust's temporary staff bank or through a nursing agency) or acuity and dependency data based on the SNCT. Acuity and dependency data pertains to either how acutely ill or dependent or both a patient may be. The SNCT aims to estimate the level of nursing care a patient requires to manage their current condition by categorising acuity and dependency into different measures, for example whether they are in a stable condition, need extra assistance with activities of daily living, acutely ill with potential for deterioration or requiring critical care of the level delivered by the high dependency unit or the intensive care unit.

Following the Francis Inquiry, all four Trusts' substantive nurse staff roster, temporary staff roster, acuity and dependency data and 'red flag' incident reporting as defined by NICE 2014 (50) was now recorded by nurses at ward level onto a shared Trust wide electronic system. Data for the electronic roster for nursing staff and temporary nursing staff was inputted by band 6 or band 7 ward leaders. However, the acuity and dependency data is inputted by the nurse in charge, who could be band 5, 6, or 7, of each shift on each ward twice or thrice daily. Prior to the Francis Inquiry all Trusts were recording acuity and dependency data but only over a period of three weeks during day time hours per annum.

Quality assurance of these data was carried out by the designated workforce planning and/or rostering teams and the Safe Staffing Lead. In some of the Trusts, audit programs for the data have been recently set up in January 2018 carried out as part of Clinical Governance. Safe Staffing Leads, Directors of Nursing and Heads of Nursing were liaised with during this process. Risk oversight of local risk registers regarding staffing risks is carried out by Head of Nursing in each Division.

At two Trusts the Information and Technology (IT) Team were involved with ongoing work with Directors of Nursing, Divisions, HR, Finance and software developers to support and develop electronic safe staffing tools and technologies.

All Trusts' Safe Staffing Leads perceived that accessible, real time, easy to use electronic technology was an enabler in responding to the NQB (2013) (10) guidance.

Training

An example of training for the electronic roster and electronic system based on the SNCT at one Trust was the provision of an online training for all staff and face to face training day for all band 6 and 7 nurses, led and rolled out by a band 8 Safe Staffing Lead, present for a day and assisted by a band 4 facilitator present for a whole day.

Workforce planning and/or roster teams expanded from 2015 at all sites in line with the adoption of new integrated electronic rostering and acuity and dependency systems. In one Trust they had taken on board the role of training the nursing workforce in defining 'red flags' according to NICE 2014 guidance.

At another Trust roster clinics were introduced post Francis alongside the introduction of new electronic rostering systems and the electronic system based on the SNCT. These clinics involved the Safe Staffing Lead and the ward leaders meeting together to discuss effective rostering, related workforce issues and policies such as escalation or definitions of 'red flags'. There have been mixed feelings among ward leaders about these sessions, with some feeling as though they were 'on trial' and undermined by loss of rostering responsibility, despite this it was acknowledged that the clinics were important as the new electronic systems were not yet working optimally.

6.4 Rostering & reviewing nurse staffing

Since the Francis Inquiry all Trusts followed the recommendation that effective ward rostering must be completed 6-8 weeks in advance. In each of the Trusts, similarly to pre Francis the initial roster request was put forward by Band 6 or 7 ward leaders, including requests for additional staff (e.g. vacancies and maternity leave). Prior to Francis these rosters would be reviewed, particularly with regard to bank and agency needs, by Matrons in the relevant nursing division; post Francis some Trusts have moved this review process to be the role of the Safe Staffing Lead. The Safe Staffing Lead role at each Trust includes organising regular safe staffing meetings to review performance against NQB & NICE guidelines (10,50,65).

All Trusts used data on the achieved staffing levels vs the planned staffing as an indicator in reviewing staffing. While this approach was used pre Francis, since implementing safe staffing policies the data to inform these decisions are more easily accessible and trends can be identified. Other indicators used to help review staffing focus on whether patient and staff needs are being met and are informed by data from the sources such as 'red flags' as defined by NICE 2014, and incident reporting more generally i.e. are staff and patients safe and their needs met (e.g. medicines given on time, no reports of incidents or errors). Nurses assessed these indicators using the data available and their own professional judgement in order to draw on relevant context and experience to inform the pertinence of the data, and thus advise ensuing decisions.

Daily staff review

Since safe staffing guidance was introduced, electronic rostering and electronic system based on the SNCT are used to provide data such as 'red flags' and 'CHPPD'. At one Trust, since 2017 these data were increasingly used to identify staff short falls and inform daily strategies and plan nurse for the following day. At most Trusts acuity and dependency data were rarely used 'on the day' at this early stage of implementation. However all Trusts plan to use an electronic tool based on the SNCT more proactively and in real time in the future. From these data it is possible for the nursing directorate to easily access acuity and dependency data, and monthly CHPPD, fill rates and planned versus actual nurse staffing numbers for use in staffing review meetings.

All Trusts had changed to see their daily staffing review meetings include all divisions site wide and a wider spread of interdisciplinary team members such as HR and Finance. One Trust increased their number of daily site wide meetings from once or twice a day to three to four times a day. Similarly to pre Francis daily staff planning for subsequent shifts was under constant review attended by ward staff, bed managers, Matrons and others (e.g. divisional Heads of Nursing, discharge team, workforce planning and rostering team – this expansion was a change that occurred post Francis). Other activities included monitoring demand (through front and back doors) and responding to problems (e.g. increased demand, short notice leave, staff sickness, discharge planning), these strategies were unchanged from pre Francis.

Response to staff shortfall

Similarly to pre Francis, nurse managers expected their staff to have already identified and anticipated most situations through daily review meetings, such that responses are already well underway or resolved.

Trust responses to staff shortfall both in the long and short term, external and internal, appeared largely unchanged by safe-staffing policies (including strategies such as transferring staff as required from low risk areas to higher risk areas, funding additional shifts, i.e. over-time, requesting temporary staffing cover and temporary closure of beds). However all Trusts' escalation procedures did change to include 24 hour bleep cover upward of Matron level to include the Safe Staffing Lead or Directors of Nursing during day time hours, with one Trust building in 24-hour escalation to Chief Nurse if required.

6.5 Reporting nurse staffing

Internal

At each Trust common changes include Trust level reporting: six-monthly staffing establishment reports presented to board (Case A only submits an establishment report annually since October 2017 in response to updated NQB guidelines (65)), and monthly reports on staffing to board (submitting data on planned vs actual nurse staffing numbers, fill rates and CHPPD). Previous to the Francis Inquiry, all Trusts submitted an annual establishment report and staffing was not on the board agenda on a monthly basis.

Alongside the introduction of integrated electronic data systems post Francis, Matrons and ward leaders are encouraged to export data they need in their department independently with support from the Workforce Systems Team if required.

In Case C, Red Amber Green (RAG) is used when sending out an operational report twice daily with the operational oversite of the hospital including bed state, admissions, discharges, delays, operational issues and staffing oversite.

Finance for workforce informed 'Ward to Board' reporting by sending budget statements to the electronic roster and workforce planning teams to incorporate into nurse staffing reports as budgeted WTE. Although this role had previously been carried out by Finance, the type of data these budgeted WTE links in to had changed post Francis in line with the different kinds of data such as Fill rates and CHPPD that have been introduced. Also, the frequency of the data reporting has increased to be in line with the NQB 2013 guidelines.

In all Trusts either the workforce planning and rostering team took a lead in internal and external reporting. Two of the Trusts employed a data analyst as part of the workforce planning team, these roles expanded to include more data analysis and reporting around safe staffing post Francis. Post Francis they began putting together monthly reports on CHPPD, planned versus actual nursing hours and related issues (e.g. 'red flags') as per NQB/NICE recommendations and the Safe Staffing Lead shared these trends with the board (10,50,65). In some Trusts rather than be exported these data were viewed on the electronic interface during board meetings.

External

The workforce planning and rostering team also shared these data with the national data repository and Trust website with the oversight of the Safe Staffing Lead.

Post Francis planned versus actual nursing and nursing support worker numbers were also published at ward level.

6.6 Key job roles/staff involved in safe staffing

Section 6.5 aims to highlight key roles involved with safe staffing that are in some cases already described in some specific detail previously in this chapter. We wanted to highlight these roles as they are a resource that is drawn upon more deliberately with regard to costings presented in Chapter 8.

The Director of Nursing took overall responsibility for safe staffing at each of the four Trusts. This responsibility had always been in place, but post Francis had changed practice to place de the Director of Nursing as the top level in the escalation response to nurse staffing shortage. Job roles have evolved to take ownership and lead of safe nurse staffing in each Trust as the issue has gained greater national attention since February 2013. At each case study Trust this role had been taken on by a Band 8 Lead Nurse (in this chapter we will refer to this role as the Safe Staffing Lead) and a workforce planning and rostering team. In two Trusts a new Band 7 role was also created to assist the Safe Staffing Lead.

Workforce planning and rostering teams worked with Directors of Nursing and Safe Staffing Leads to manage safe staffing across the Trusts, particularly in connecting different departments and managing ward establishments, rostering and budgets. Each Trust had a different name for these teams, with a different number of members. Team sizes varied across the four cases from 4 to over 18 members of differing job roles and positions, including data analysts [a detailed breakdown of the roles involved at two Trusts is included in Chapter 8]. A generic term has been used here to describe these working teams to uphold anonymity for the Trusts. Changes that occurred post Francis include these teams evolving over time to take a larger proportion of their work relevant to the coordination, management and accountability of safe staffing at their respective Trusts.

At all four Trusts the following job roles remained the same post Francis: Divisional management teams (including Divisional Heads of Nursing) were responsible for safe staffing across Divisions including managing budgets, overseeing rostering and related issues (e.g. vacancies, sickness). Ward leaders were involved with setting establishment, and responsible for planning and delivering balanced staff rosters and supporting their staff to deliver safe staffing, overseen by Matrons.

The Supervisory Ward Leader Model has been adopted at three Trusts post Francis in keeping with recommendations to support effective leadership on the wards by offering supernumerary status for ward leaders in order to release time for teaching, support, training and appraisal of staff. General feedback of this programme from Safe Staffing Leads was that the benefits were yet to be realised due to the high levels of vacancies experienced at the three trusts involved impinging on the supervisory time, however the idea of the model was valued and there was hope for benefits in the future.

At some Trusts Matrons still offered the final approval of nurse staffing rosters (though at other Trusts this role had now been taken on by the Safe Staffing Lead) and remained responsible for safe staffing in their divisional areas and across whole hospital out of hours. Finance maintained an element of influence regarding setting nurse establishment at board level due to the importance that budgets continue to hold.

Table 6.1 summarises the key departments and individuals with safe staffing responsibilities.

Table 6.1 Key departments and individuals with safe staffing responsibilities

	Roles and responsibilities (key differences by Case highlighted)
Nursing Directorate	Director of Nursing/Chief Nurse – overall responsibility for safe nurse staffing. Assistant/Deputy Director Nursing/Lead Nurse (workforce related) – recognised safe staffing lead, alongside many wider workforce roles. Clinical Governance & Risk – includes roles in clinical audit and information, including leads for workforce with input to safe staffing, liaison with care groups and oversight of local risk registers (e.g. staffing risks) in care groups. Quality – includes workforce safe staffing remit, plus wider related roles (e.g. software development from IT).
Human resources	Working with Care Groups on recruitment and retention activities. Includes workforce planning and rostering team located in two Trusts as part of nursing directorate, in one Trust as part of their own workforce directorate and in the other with HR. The teams at all four Trusts are responsible for managing safe staffing across the hospital, particularly in connecting different departments, managing ward establishments and budgets and overseeing and supporting staff across hospital with rostering, SNCT etc. Daily staff management activities with Care Groups related to safe staffing (e.g. fitness to work, occupational health, employment rights, maternity leave, sickness, bullying & harassment etc.).
Care Groups	Directors of Operations & senior managers (e.g. Divisional Directors/Group Heads of Nursing) – responsible for operational safe staffing. In three Trusts Matrons approve nurse staffing rosters and responsible for safe staffing in areas and across whole hospital (out of hours). In one Trust the Safe Staffing Lead approves nurse staffing rosters. Ward leaders/sisters - planning and delivering balanced rosters and maintaining safe staffing on their wards. Role of others in delivering safe staffing (e.g. in one trust 'Board Holders' [Band 3 support workers involved in daily staffing reviews and bookings for bank and agency] and temporary staffing office & ward administrators in all trusts).
Finance Directorate	Finance leads for Care Groups constantly work with Directors of Nursing, senior managers, Matrons etc. planning, monitoring and reviewing staffing and budgets.
IT Department	Ongoing work with Directors of Nursing, Care Groups, HR, Finance, software developers etc. to support and develop safe staffing tools and technologies.
Trust Board & senior management	Monthly reports on safe staffing and related issues (e.g. 'red flags') as per NQB/NICE. Quarterly performance reviews from Care Groups (include staffing, care quality). Six monthly establishment reviews by Directors of Nursing/safe staffing leads.

6.7 Nurse staffing at the case study Trusts

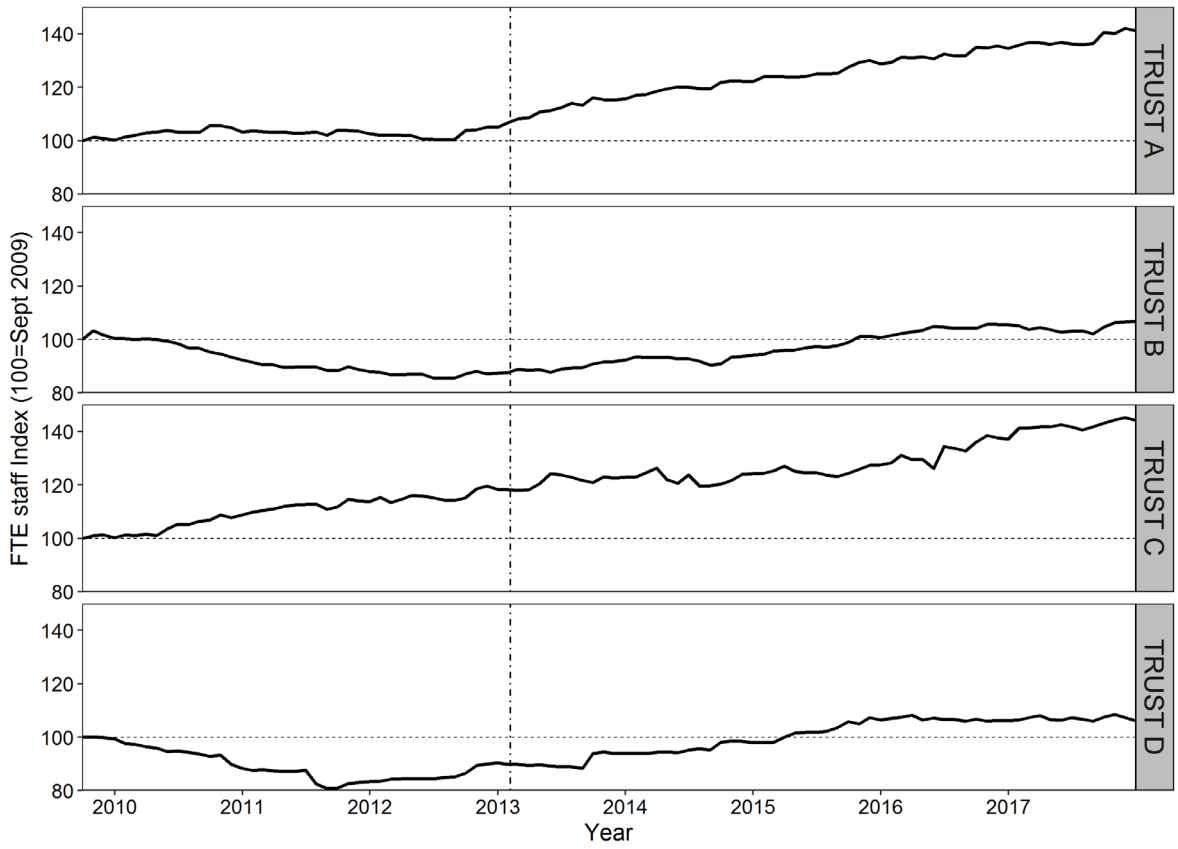
In Chapter 4, we examined the overall national trends in nursing workforce numbers. In this section we turn to examine the same types of data for our four case study Trusts, to identify trends and patterns over time and look at differences and similarities between the case sites.

6.7.1 Nursing staff numbers (FTE)

Our analysis of nursing workforce numbers at the case study sites draws on data from two sources: national data sets on non-medical workforce, and Trust recorded workforce data derived from local staffing establishment reports (including planned vs actual staff in post and ward bed complements) along with fill rate data submitted to UNIFY. The data from the national datasets is based on monthly records of the full time equivalent (FTE) number of staff employed and working acute, elderly and general services from September 2009 to December 2017. It excludes agency staff. In many of the figures presented we have superimposed a vertical line to indicate the date the second Francis Inquiry report was published and reflect on changes in staffing levels since that time.

All four Trusts showed an overall increase in nursing staff numbers in the period following the publication of the Francis Report. In Trust C, an increase of 22% between 2013 and 2017 was a continuation of an upward trend that can be observed since 2009, creating an overall increase of 44% in the entire period. In Trust A, after a period of virtually no change between 2009 and 2013, a steady increase has occurred since 2013 (of 31%), creating an overall increase of 41% from Sept 2009 and Dec 2017. This pattern echoes the trend identified nationally. In the remaining two trusts, increases in the post Francis period followed decreases in preceding years. Growth in the post-Francis period appears to have slowed in 2016. Overall, staffing numbers in these two trusts have only marginally increased since 2009 (7% for Trust B and 6% for Trust D).

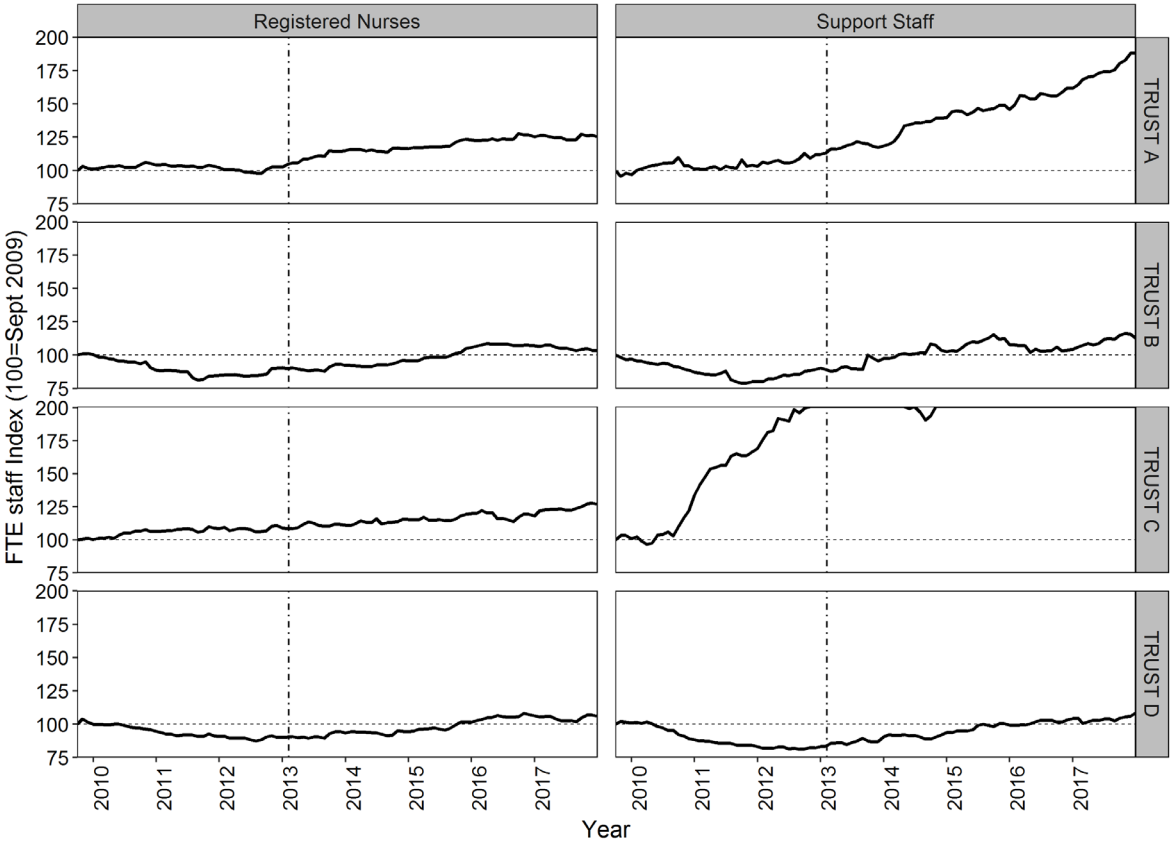
Figure 6.9 FTE nursing staff (RN & HCA) at case study hospitals (Sept 2009- Dec 2017)



Source: NHS Workforce Statistics – Provisional Statistics (84)

Figure 6.9 shows the total staffing split to show trends in registered nurse and support staff. The trend in registered nurse staff numbers for each Trust roughly follow the overall patterns identified for all staff in Figure x.1 While the trend in support staff numbers in Trust B and Trust D also follow the pattern shown for all staff, in Trust A support staff numbers show a markedly greater increase than do registered staff. Following a Trust change in policy, Trust C underwent a change from virtually no support staff to a major increase in numbers – of almost 250% – with the skill mix (percentage of registered nurses in the workforce) changing from 91% to 80% in this period.

Figure 6.10 FTE RN and support staff at case study hospitals (Sept 2009- Dec 2017)

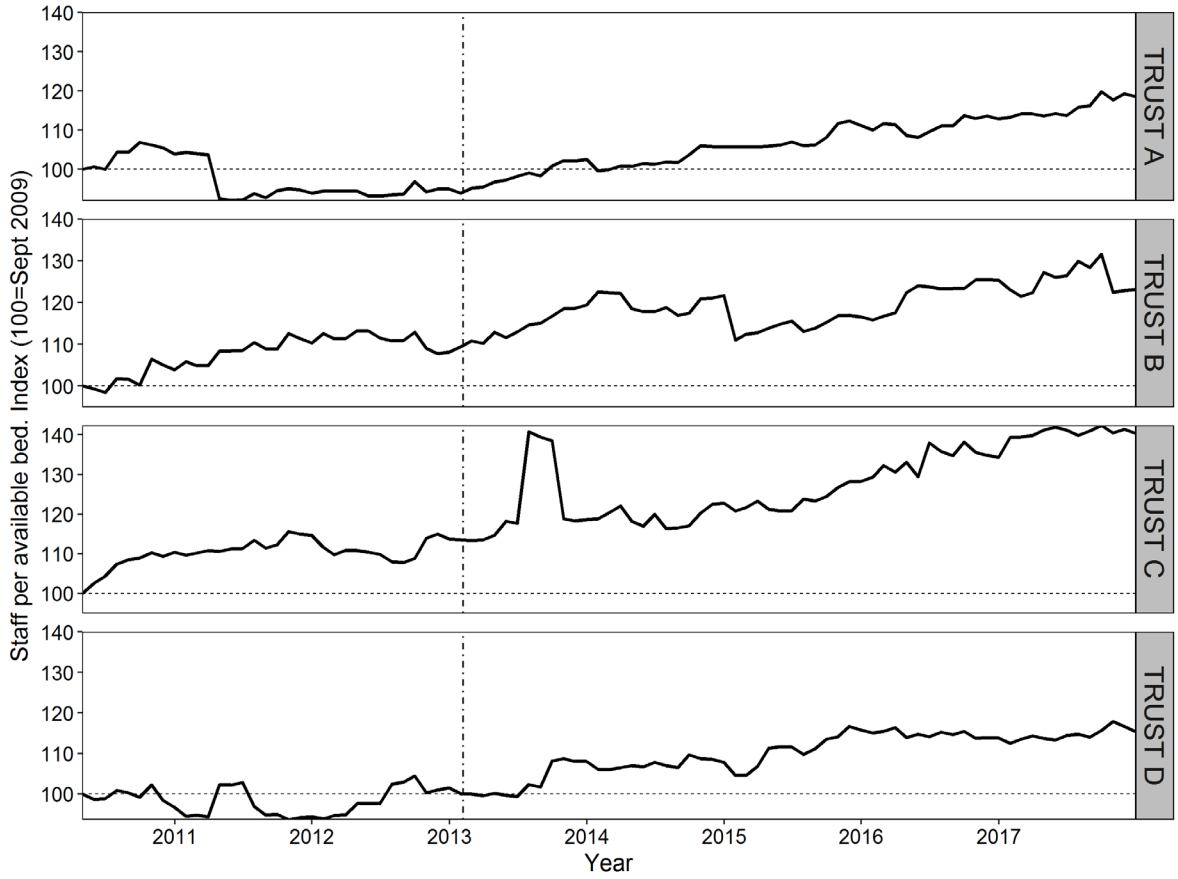


Source: NHS Workforce Statistics – Provisional Statistics (84)

6.7.2 Staffing levels

A new measure was produced to examine nurse staffing in relation to the available beds. Figure 6.11 shows overall staffing levels (FTE of total nursing staff per available bed) in acute, general and elderly nursing at the case study trusts. The time series have been indexed to the April 2010 value for each Trust (the first date for which data are available on both FTE staff and available beds), thus the figures show the percentage change in staffing levels over the time series. The FTE of total nursing staff per available bed had increased for each of the four Trusts since 2010, however these increases have not been constant or consistent over the whole period – as shown in Figure 6.11. Two of the trusts have shown a tendency toward continuing increase in staffing levels (with some fluctuations) while the other two Trusts showed decreases in staffing levels of around 10% for up to three years from the beginning of the time series.

Figure 6.11 Nurse staffing (FTE RN & support) per available bed Sept 2009-Dec 2017

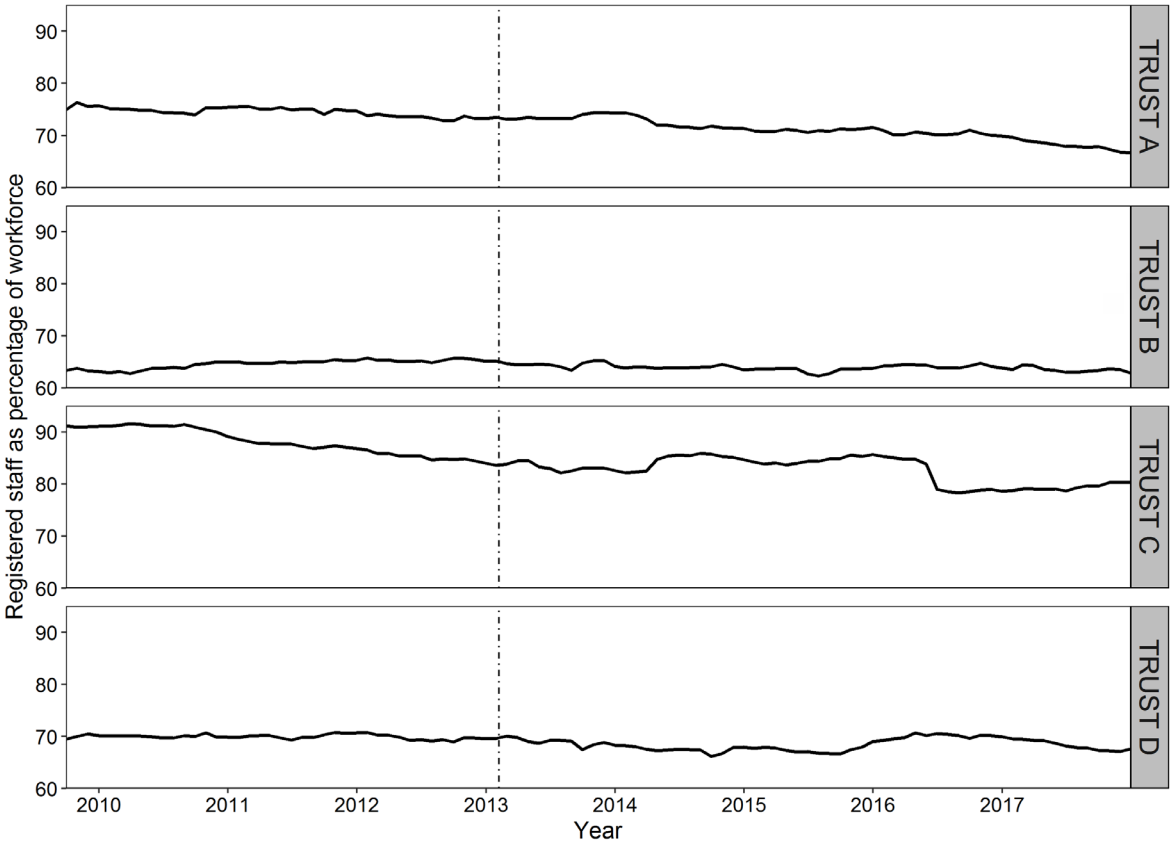


Source: NHS Workforce Statistics – Provisional Statistics & Bed Availability and Occupancy data (KH03) (85)

6.7.3 Skill mix

Figure 6.12 shows the skill–mix (proportion of registered nurses) of the workforce in each Trust. The Trusts that started with the lowest skill mix (Trust B and Trust D) have seen little change since September 2009 remaining around the average of 64% at Trust B (range 62% to 66%) and 69% at Trust D (range 66% to 71%). The skill-mix in the other two Trusts had become more dilute, with the proportion of registered nurses with Trust A moving from 75% in September 2009 to 67% in December 2017. Over the same period the proportion of registered nurses in the workforce at Trust C reduced from 91% to 80%.

Figure 6.12 skill-mix (registered nurses as a proportion of workforce) in case study trusts



Source: NHS Workforce Statistics – Provisional Statistics (86)

6.8 Ward level nurse staffing data from Trusts

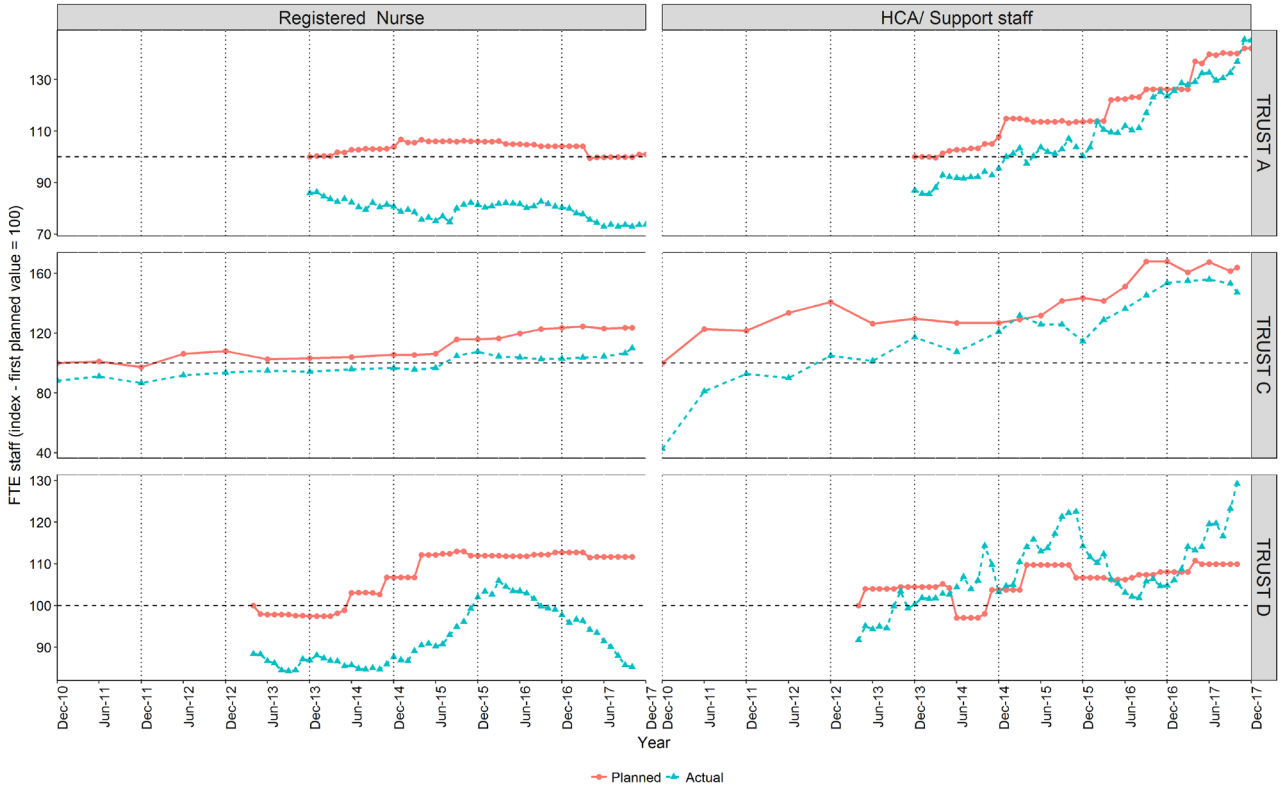
Trust level data reported to the HSCIC used in the preceding sections has the advantage that is uses standard role descriptors but does not allow insight into ward level staffing. As the focus of this project is on safe staffing on general adult general inpatient wards, this represents a potentially significant limitation. In this section we move on to examine data provided directly by the case study Trusts on nursing establishments (planned number of nursing posts), the number of staff in post (actual staffing numbers) and use of agency and bank staff on adult general acute wards. None of the trusts were able to supply all of the historical data requested, due to changes in technical staff and changes in IT systems. Moreover the length and level of detail available from each Trust varies. To reduce the identifiability of the case study, Trusts' data are presented as indexed values (setting the first occurrence for each time series as the index value) – this means data for each case study Trust can be compared over time but the Trusts cannot be meaningfully compared against each other.

Figure 6.13 shows the planned establishments of registered nurses and healthcare assistants at the three case study hospitals where it was available. The two figures indicate that planned establishments have increased in the Trusts, and that the increase in support staff was similar to or proportionately greater than that in registered nurses. Planned registered nurse establishment increased by 1% at Trust A, 19% at Trust C and 12% at Trust D, while the equivalent values for support staff were 42%, 335% and 10%.

The large growth in support staff at Trust A and Trust C led to shifts in skill mix in the planned establishments (from 65% [registered staff as a proportion of the total care workforce] to 58% at Trust A and 94% to 82% at Trust C).

The analysis shows a persistent shortfall between the planned establishment of RNs and number of staff in post in each of the Trusts, of between 10% and 20% at the Trust level. In contrast, the number support staff in post rarely fell below the establishment figure, and in some instances exceed it, indicating over-recruitment to support staff roles – suggesting that some of the shortfall of RNs is being covered by support staff on some wards.

Figure 6.13 Planned nurse and support staff establishments compared with actual staff in post at case study trusts



To gauge staffing levels as opposed to simple numbers, we calculated the FTE staffing establishment per bed, for registered nurses and support staff, and present the data for the three case study hospitals in which it was available. This is based on ward-level data provided by the Trusts, giving detail on the planned establishment levels, whereas the national workforce data previously reported describes substantive staff employed in the NHS.

Overall, Trust A and Trust C show an overall increase in staffing levels (equivalent to annual increases of between 3 and 3.5% over the time series collected for each Trust). In contrast staffing levels appear broadly unchanged over the time data were collected from Trust D, with a slight decrease of around 3% from early 2016.

Figure 6.14 Planned staffing levels of RNs and support staff combined (FTE per bed)

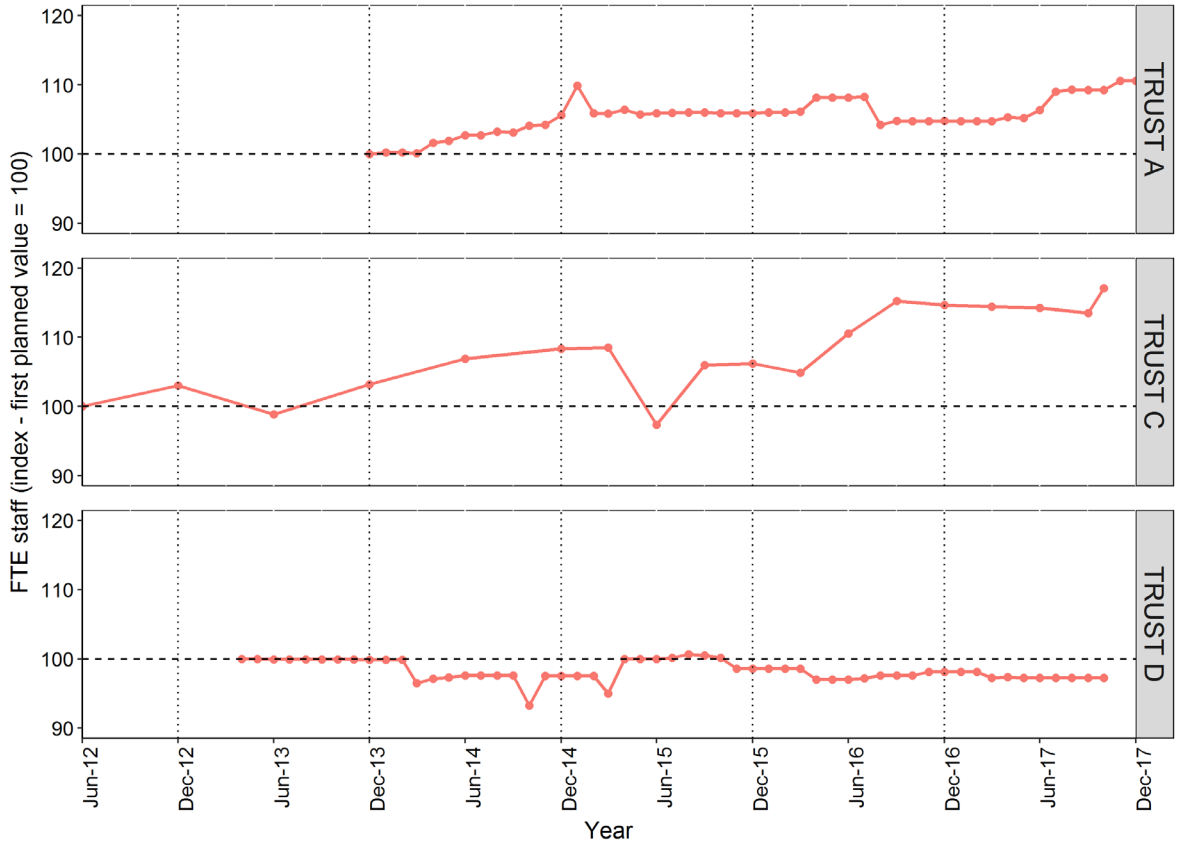
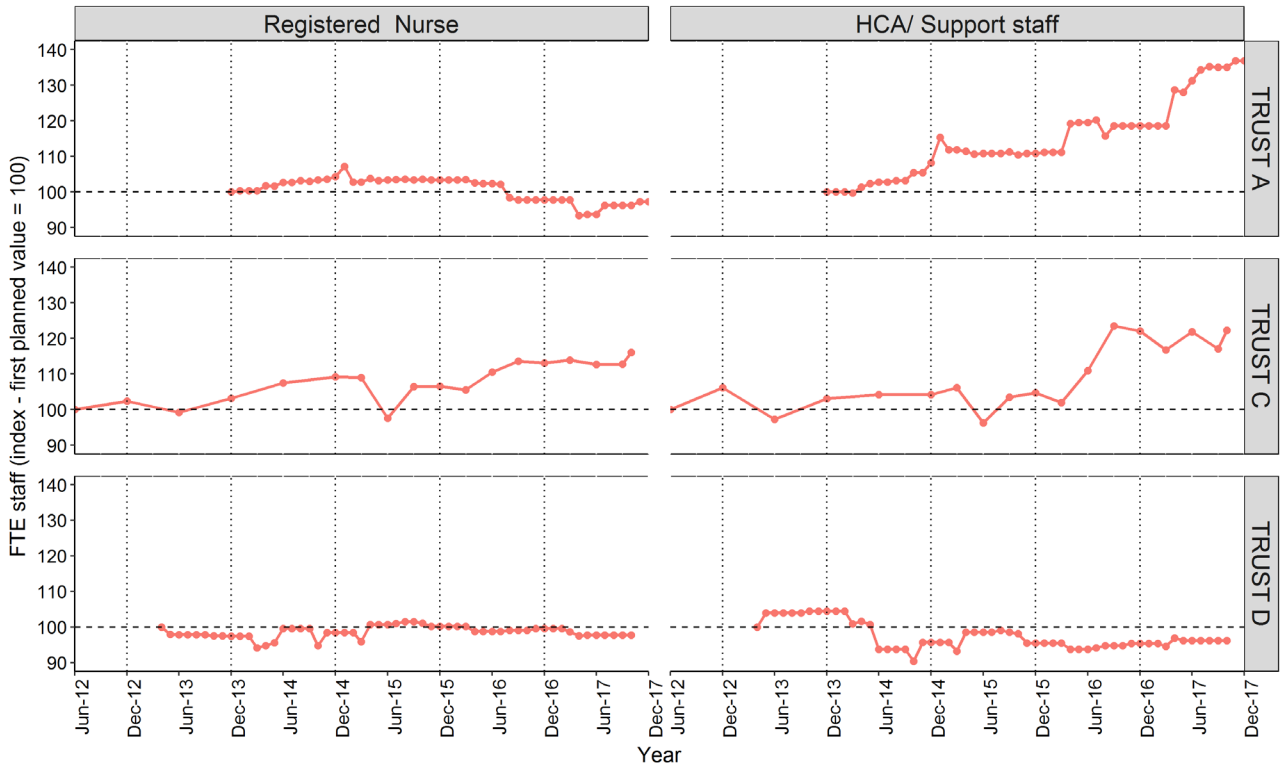


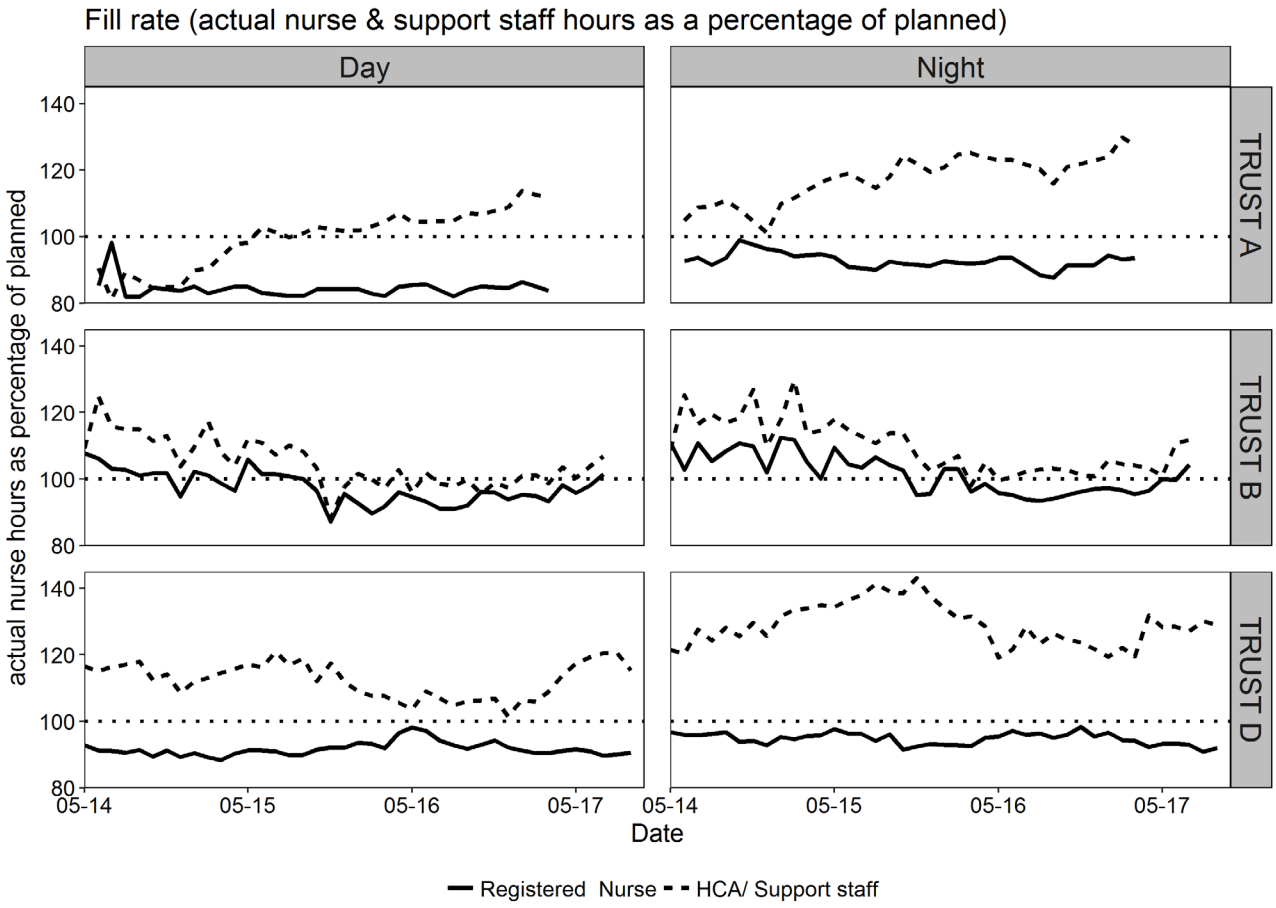
Figure 6.15 shows different patterns in staffing levels of registered nurses compared with support staff. The overall increase in staffing levels at Trust A is largely attributable to the growth in support staff, whereas at Trust C the growth in overall staffing levels reflects growth in both registered nurse and support staffing.

Figure 6.15 planned staffing levels of registered nurses and support staff (FTE per bed)



While overall staffing levels at Trust D appear broadly unchanged through to early 2017, the pattern for registered nurses and support staff is a little more variable with periods where increases in one group of staff appeared to compensate for reductions in the other. From March 2013 to January 2014 registered nurse staff levels reduce slightly but were compensated by an equivalent increase in support staffing, while the reverse applies from June 2014 to January 2015.

Figure 6.16 Fill rates in case study Trusts

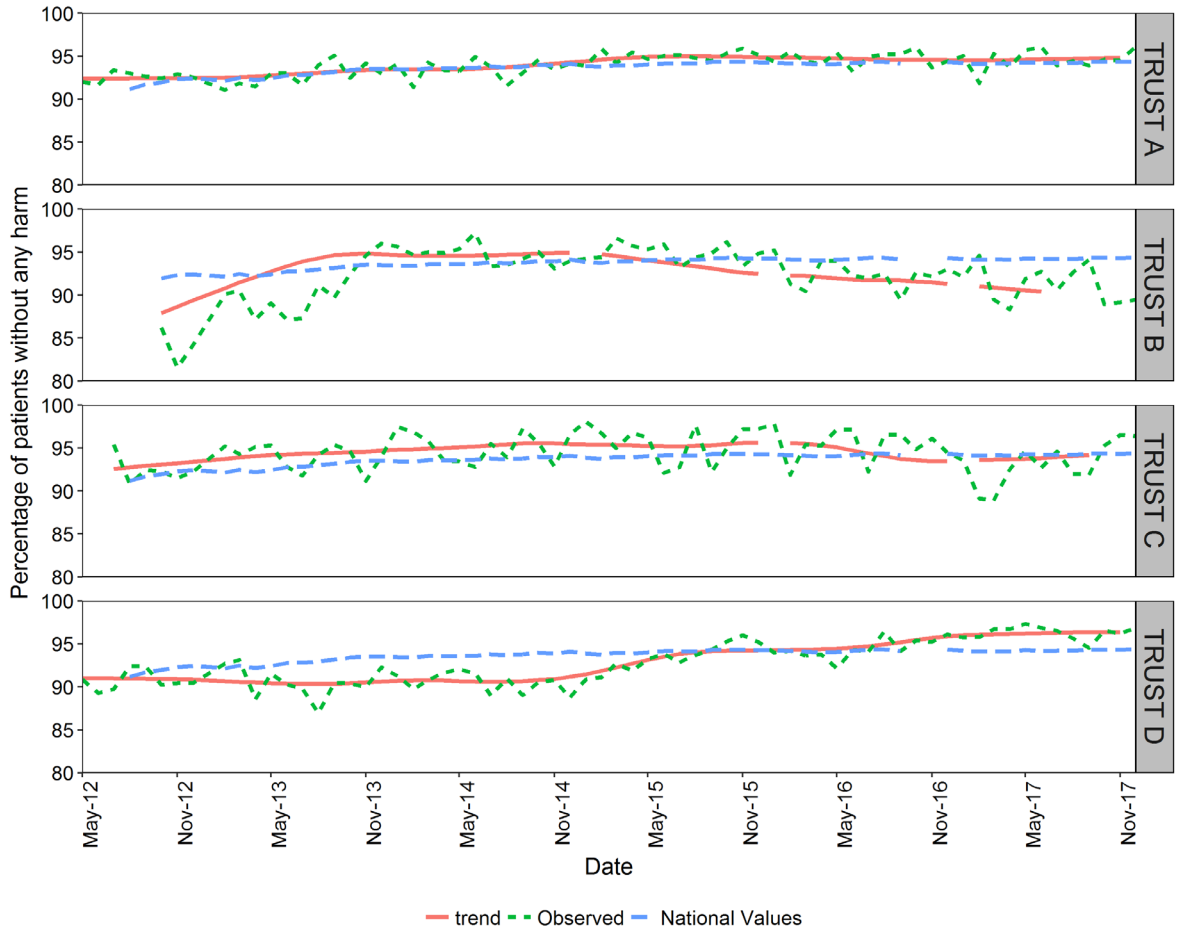


6.9 Indicators of nurse-sensitive outcomes

Figure 6.17 show trends in harm-free care at the case study hospitals, derived from the NHS Safety Thermometer (80). The four categories of harm included in the safety thermometer are: pressure ulcers; patient falls; urinary tract infections (UTI) in patients with catheters; assessment, prophylaxis or treatment for venous thromboembolism (VTE). The composite measure 'any harm' includes all pressure ulcers, falls with harm, UTIs, pulmonary embolism (PE), new deep vein thrombosis (DVT) and any other new VTE, while 'new harm' only includes new harms occurring during the patient's stay (in the case of pressure ulcers, those developing three or more days after the patient was admitted).[7]

7 Data are collected on a single day each month and include all patients in wards at individual trusts. National summary data are reported for each month and a range of routine data visualisation tools exist to examine the data at various levels of detail (https://www.safetythermometer.nhs.uk/) Historical data (pre-2017), available at patient-level, summarised and presented in this report were downloaded from NHS Digital, while current (2017) data were downloaded directly from the "Classic" area of the NHS Safety Thermometer website. The current values maybe subject to change, since data for the NHS Safety Thermometer are collected on a 13-month timeframe, with revision allowed anytime within the 13-month period from initial data collection.

Figure 6.17 Percentage of patients experiencing "harm-free" care (from NHS Safety Thermometer) (80,87)



The figure shows the raw percentage of patients without harm as a black, dashed line, with the national values (grey, dashed line) superimposed on each panel. The case study Trusts were broadly consistent with the national trends, with the trend in both any and new harms at Trust A very closely matching the national levels. Overall the case study Trusts tended to show high, and increasing proportions of patients experiencing harm-free care at the census points.

Trust B appears to show the largest deviations from the national trend although these differences are relatively small. There was an increase in the proportion of patients without harms from the beginning of the dataset (May 2012) up to April and May 2014 (from 86% to 95%). Over this period the Trust was below average for harm-free care, but improving from being around 5% below the national average to meeting (and at some points) exceeding the national average. From this point onwards until the end of 2016 the Trust maintained the percentage of patients without any harm around 95%, consistent with the national average. However, since then the proportion of without harm has fallen below the national average - to around 4% below national average.

Chapter 6 Summary

- Key changes to implementation at all four Trusts included the collection, monitoring, review and reporting of more data on staffing numbers and hours internally and externally with the introduction of similar integrated electronic systems.
- Approaches to collection and reporting of data was uniform across the Trusts including – six-monthly establishment reviews and reports (one Trust did reverse annual board reporting post NQB 2016), monthly reporting to board, wards, website and national data repository on planned versus actual nursing numbers and CHPPD.
- Trust activity had responded to NQB 2013 and 2017 policies, The Carter Report, Department of Health's Hard Truths and NICE 2014 guidelines (10,47,50,63,65). For example, the approaches to collection and reporting of data above, rosters planned 6-8 weeks in advance and the adoption of the Supervisory Ward Leader Model.
- Job roles and responsibilities at all Trusts had expanded to greater or lesser degrees in line with the Trusts' size to meet demand for an increase in monitoring, reviewing and reporting strategies as well as relevant training.
- Day to day responses to staff shortfall remained largely unchanged although using data on the day in order to inform these decisions was beginning to be used at one of the Trusts, and all the others expressed intent to do this in the future. Furthermore, daily staffing review meetings had changed to be site-wide with an expansion of different multidisciplinary roles involved.
- All Trusts' escalation procedures did change to include 24 hour bleep cover upward of Matron level to include the Safe Staffing Lead or Directors of Nursing during day time hours, with one Trust building in 24-hour escalation to Chief Nurse if required.
- Case study sites showed an overall increase in RNs and HCA FTE from 2012/2013.
- However, there was variation in the pattern of change between the four Trusts; in two, the increase in staff came after a period of decline, in one, the increase appeared to be part of a general trend of growth since 2009, in the other, there was a decrease to 2013 followed by an increase which then plateaued.
- Over the four Trusts, the level of unregistered support staff had grown at a faster rate than registered staff; the decline in skill mix was primarily in the Trusts who started with a higher skill mix.
- At a Trust level, there have been more modest increases in staffing relative to occupied beds, however the increase in staff per bed was not always reflected in nursing staff deployed on wards.
- Fill rates indicate persistent difficulty in achieving planned RN staffing levels.

7. Realist informed evaluation of policy implementation

The realist informed evaluation presented in this chapter is based on four case studies and aims to develop an explanatory theory of policy implementation that acknowledges the importance of context: what has worked, for whom, how and in what circumstances. We describe the processes of implementing safe staffing polices in four NHS acute general hospital Trusts in order to:

- investigate the context of the organisational response to safe staffing policies in four NHS organisations;
- identify and track safe staffing policy implementation mechanisms and processes within and across these organisations;
- determine what has shaped how safe staffing policy has been implemented (or not), paying particular attention to contextual factors;
- describe barriers to implementing guidance; and
- evaluate both the intended and unintended consequences of safe staffing policy implementation.

7.1 Approach

The case studies provide an opportunity to explore the consequences of safe staffing policy implementation in depth in order to identify transferable lessons for other NHS organisations. Using the principles of realist inquiry, our premise is that contextual conditions, including features of the NHS Trusts themselves, will have influenced how safe staffing policy has been implemented and the associated impacts of that implementation. Our aim is to describe the impacts that implementing safe staffing policy has had and identify the pathways to these impacts.

Pathways to impact, which can also be regarded as theories of change, are influenced by the inter-relationships between organisational context and the different types of responses across organisations. From a realist perspective, these responses are termed 'mechanisms', and reflect the changes in reasoning or resources of individuals within organisational systems that have occurred through their engagement in, or experience of, policy implementation. Using this framework, we can identify examples of 'what has worked' in securing positive changes to safe staffing and identify barriers and enablers.

Chapter 3 outlined the methods used for the realist informed evaluation. The achieved data collection sample is summarised in Table 7.1. Phase 1 included interviews with 13 nurse managers, including the safe staffing leads from the four Trusts, followed by workshops with 55 nursing participants (mainly Ward Sisters) to review and further develop the emerging policy implementation data. The Phase 2 workshop reviewed and further developed the emerging policy implementation themes as well as exploring what has worked in more detail. The sample of six nurse managers included the four lead nurses for workforce from each case, whose roles were very much at the forefront of safe staffing policy implementation from Ward to Board. Phase 3 was originally conceived to review the emerging policy implementation theories with a wider range of participants, such as staff nurses and support staff/HCAs, finance, HR and patient/public groups. However, only two interviews were completed, both in Case B. Despite repeated attempts to organise interviews with staff nurses and support staff, no other interviews were secured. The data drawn on here thus does not include the views of staff nurses and support staff, or others involved in safe staffing policy implementation, beyond those interviewed at Case B.

Interpretation of the findings emerging from the study benefited from engagement with a group of patients and members of the public (in a half day workshop – detailed in the appendix), and an engagement event held with a cross section of nurses at RCN Congress.

Table 7.1 Summary of realist informed evaluation sample by phase

	Phase 1 interviews & workshops	Phase 2 workshops	Phase 3 interviews
Case A	Interview – 3 nurse managers Workshop – 12 nurses (mainly ward managers)	3 nurse managers	No interviews completed
Case B	Interview – 3 nurse managers Workshop – 2 workshops with 30 nurses in total (mainly ward managers)	1 nurse manager	2 HR managers 1 Head of Patient Experience
Case C	Interview – 3 nurse managers Workshop – 1 workshop at rural site with 2 nurses (ward managers & Clinical Site Practitioner)	1 nurse manager	No interviews completed
Case D	Interview – 4 nurse managers Workshops – 2 workshops with 11 nurses in total (mainly ward managers)	1 nurse manager	No interviews completed

7.2 Overview of findings

Our theoretical starting point was the programme theory of 'balancing' developed in an evidence synthesis of NHS Managers' use of technology in workforce planning (Burton *et al*., 2018). Here, balancing referred to managers' cognitive and practical work associated with matching nurse staffing resources to organisational and patient requirements in real-time. Contingencies which made this balancing easier to achieve included: alignment of strategy around safe staffing; system integration; the triangulation of relevant data and knowledge; organisational learning, and personal support for managers. This research has increased the scope of this programme theory by examining the wider organisational responses to safe staffing policy implementation, and the pathways to these impacts, as outlined in Table 7.2.

Table 7.2 Successful policy implementation: pathways to impact

Contextual conditions	Mechanisms of action	Outcomes
Organisational histories around safe staffing, including engagement in research Value attached to professional judgement Integration of data around a 'whole' safe staffing system Cross-organisational goodwill and collegiality around nurse staffing Clear, transparent and equitable leadership around safe staffing Availability of training, ongoing support and resources that enable staff to make best use of available technologies	Consistency and clarity of policy and guidance 'heard' at a local level Change in discourse and organisational pace about staffing, from numbers to a more nuanced focus on quality and patient safety Nursing staff becoming 'system thinkers' Policy had provided more impetus for organisational attention to, and transparency around safe staffing, with the visibility of staffing from Board to Ward Provision of more and better data of factors associated within the workforce system Boundary spanning activity (across different stakeholder groups) around safe staffing technologies	Organisational priority attached to quality and safety as opposed to the financial bottom-line Attention to wider staffing issues (recruitment and retention / workforce re-design), and experimentation in the use of incentives Provided more data informed discussions and (difficult) decisions about safe staffing, and with greater impact Goodwill and greater opportunity to flex around safe staffing Unintended consequences for service users around transparency

Briefly, recommendations about safe staffing in the Francis Report and those from other sources (e.g. NICE, NQB, CQC etc.) have precipitated changes in organisational behaviour across the four hospital cases, particularly in relation to the transparency and visibility of the nurse staffing agenda. Local policy implementation was mediated by multiple factors, including organisational context and leadership, which are unique to NHS organisations themselves. Consequently, what was observed around safe nurse staffing within the four case study sites was the complexity of an emergent nurse staffing system. It is impossible to disentangle the linear causal consequences of policy implementation within each of the case study sites.

However, we have been able to demonstrate some impacts of, and influences on, policy implementation (described in 7.3 and 7.4) that span changes in organisational and professional thinking and behaviours about safe staffing. Here successful policy implementation is reflected in a narrative that has shifted away from the financial bottom-line, to one that melds data, information and professional judgement on patients' need and organisational resources around quality and patient safety. Policy has accelerated action on safe nurse staffing and increased its visibility and transparency within NHS organisations. It has provided nursing leaders and staff with policy levers to draw on in negotiating and experimenting around nurse staffing including with the tools, technologies and processes that characterise safe staffing work.

The pathways to these impacts are often hidden within the complexity of the nurse staffing systems and legacies of each case study site. However, our realist informed evaluation has given us the opportunity to disentangle, and check with stakeholders, some of the important means by which these impacts have been generated. As summarised in Table 7.2 below, contextual conditions have provided the foundations on which organisational and professional understandings of the policy context are continuously being constructed. These are explained in more detail, drawing on data, in the sections which follow this summary.

Policy has generated further changes or mechanisms of action which appear to characterise the nature of implementation and its outcomes, specifically the consistency of the policy messages within organisations, a focus on patient safety and care quality, a shift towards more whole systems-based thinking and approaches utilising better data and more opportunities for cross-organisational working on safe nurse staffing.

The increased 'Ward to Board' visibility of safe nurse staffing also appears to be an important consequence of the policy context, with patient safety becoming everyone's responsibility. The four cases highlighted a shift to a whole system approach to nurse staffing where local, regional and national parts of the system were working in greater synergy. This approach required teams, wards, departments and Trusts to work collegiately around safe staffing, which itself required transparent and equitable leadership.

Tools and technology, particularly when embedded within safe staffing strategies, were helping to ensure that relevant data were more accessible across hospitals and were used to support decisions and learning about safe nurse staffing. These systems and their many parts (e.g. operational, financial, professional etc.) should be integrated as much as possible around the safe staffing agenda. Many safe staffing technologies and their outputs successfully brought different organisational groups (e.g. finance and clinical staff) together around the safe staffing agenda, but more opportunities for training and support for in this area were required to support successful implementation. The safe staffing agenda has provided more opportunities for external networking and learning for nursing staff, with the potential for identifying and scaling-up good staffing practice. Coupled with this, we uncovered evidence of participants beginning to think in more systems-oriented ways around safe staffing.

The four cases also demonstrated that the professional judgement of nurses around staffing requirements and patient acuity remain key but remains an elusive concept within the context of policy and practice, with little evidence of its precision or the development of techniques to improve on this. For data on nursing staffing to represent meaningful information for managers for decision-making, this mediation through professional judgement appears to be key. In a wider context characterised in part by ongoing staff shortages into the foreseeable future, maintaining the goodwill of staff also remained vital to successful safe staffing policy implementation.

7.3 Impacts of policy implementation

Using Weiss's framework (88) policy implementation can have three types of impact: instrumental, symbolic, and cognitive. A summary of the impacts (or organisation responses) arising from implementing safe staffing policy is provided in Table 7.3, with the type of impact in the first column. Each of these is examined in greater detail in the rest of this section.

Table 7.3 Potential impacts of policy implementation identified in case studies

Impact Type	Description of impact of safe staffing policy
Instrumental impacts	→ Driver for safe staffing and accelerated action. → Rationale for difficult staffing-related decisions such as closing beds/changes to elective lists. → Trigger for developing new workforce tools, systems and management roles. → Prompt or enabler of workforce re-design.
Symbolic impacts	→ Creating change in discourse/language used. → Enabling data driven decision making around staffing (increasing legitimacy and influence, enabling action).
Cognitive impacts	→ Changing nature of management practice. → Changing staff thinking. → Organisational focus/priorities.

7.3.1 Changes to the language used to refer to staffing issues

Across the four cases the observed language around safe staffing centred on ensuring the right staffing was in place to provide safe, quality patient care, whilst making sure staff were safe to deliver this care. Senior nurses emphasised that delivering safe staffing involved consideration of both RNs and support staff, and the wider multidisciplinary team. Many considered safe staffing policies to have been a positive influence despite being driven to some degree by high-profile crises in patient safety and public confidence in service delivery:

> *"I think a lot of it [driver towards safe staffing] came from... [Mid-Staffordshire NHS Foundation Trust] and looking at staffing, and how we needed a system that can kind of help with the rostering of staffing so that you've got the right skill mix, safe care etc..." (B3 interview – p7).*

Some were not aware that the events at Mid-Staffordshire NHS Foundation Trust (hereafter Mid Staffs) had been a key driver in the development of safe staffing policy; they nonetheless felt that it would be motivating for staff to understand the context that led to the policies. (29/9/17 B workshop). Others referred to elements of national context, and the extent to which safe staffing policy connected with local concerns:

> *"I think some [changes] obviously came from Mid Staffs and the Keogh report and the Lord Carter Review and I think some of it came out nationally, but I think also, even locally, that sort of acknowledges, sort of, understanding if you like that there were issues and what were we going to do about it?" (D1 interview – p7).*

The narrative around patient safety and service quality was in contrast to financial targets and what some described as the [staffing by] 'numbers game'. For example, one Case A nurse manager reflected that the Trust's change from a 'targets and finance' driven culture to one focusing on safety and quality pre-dated the Mid Staffs crisis. They noted however that the Francis Report had made staffing related changes to improve safety easier to implement (A1 interview). Participants in Case C particularly welcomed the emphasis on greater transparency and accountability, and one nurse manager there commented that the Executive Director of Nursing was clear they must comply with national policy (C1 interview). Case D participants identified other recent scandals (e.g. Winterbourne View) before commenting that, although their hospital was different (e.g. they felt staff were listened to and supported), such events could potentially happen to anyone.

The degree to which this prevailing narrative demonstrated a significant shift in thinking around other aspects of safe staffing was limited. Changes were evident in participants' accounts about the use of data, although this was often couched in terms of using 'evidence', for example:

> *"[before eRoster/SNCT] the ward managers would... [meet] with their matrons to discuss generally what patients we'd got on the ward, and then a decision [about staffing adequacy] would be made. But it was not necessarily based on what could be referenced as the best evidence... so this was an opportunity to actually provide proper evidence for that... it's not necessarily a huge amount different to what we were doing." (D1 interview – pp4-5).*

This participant went on to highlight the importance of 'evidence' not just in relation to specific decisions about staffing, but also in how staffing issues were managed at a system level within an organisation.

7.3.2 Increasing organisational attention and visibility of safe staffing

When asked to identify the main drivers of safe staffing, many across the four Trusts described how the Francis Report helped raise the profile of safe staffing at their hospital. For example, at Case B this included the need for systems that monitor the wards and for Ward to Board accountability, one nurse manager reflecting that Case B had been a 'little behind' with its nurse staffing at the time [of the publication of the Public Inquiry report] due in part to financial pressures, though this situation had been turned around in the last few years (B2 interview – p6).

Organisational attention generally referred to the 'visibility' of safe staffing on the organisational agenda, for example in the notion of staffing issues being evident across all levels and layers of the organisation:

> *"...the first really key people [for safe staffing] are the ward leaders or equivalent...And then that works its way up in a thread that runs right the way through to the Board, so it's that whole Ward to Board thing, so in our organisation it would be those ward leaders, supported by their matrons, supported by their divisional head of nursing, ... working with the Director of Nursing... who will then link with the Director of Finance, our HR lead." (A1 interview – p3).*

Visibility of safe staffing at Board level was evident, the following illustrating what generally happened at each hospital:

> *"...so we collate each ward individually, looking at what their Care Hours Per [Patient] Day are, required and actual, what their rostered hours are, whether they've got their breaks and stuff and then what the actual acuity is, that information, so we do that each month. The planned and actual hours reporting happens each month and that goes to the Chief Nurse, who also produces a paper to the Board, so that happens as well." (C3 interview – p6).*

Increased organisational visibility was facilitated by developments in tools and technology, particularly those that have made safe staffing data more available within organisations:

> *"Certainly for us here, [the main drivers of safe staffing are] the need to make it visible, ... When it's all paper rosters you don't know financially... prior to us going electronic you wouldn't know if we were within our establishment or not..." (C3 interview – p4).*

7.3.3 Using data as ammunition to legitimise investment in nurse staffing

Before safe staffing policies were introduced, nurse managers across the four cases referred to undertaking rostering manually using large spreadsheet, and based on staff per bed ratios and expert opinion. The context was also different, with (in their view) less pressure on staffing compared to today. Recent developments in tools and technology have enabled nursing workforce data to be integrated with patient data and other systems (e.g. payroll, bank/agency) to create a powerful tool (or 'one stop shop' A1 interview) aligned to national guidance to inform safe staffing decisions across the whole hospital. For nurse managers this has enabled exposition of evidence 'behind the numbers' and a far more powerful argument, particularly for managers, for safe staffing. As one Case C nurse manager put it, these developments in tools and technology helped bridge the gap between health care professionals and managers towards better collaboration and better outcomes (C2 interview)). For one Case D nurse manager this was also about changing attitudes from 'it's really busy, we can't manage' to ones that challenged events, for example 'is this reasonable, do you think this is justified?' and better supported staffing decision making (D3 interview – p5). However, caution was also expressed that professional judgement remained an essential element.

Clinical leaders were also able to see the wider organisational benefits from better use of data:

> *"...we were actually able to use that evidence to take to Board level to fight our corner and get our staffing improved. ... we were able to prove that's what we needed to do" (D1 interview – p5).*

Senior nurses and ward managers approaching safe staffing work within their wider professional roles were also quick to point out that these data formed only part of the safe nurse staffing 'jigsaw'. The extent to which the tools represented professional judgement about needs, or the work of interpreting staffing-related data in the context of other issues such as ward layout, knowledge of skill mix and patients, was limited. As such, the importance of clinical, as opposed to non-clinical judgement, was perceived to be important.

The combination of policy, visibility and data seems to have helped secure investment in nurse staffing. In Case A, a paper on staffing written just before a CQC inspection was helpful in arguing for investment in further staffing resources, although this appears to be in part related to the supportive context in which the nursing service was valued:

> *"...we were assessed fully in... 2014 [by the CQC] and we had implemented our safe staffing and I gave them the paper that we'd written and it went to... Board, Divisional Board... We've got a really good culture here of supporting our nursing workforce and valuing them and so we actually secured some money on the back of that paper for one of my areas, so that was a real success." (A3 interview – p4).*

This investment was mirrored in Case D, where they had "*managed to secure about a £1 million investment into nursing [from the Board] using the information in the [eRoster/SNCT] tool and also RCN guidelines".* (D2 interview).

Therefore in some ways tools and technologies were making data on safe staffing issues more explicit and helping to build bridges between the worlds of practice, clinical and financial management.

7.3.4 Data providing a rationale for difficult decisions

In addition to informing arguments for increasing nurse staffing resources, tools and data provided a transparent rationale for difficult management decisions. If staff shortages could not be resolved internally using existing resources, shifts were usually cascaded to the bank then lower and higher cost agencies. Nurse managers across the four cases were trying to avoid higher cost agencies but their role remained vital, particularly to cover more specialist areas (e.g. critical care) and to get the skills needed by specialist hospital Case C. Requests for the authorisation of staff from bank and/or agency were made via senior nurse managers, usually Matrons (lower-cost) and the Directors of Nursing (higher-cost) during week days and out of hours via the duty Matron/management team. As a last resort when other options had not worked to restore safe staffing, three case hospitals (A, C, D) reported temporarily closing elective beds for safety reasons. The scope of these decisions is exemplified in the following excerpt:

> *"...on an elective ward recently we didn't have the staffing numbers... I said it wasn't safe so my [clinical director] and my chief of service supported me, and we cancelled electives that day... It's a decision I wouldn't take lightly. This is the first year I've ever done it [in 40 years of nursing], ever... we cancelled elective because of the theatre [nursing] staff as well.". (D4 interview).*

Such action required the approval of senior managers and major planning for the inevitable knock on effects (e.g. theatre cancellation, transfer of patients, implications for critical care). However temporary closures for safe staffing reasons were not common and considered a last resort.

7.3.5 Policy as a driver for accelerated action around safe staffing

All four case hospitals had well-established staffing strategies but the Francis Report appears to have helped quicken the pace of change. For example, at Case B this included the need for systems that monitor the wards and for Ward to Board accountability, one nurse manager reflecting

> *"...that we were perhaps a little bit behind on [safe staffing at the time of the Public Inquiry]. I think at the time we should have been doing it. Everybody else seemed to have done it and we didn't. I think there's certainly over the last sort of 3 or 4 years been an increased recognition about the impact on quality and safety from the nurses, from less than acceptable nursing level (B2 interview).*

Similarly, one Case A nurse manager reflected that the Francis Report had made safe staffing related changes easier to implement because it has provided a 'sit and wake up moment' particularly in organisations where 'targets and finance' had been the main drivers (A1 interview). There was also a perception that the Francis Inquires had left a positive legacy in making "'*things more transparent about data*" (C1 manager), and a focus on patient centred approaches to care (Case B's Head of Patient Experience).

7.3.6 New staffing tools changing the nature of management practice

Reference to tools and technology largely focused on the combined eRostering and SNCT being used across the four Trusts, though other software sources (e.g. incident and quality reports) were referred to as important for monitoring safe staffing and raising issues. Views on these were mixed but the data suggested nurses were already thinking in more data-driven and systems ways than in the past. From the start nurse managers reflected that despite 'teething' problems the gradual implementation of the software had been relatively smooth so far, a process helped by the past experience of all four in research related to use of SNCT. There was a perception amongst some staff (potentially reinforced when 'nothing happens' after escalation) that safe staffing was still more about data collection than actually providing 'safe' staffing, the role of the safe staffing lead nurses being critical here in making the transition from data collection as part of a research project to use of systems as part of daily practice. Whilst many felt these developments were useful in providing better data on nurse staffing than ever before, across the four cases there was a recognition that it was still early days in the development of safe staffing tools and technologies.

For nurse managers across the four cases the new tools had been instrumental in creating producing more powerful arguments, particularly for managers, for safe staffing. For one Case D nurse manager these developments were also about changing attitudes to support staffing decision making (D3 interview), an issue also exemplified in Case C:

> *"...from my perspective, because I've looked at rostering for a long time, [the staffing system] makes me look at it differently... I've had examples where a ward has got their normal number of nurses working today, you know they're experienced nurses, so I would normally look at that and say they'll be fine". They might tell me they'll be busy but they'll just get on with it. I'll have another ward that is missing a couple of nurses, you know a nurse shortage, where I will be focusing on putting the staff on that ward. Now using [the system] my priority might be the ward that's fully staffed because their priority might be that, actually they need help as a priority over the other ward. So it's given me a different perspective that I've not had before which has been, I think, really useful." (C3 interview – p3).*

> *However there was also a recognition that more could be achieved towards using the new tools to better forecast future staffing requirements and scale up learning across organisations.*

> *Specific problems with the new tools were identified and are explored in section 7.3.5 but overall participants considered that they had helped towards enabling a more whole systems approach to safe staffing, with better alignment between organisational strategies, that had not been in place previously (examined 7.4.3).*

7.3.7 Safe staffing policies: a prompt for workforce redesign

The contexts of safe staffing and wider staffing shortages were also influencing wider workforce reviews. For example at Cases A and D the roles of clinical nurse specialists and advanced nurse practitioners were under review during the data collection period, particularly given their positive and negative impacts on the nursing pool and ongoing shortages of doctors:

> *... back 20 years ago, we had only one clinical nurse specialist, now we have 200 or so, I don't know the exact number but it's a vast amount and when the business case goes through that has a clinical nurse specialist ... they'll be coming from our pool of nurses on the ward so we're having a stricter look at that." (Case A nurse Manager - Phase 2 p4).*

The on-going development of new Nurse Associate roles in Cases B and D was also partly in response to on-going shortages and wider safe staffing related issues.

Data from safe staffing tools and technologies were more directly linked to workforce redesign when there were concerns about skill-mix. There were particular concerns about "making sure that we don't water down the skill mix" *particularly in relation to the use of backfilling gaps with non-qualified staff:*

> *It's something that came up from the Mid Staffs and the Keogh... it wasn't just about numbers, it was also about skill mix, if we can maintain that as well." (D1 interview).*

7.4 Influences on policy implementation

This section describes and explains the four main influences on policy implementation identified from the case study data. It begins by exploring the safe staffing policy message itself before considering how organisations are experimenting with it and thereby learning to deliver safe staffing. The section ends by revisiting the emerging role of tools and technologies to support staff in decision making and their limitations.

7.4.1 The clarity of the policy message and its interpretation within organisations

The case studies reveal a complex context meaning that policy messages have at times been interpreted and prioritised differently in the four case hospitals. The prevailing understanding across all was the importance of safe (or safer) staffing, but this section explores some of the unintended consequences of the wider policy context, particularly tensions around what some described as a 'numbers' approach.

To begin with the policy message itself, participants at Case A were noticeably more critical of what 'safe staffing' actually meant. One nurse manager reflected that determining what was 'right' or 'optimum' staffing in some cases was a 'dark art' and influenced a lot by context, such that a conversation with a staff nurse about safe staffing might be very different to the hospital Board (A1 interview – p3). Another preferred the term 'robust model' for safe staffing (A3 interview – p2). Some Case A participants also questioned what 'safe' meant and voiced their dislike of the term 'safe staffing' questioning whether the focus on 'safe' meant staffing to a level that means staff can just about as opposed to staffing to an optimum level for provision of care. Further, some participants questioned who was being re-assured by the term 'safe.' They recounted how they sometimes felt pressured by managers during staffing review meetings to say 'it's safe', even when they did not feel it was. Concern was expressed that the term 'safe staffing' did not send out the right message, some suggested using different terms like 'managing' staffing.

NICE safe staffing guidance was seen as an important driver of the safe staffing policy message, particularly in developing strategies and supporting the use of tools, such as the SNCT. NQB recommendations were also viewed as important in supporting Trusts towards safe staffing, particularly their role in securing Ward to Board accountability through strategies like the monthly safe staffing reporting, the establishment review and others. One Case D nurse manager felt NQB guidance had been pivotal in changing the culture of the Finance Department towards a more balanced and aligned approach to staffing and had helped to fast-track improvements in related nurse staffing data. The 'right people/right skills/right place/ right time' phrase of the NQB 2013 guidance was commonly used by participants across the four cases. The post-Francis Reports by Keogh, Berwick and Carter were also mentioned by participants as having influenced safe staffing improvements; Cases C and D specifically singling out the Carter review as helping Trusts to improve approaches to looking at costs of staffing and variation.

On the other hand, some participants were also critical of these policy developments. One Case A nurse manager reflected that national policy, particularly NICE and NQB, had helped in areas like self-assessment and benchmarking and supported staff to build a convincing case for action (A1 interview – p3). However, she feared that some national safe staffing guidance had 'hooked' a generation of nurses into being overly focused on numbers (e.g. *"I should have 6 on and I've got 5 on"*) at the expense of taking a broader professional view about patient safety and the nurse staffing needed to achieve it (A1 interview – p8). A Case C nurse manager commented on the mismatch between staffing policy, evidence and the wider realities on the wards. In particular. that whilst guidance on minimum staffing ratios (pre-dating Francis) had been effective in some specialities (e.g. intensive care), and the 1:8 ratio referred to in NICE guidance was useful – matching these ratios to wards and shifts remained difficult (C1 interview – p2). Some Case A participants saw safe staffing policy and guidance as *"outsiders telling us what to do"*; they expressed their motivation for ensuring staffing levels were safe as being integral to their role as a nurse, with their own have hearts and minds and own share in the core values of their hospital, and not simply a response because *"a policy came in"*. (30th Oct workshop – p2).

Nurse Managers from the four case hospitals also expressed concerns that a 'numbers culture' towards safe staffing (which focused on achieving set numbers, rather than considering the full meaning of safe staffing) existed, particularly amongst more junior nurses. In this study we were unsuccessful in attempts to secure Band 5 nurses as interviewees, but some managers expressed the view that junior nurses were sometimes overly focused on the planned numbers of staff, as opposed to assessing if staffing was sufficient considering the acuity of their patients, and this could potentially lead to

unnecessary escalations. The nurse managers cited variety of explanatory factors: inexperience of junior staff (e.g. ability to assess acuity) and wider issues relating to ward level skill mix and increasingly stressful shifts. Nurse managers across the four cases reported that in recent years the nurse workforce had changed such that junior nurses were holding increased levels of responsibility, with far less breadth of knowledge and experience than in the past.

> *"We're almost missing the middle bit, because we've got people like me who are right up there, getting old and thinking about retiring in the next few years potentially because I still have that option, and then you've got your really junior, very young" (Case D delegate - Phase 2 workshop pp3-4)*

A participant at Case B felt safe staffing decision making was occasionally undermined rather than supported, by the 'board holders' and (out of hours) clinical management teams with responsibility for transferring staff. Some decisions were described as being made by looking at planned 'numbers' without considering patient acuity, and the way different wards work. Moving staff between wards to ensure the 'numbers were right' without considering full range of factors could potentially make staffing pressures worse not better. Further, one nurse there commented that having Board Holders had removed people's ability to think for themselves.

The CQC was another important influence on safe staffing but participants had mixed views about its impacts, including a fear that regulation sometimes reinforced the 'numbers culture'. Across the four cases participants agreed that its regulatory work ensured transparency and helped make improvements to staffing and other areas that might otherwise not have happened. But in Case A, one nurse manager reflected that CQC focused on evidence that the correct procedures and systems were in place, but that this alone does not guarantee safe staffing is achieved. On its last visit the CQC recognised the Trust were doing everything it could in terms of safe staffing, however high vacancy levels nonetheless meant achieving safe staffing was a daily challenge (A1 interview – p7). A nurse manager at Case C reflected that the CQC's work was more a contributing factor to safe staffing rather than a driver (C1 interview – p5) and other Case C participants added that the CQC should also focus more on areas not yet covered by national safe staffing policy (e.g. paediatrics, out-patients) and the local context, particularly their inherently unstable workforce and the reasons for this (e.g. high cost of living).

One Case B nurse manager believed the CQC's approach was sometimes counterproductive and 'battered staff on the head'. It was her hope that future interventions could be embedded in every day practice to support service delivery (B2 interview – p6). Feedback from a Case A nurse manager referred to a more constructive approach, describing how a presentation to the CQC of their research on safe staffing improvements during an inspection had eventually led, via the Board, to further funding for her service. One nurse manager felt that CQC's assessment of staffing was not sufficiently consistent or evidence based, and was concerned that a tendency for CQC to 'throw out' ratios (e.g. 8 patients: 1RN day) suggested a simplistic numbers approach, without insight into acuity and how the SNCT works.

Participants from Case D were concerned about the knock-on effects of compliance with CQC enforcement notices. Following a recent inspection, it was 'agreed' that most wards could work one member of staff under their establishment, but vacancies had increased and now some wards were now working two or three under, putting even more pressure on safe staffing compensatory strategies, such as the use of more agency support staff/HCAs. Further, maintaining compliance with CQC notices stipulating minimum staffing on certain wards was reported as causing anger and frustration on other wards who were losing their staff each day to provide cover. One nurse likened this to a 'them and us' situation; others expressed concern that this undermined patient safety and, in these circumstances, they could not see the point of using the SNCT. They also feared that complaints would increase and the 'damage limitation' response from senior managers could result in a flood of unnecessary initiatives and training instead of a focus on 'getting the basics right'.

Lastly, across the four cases there was concern about communicating safe staffing to patients, families and carers. Balancing the need to be open with patients about staffing levels against not worrying them unnecessarily was a recurring theme across the four cases. Whilst many welcomed greater transparency of safe staffing, some felt much more thought was needed. When asked how they are informing patients and their families/carers about safe nurse staffing, all described the boards around the entrance to every ward that include the planned and actual numbers of nurses on duty, sometimes alongside a red/amber/green rating, plus other information (e.g. details of the nurse/midwife in charge). Some participants thought it was unprofessional to tell patients about staff shortages but accepted their duty of candour: they explained that if patients ask, they apologise and say they're short staffed. One Case C nurse manager had also heard anecdotally that the display boards were unpopular with Ward Sisters because they can alarm people: *"oh God it's red and my relative is being cared for on a red day, how bad is it gonna be, are they at risk of bad practice and stuff?"* (C1 imitating patient response in interview – p8).

Similarly, Case B's Head of Patient Experience commented:

> *"...we spoke about the staffing levels and writing numbers on boards on things and, to me I'm not sure patients get it... it's this issue isn't it that we talk about safe staffing levels, but actually patients don't want to think that you're just about safe they want more than that, and I think that always worries me, is that we talk, and we think it's acceptable to talk in a way that says 'ah, but our staffing levels were safe' and I don't think that that term is right because it doesn't mean anything to the public, it doesn't mean anything to staff sometimes I think, but it certainly doesn't mean anything to the public, and their expectation is that of course care is safe, and of course care is evidence-based, NICE Guidance, all the rest of it and I think patients feel that that's a given. Unless they happen to have been influenced by Francis or in a personal way, and they kind of get it that sometimes care isn't safe. But most patients come I would say... 80 percent of patients come in assuming their care is safe. I don't know that is helpful when you're trying to explain to patients about how you assess staffing levels" (Case B Head of Patient Experience – p4).*

Further, the perception amongst patients that nurses were understaffed and overworked (e.g. *"you look busy"*) was another complicating factor, sometimes compounded by the media. Case D participants reported that maintaining their professionalism and behaving *"as if it's all fine"*, using your 'Poker face' as one described it, was becoming increasingly difficult. Further to their wider concerns about communicating the 'negative' language of safe staffing by numbers to patients and the public, some participants at cases A, B and C suggested alternatives, for example some form of assurance or reassurance that the staffing shortfall is recognised and has been escalated as per agreed organisational protocols in order to provide safe staffing:

> *"I think talking in broader statements that this is how we calculate it, based on this evidence, and that we're confident that if we don't have enough staff then this is what we're going to do. And if people want more information then we can invite them to ask for information but most people would be satisfied with that sort of comment, without then getting into detail of numbers... I was just thinking through how, if I was a patient... well what would reassure my Mum, say... I think it would reassure me if I was confident in the processes... just to have glib statements that may be misinterpreted by the public, may not be that helpful. That's probably not the right thing to say" (Case B, p4).*

The head of Patient Experience at one Trust added that such systems of assurance/reassurance to communicate safe staffing should be tested on a diverse group of patients (e.g. not just the white middle class) and that staff performance in this areas would also need to be managed.

7.4.2 Organisational 'experimentation' and learning to deliver safe staffing

The case studies show that there was a degree of variation in how NHS organisations developed and adopted a learning approach to policy implementation. Learning was associated with experimentation with, and evaluation of, different initiatives to drive implementation work and the development of networks that included engagement in safe staffing research. Experimentation with safe staffing policy implementation took many different forms across the four case hospitals. In section 7.3.3 below the whole systems approach to safe staffing and its many strategies could be viewed as one large and complex 'experiment' to plan, implement, monitor and review safe nurse staffing. But within this, many notable smaller initiatives related to safe staffing were taking place.

In the priority area of recruitment and retention the four case hospitals were considering or trialling incentives schemes that included golden hellos (e.g. £2000 for Band 5 nurse at Case C) and additional payments (e.g. £50 per shift at Case B) to bank staff for covering harder to fill shifts. Internal networks were also becoming formed across the case hospitals towards improving recruitment and retention. These are covered in more detail in section 7.3.3.4 below but included activities to better support new and existing staff:

> *"I've set up a divisional recruitment and retention group... we look at all the different ways and how people are recruiting staff... it's about valuing the nurses and making sure that they've got access to education which is also another problem because the money is being, as we know is being pulled from*

the education budgets across the country at the moment. So we're looking at... how we try and support our workforce in retaining them around educating them. You probably know about Gen[eration] X, Gen Y and Gen Z and you know, they are a different breed the Gen Z and we've got to look at a way of working with them to make sure that we can engage with them to the point where they feel valued and wanted and that they have got a contribution to make." (A3 interview – p8).

> *"... I'm working with [HR manager] at the moment, we've been doing Listening In Action groups with the ward managers and matrons in medicine, because medicine has quite a big discrepancy in their numbers at the moment, so we're look at what can we do, how can we make medicine more attractive, so there's an awful lot of work going on around recruitment and retention generally at the moment and specifically in the more difficult to recruit areas shall we say." (D1 interview – p11)*

External networks were also becoming well established and helping to improve the delivery of safe staffing. For example, HR Managers at Case B were networking with other local Trusts to improve recruitment and retention. This included one Trust that had created its own agency, partly using international nurses, and was beginning to undercut more established commercial agencies (Case B HR interview – p5).

The lead nurses for safe staffing at the four case hospitals also worked with the other Trusts on two safe staffing related research projects that had themselves become an important driver of organisational safe staffing improvements. Beyond the technical advantages regarding systems, tools and technologies, nurse managers also benefited from the opportunities to share knowledge, experience and advice with study colleagues in similar situations. Another benefit was greater organisational awareness of the caution needed when interpreting the outputs from the SNCT:

> *"I think there needs to be caution applied, so when [the Safer Nursing Care Tool] first came out there were some senior members of staff who, even up to Board level, thought you could use it immediately to tell you whether you could transport staff around the hospital, all that kind of stuff. We have argued really strongly that we need the data, we need the evidence first as to why we're doing this study... we need the evidence before we run with a tool that actually has very little evidence associated with it. So that's one of the things that we've had to argue quite strongly at a senior level so people don't just take the [SNCT] without any critique at all." (C1 interview – pp4-5).*

However, one less welcome legacy of long term research involvement identified by participants across the four cases was a perception amongst some nurses that safe staffing, particularly data entry into the Safer Nursing Care Tool, continued to be more about research than actually providing 'safe' staffing. Such attitudes were potentially reinforced if staffing levels are not improved despite the data or attempts to escalate are unsuccessful (see section 7.3.3.1 below), but the role of the lead nurses for safe staffing was critical here in making the transition from use of SNCT as part of a 'research project' to everyday practice.

National professional networks were also an important source of information and guidance on safe staffing for nurse managers, particularly the working groups of the Association of UK University Hospitals (AUKUH), the Royal Colleges and other specialist networks. Conferences run by safe staffing related software companies also provided important opportunities to compare experiences in the use of eRoster/SNCT and wider safe staffing issues. Other smaller networks were also engaged in safe staffing related activities. For example, Case B's eRostering team worked regularly with other Trusts, particularly comparing safe staffing data, whilst some of its nurses had ongoing relationships with neighbouring Trusts involved in developing services that included safe staffing related issues. Similarly, one nurse manager was participating in a small research project with two other NHS England Hospital Trusts that was exploring more flexible nurse rostering options, whilst at another Trust a nurse manager was four years into a PhD related to safe staffing. However, at one Trust nurse managers highlighted the potential challenges in data sharing between Trusts; a clinical services review to become a 'preferred provider' at one Trust placed it in competition with neighbouring Trusts.

7.4.3 Access to tools and use of technologies to support safe staffing

Policy implementation is clearly evident from the proliferation of tools and technologies to support safe staffing work, particularly eRoster and the Safer Nursing Care Tool. However, the data demonstrated many barriers to the use of tools, including problems with information technology capacity and capability across the nursing workforce. Here positive

policy implementation was associated with using the tools to collect the right data and aligning them with strategies in the whole system, including processes for the escalation and resolution of staffing problems. Participants expressed some concerns that a lack of tool use (e.g. gaps in data entry) could in itself be a signal of staffing problems, requiring some degree of sensitivity in managing organisational compliance.

Training for staff and access to operational support were important supports for implementation. All four cases reported regular (e.g. monthly, quarterly) safe staffing meetings and ongoing training with ward staff to identify problems and support them with tools and technology, though participants at three cases voiced a desire for more training and support. At Case D roster clinics were an important part of the safe staffing process and began in 2015 following publication of Lord Carter's Review, but the safe staffing lead nurse admitted they remained a work in progress and were 'hated' by some ward staff (D2 interview – p4). Case D participants confirmed that they felt challenged, not supported, in roster clinics and though this was good in some ways they thought the process remained top down and that they were 'on trial' and 'had to prove everything' (Phase 1 workshop - p10). Others at Case D thought rostering lacked flexibility, particularly around childcare commitments, whilst some Ward Sisters felt undermined by a loss of rostering responsibility. For example, some questioned why they had to justify their annual leave, whilst others did not like justifying their rostering decisions to a nurse manager from outside their Care Group. That said, Case D participants also agreed that rostering was not yet working as it should be and that the clinics were important, particularly in the management of annual leave (a major contributor to staff 'shortages') and the use of temporary bank/agency staff.

Case A participants were working with the workforce team and others (e.g. IT Department) to improve eRoster/SNCT and other systems, but some also had concerns about data capture. Some also questioned what constituted a 'red flag' event and how these should be measured now and in the future, and were working to resolve this in safe staffing meetings and training. For example, one data collection workshop ended with a short briefing from the eRoster team on what constitutes a 'red flag' (as per NICE guidelines) and how to manage them using eRoster/SNCT. This also emphasised the need for a supporting (professional judgement) narrative on actions taken and ended with the team commenting that they don't want to be seen as the 'eRostering police' (30th October workshop - p4). Further, as Case D had done they were in the process of establishing a Trust wide rostering group to work with ward leaders and others towards improving rostering practice.

In addition to capability building around safe staffing tools and technologies, ensuring that the data generated by them were embedded within the strategies in the whole system also influenced the effectiveness of safe staffing work. As reviewed above, across the four cases the detection of potentially unsafe staffing first led to the internal and later external review and escalation of the problem and might involve contacting others for advice or support (e.g. Matron or the 'out of hours' team) if necessary. Alongside the many strategies in Table 7.3 mobile phone technology helped here, with participants across the four cases using group emails/texts/*WhatsApp* to make immediate contact with colleagues. Further all four cases, particularly Case C, were beginning to use eRoster/SNCT data to inform daily safe staffing related meetings and were planning to use tools and technologies in real time and more proactively in the future.

7.4.4 Credible and reliable data, as close to decision-making as possible

The work of safe staffing has changed as a result of policy implementation, drawing on different combinations of quantitative (e.g. human resources and service demand) and qualitative (e.g. professional judgement) data. Positive policy implementation was associated with perceptions that credible and reliable data were being used and integrated appropriately to provide a whole systems picture of safe staffing, increasingly in real-time. The proliferation of data more generally on related issues (e.g. patient acuity and risk) was also seen as particularly helpful when it could be integrated within safe staffing practice. However, it was also early days and staff identified specific weaknesses in safe staffing data and the absence of data from patients, families and carers.

Participants across the four case hospitals partly associated safe staffing policy implementation with the creation of data that was better than ever before, but they also recognised that it was still early days in the development of tools and technologies. One Case B nurse likened the process to learning to ride a bike and still using stabilisers (29th Sept workshop – p2).

However, the credibility of data, and that data were as close to practice and time as possible, were felt to be key. Within the context of a transition from safe staffing tools and technologies as a research study in a few wards to their roll out across the four case hospitals, there was greater buy-in from staff when the data were seen to reflect the situation on their wards:

> *"I think the biggest difference from the [pilot study] because the audit was done at 3'o'clock in the afternoon, Monday to Friday for a couple of weeks, twice a year, and not necessarily at the busiest period... I think staff didn't feel that it was, that there was any point to it, they did think it was a paper exercise... the SNCT, because it's seven days a week, it includes weekends, bank holidays, night shifts, they feel that it really, hopefully, gives a better, truer reflection of the need to be flexible, and how things can change quite quickly, So, I think that's why you get more staff buy-in if they can see a point to it" (D1 interview).*

These developments were supported by an increasingly IT literate workforce, the growing availability of electronic tablets on wards and regular safe staffing meetings, training and support sessions for ward staff across the four case hospitals. The credibility of safe staffing data was felt to be enhanced where, in addition to the triangulation with professional judgement described earlier, there was an opportunity to integrate other clinical and service-related data. Participants appreciated the increasingly whole systems nature of the data available at ward level, including the integration of eRoster/SNCT tools with Finance and bank/agency systems for example:

> *"We did have systems that didn't talk to each other, but we moved to one encompassing module a couple of years ago and it's made a big difference. We used to have a separate bank system, so the bank staff you had to put on that system, so there was no linking, well I put that shift out to bank and my establishment, for the budget", the two didn't talk. A couple of years ago we moved to [eRoster/SNCT] so everything is now on the same system... so it gives us a good picture" (Case C delegate – Phase 2 workshop).*

However, during data collection acute case hospitals A and D also reported some problems integrating eRoster/SNCT to other systems (e.g. bank shifts) such that payments to temporary staff were being delayed and was influencing their retention.

New data like Care Hours Per Patient Day (CHPPD) was also creating powerful new evidence linking staffing to patient needs. For example, one Case A nurse manager commented that CHPPD data had its own limitations but had already helped secure more equal funding for services than in past (A1 interview – p8). In the future participants also planned to use safe staffing tools and technologies more proactively and in real time and, as mentioned above, this was beginning to happen during daily ward level safe staffing meetings, particularly at Case C, but in the longer term participants also aspired to create models for wards using 'live' data, monitored continuously and transferable to others (e.g. other hospitals, GPs).

However, participants also raised many concerns about the credibility and reliability of safe staffing data and their use from Ward to Board. Despite constant progress in the use of eRoster/SNCT data, they were still mainly used in a reactive way (e.g. staffing trends for monthly Board reporting) and for planning purposes (e.g. establishment reviews). Across the four cases nurse managers recognised that tasks like data entry put considerable pressure on nurses when they want them caring for patients, but they also argued that completion will improve safe staffing. Participants also agreed in theory but some explained that they might not get near a computer all day, let alone have time for data entry. They were well aware of the implications of this but getting the 'balance' right between data entry and all their other tasks was difficult, and for some there simply was no balance; the safety of their patients and colleagues was the priority. Indeed, one (anonymous) Ward Sister reflected that after a bad week with no safe staffing data entered *"...you just get bollocked, not asked whether you've had a bad week"*. Others commented that safe staffing was also undermined when data were entered but nothing happens and 'unsafe' staffing (in their opinion) continues.

Some participants remained sceptical of safe staffing tools and technology and their criticisms included the view that safe staffing tools and technologies created unrealistic expectations. For example, the 'auto-rostering' function created a useful working roster template, but this still required a great deal of input afterwards. At Case C the use of lock down rules in eRoster meant that some participants still preferred to roster using paper before transferring their work to eRoster before the lock down date. In terms of the consistency of data, participants across all four hospitals were concerned that staff perceptions of acuity/dependency differed and were influenced by many other factors. Some wards restricted safe staffing data entry (e.g. Band 6/7 only), but participants were also concerned that this risked de-skilling Band 5 nurses whose role was critical, particularly in supporting new staff and convincing them of the importance of safe staffing. Training in eRoster/SNCT was therefore an ongoing priority and being addressed by all four case hospitals, particularly for less IT literate nurses and focused on key areas of uncertainty (e.g. what constitutes a red flag).

Participants also had concerns about the limits of safe staffing data currently used. Across all four cases there were concerns that some issues with potentially significant staffing implications were hard to capture in eRoster/SNCT. These included meeting specialist care needs (e.g. dementia, spinal injury related head holds), recording time spent off wards (e.g. accompanying patients to other areas/services) and issues around the layout and geography of wards. Other concerns included that the SNCT does not currently differentiate between senior/junior staff within a Band, which can have significant implications for skill mix, and the limited space available to record professional judgements. At Case B there were also specific concerns from some participants about data collection periods for SNCT currently being limited to day shifts only, and the recent removal of admissions/discharge data from eRoster/SNCT, though one nurse manager explained that the latter was a pragmatic decision to re-focus on getting basics right (29th Sept workshop - p3). Unsurprisingly therefore nurse managers often stressed that, despite ongoing improvements in the quality of safe staffing related data, caution was still required in their interpretation and part of their role was to remind senior managers of this.

Across the four Trusts participants reported that they rarely received any specific feedback from patients, families and carers about staffing that they could draw on. At specialist hospital Case C one nurse manager added that the nature of their work was such that people were sometimes just thankful to be treated, though this was no excuse for not looking at how communication could be improved (C2 interview – p7). More general surveys like 'friends and family' questionnaires provided some indicators of safe staffing (e.g. busy nurses, telephones not answered, delays in treatment) at discharge but there were no specific questions asked about staffing there and some participants thought a more specific question might be a good idea. Other indicators including quality care reviews (e.g. mock CQCs inspections) also included patient views on many subjects, including nurse staffing, that were then fed back to ward staff. Information on nurse staffing was also published monthly and available via the case hospital websites, social media and in waiting areas for example. Published Freedom of Information requests were also an important source of staffing related information, but one Case B nurse manager reflected that the best improvement for nurses in terms of patients, families and carers might simply be the ability to spend more time with patients (B3 interview –p10).

An interview with the Head of Patient Experience at Case B suggested this situation was changing. She acknowledged that historically patient engagement has been limited to basic feedback mechanisms like those described above, but already they were starting to work more in partnership with patients to co-produce services 'that work' and to develop real time systems for patient feedback:

> "[*In the future*] *I would have staff sat on the end of a computer and patients could just e-mail or text real time what the issues are. So we get texts now: 'I'm sat here in ED and I've been waiting this many hours and this has happened, that's happened'. Well we may not open that e-mail for a day in which case they've gone and the moment is lost. But actually, if we had real time data... what's your problem now, what are you seeing on the ward... it's about giving them options to complete data, so that you're building more intelligence as you go, but if it's real time then you can do something about it there and then. We haven't really moved with that I suppose and it will take some time" (Case B Head of Patient Experience interview - pp7-8*).

7.5 Contextual conditions for safe staffing policy implementation

The challenges and complexities of safe staffing policy implementation identified by participants included their organisational context and external influences operating locally (e.g. population profile/competitor employers) and further away (NHS Bursary/Brexit) and highlighted the interconnectedness and interdependencies across a 'whole system' approach to the implementation of safe staffing policies which is outlined in 7.5.1. The study identified six other contextual conditions that influence implementation of safe staffing policies: accountability at every level, alignment of organisational strategies, leadership, coherent responses to challenges, relationships between staff, and staff goodwill in challenging circumstances.

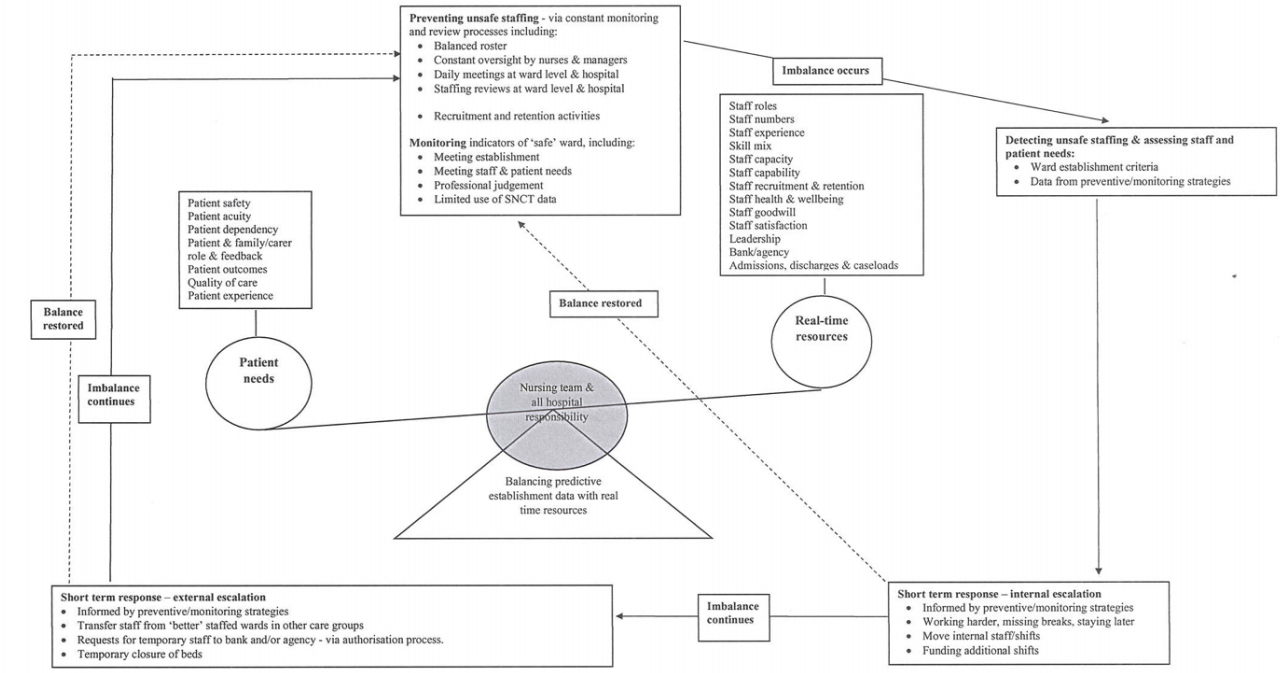
7.5.1 Whole system approach to safe staffing: balancing act

Based on Burton *et al* (8) a general description of ward level safe staffing policy implementation as a balancing act was modified and expanded to describe the different stages of implementation found across the four case hospitals; the main aspects were balancing patient need against real time resources. As summarised in Figure 7.1 below, whilst many core

strategies are used to maintain or re-balance the safe staffing see-saw, situations of imbalance were an everyday occurrence and sometimes these situations of unsafe staffing (in the opinion of participants) continued.

At the fulcrum of the see-saw, participants from all four cases acknowledged that whilst nursing teams generally made most decisions related to nurse staffing, ultimately achieving safe staffing was the responsibility of the whole hospital. When asked to explain the system, nurse managers described how nurse staffing decisions are managed through many planning, monitoring and review processes, in order to prevent unsafe staffing (as summarised in Table 7.3). If there are no obvious crises, the first indicator used to assess adequacy is whether a ward has achieved the planned level of staffing. Ward establishments (the number of posts per ward) and shift establishments (planned staffing per shift) are informed by many criteria, as described in Chapter 6, and typically reviewed every six months.

Figure 7.1 The ward level safe staffing system – a cross case summary



A second level of indicator focused on whether needs were being met safely: using 'red flags' for example to monitor if patient needs were being met (e.g. hydrated, not in pain, call bells answered, family/carers not distressed, medicines on time, no reports of incidents) and that staff had not missed breaks. At Cases A, B and D SNCT data were mainly used on a reactive basis to inform longer term staff planning strategies, particularly the ward establishment, but staff there were looking forward to using the eRoster/SNCT data more often and proactively in the future. Case C was beginning to use these data to inform daily safe staffing meetings and planning for the following day, particularly to provide evidence of shortfalls in staff and hours, but it was also early days with this and they were also planning to use the tool more proactively in the future. Professional judgement remained vital across the four cases, participants often describing the 'feel' of the wards and how you can judge when things are not right, whilst wrestling with broader questions like what's 'safe' or 'optimum' and where to 'draw that safe staffing line?' as one nurse manager described it (A1 interview – p7).

Recruitment and retention strategies were also important to ensuring safe staffing as all four Trusts were experiencing problems in filling posts. The variety of internal and external recruitment and retention activities are an integral part of the whole systems approach to safe staffing.

Table 7.3 Cross case strategies to plan, monitor and review safe staffing

Strategy/tool	Description and key staff and minor variations in strategies (by Case)
Balanced rosters	Key link between staffing & financial budget. Rosters drafted by ward manager around every 6-8 weeks, including requests for additional staff (e.g. vacancies, maternity leave). Published in advance after approval by matron, overseen by senior managers. Reviewed nearer time to make changes (e.g. bank/agency need).
Ward establishment	Informed by national and local guidelines, Trust-wide safe staffing data and professional judgement, budget etc. → Detailed review and report every 6 months sent to Trust Board – based on safe staffing data (inc. CHPPD) and professional judgement. → Ongoing review process informed by eRoster/SNCT data, with staff transferred in response to patient needs, staffing gaps and hotspots. → At Case A one manager commented that review also helped with evaluation and towards more equal funding (and staffing) for all services (A1 interview – p8).
Daily ward level meetings and huddles	Daily staffing meetings reviewing and planning past, present and future shifts, attended by ward staff, Matrons and others (e.g. Bed managers, senior managers, out of hours team, discharge team, eRoster team). Other activities include monitoring demand (through front and back doors, bed meetings) and responding to problems (e.g. increased demand, short notice leave, staff sickness, discharge planning).
Nurse staffing quality meetings	Regular safe staffing related meetings across Care groups led by safe staffing lead nurses/ Directors of Nursing with others (e.g. HR, Finance, quality), includes review of data against NQB and NICE guidelines.
Staffing tools & technology	Including eRoster/SNCT ('red flags', CHPPD, planned versus actual nursing numbers), staffing related incident reports (e.g., via Datix), staffing quality reports – data used to inform strategies & identify shortfalls. Some Trusts benchmark CHPPD data in comparison to other similar Trusts as a sense check of how they are achieving nationally. SNCT data rarely used to inform daily decisions (A, B, D). SNCT data increasingly used to inform daily decisions (C).
Board reporting	Monthly reporting on nurse staffing trends and hotspots by safe staffing lead nurses/Directors of Nursing and Care Groups to Trust Board.
Recruitment & retention	Many activities by HR, Care Groups etc. including: → Local, national & international recruitment. → Retention via improved training and career development pathways for all staff.

If the various strategies for ensuring balance were unsuccessful then intervention at the ward level focused on the following four strategies:

1. **Detecting unsafe staffing & assessing staff resources and patient needs:** participants were asked how they would know if staffing was not safe on a shift? Across the four hospitals they returned to the ward establishment criteria and the strategies in Table 7.3 to detect, assess and then respond to unsafe staffing situations. Nurse managers expected their staff to have already identified and anticipated most situations in meetings, such that responses should usually be well underway or resolved. The assessment of staff resources and patient needs was based on the ward establishment, other data sources listed in Table 7.3, alongside professional judgement.

2. Short term response – internal escalation: across the four cases the first response was to review and escalate the problem internally within the wards and Care Group and may involve contacting others for advice or support (e.g. Matron, out of hours team) if necessary. Mobile phone technology helped here, with participants across the four cases using group emails/texts/ *WhatsApp* to make immediate contact with colleagues. Nurse managers expected their staff to have reviewed whether they could manage by themselves using the strategies in Table 7.3, typical internal responses including:

- → Working harder, missing breaks, staying on later.
- → Moving shifts and staff around.
- → Funding an extra shift.

Another internal response mentioned only by participants at specialist hospital Case C involved moving patients themselves to less acute areas. Consideration would also be given to factors including the elective take and discharge rate for the ward(s) that day, internal staff capacity, capability and skill mix and the availability of internal support from non-rostered staff (e.g. supernumerary, staff on study leave, new staff, and students).

3a. Short term response – external escalation: where staff are unable to resolve unsafe staffing internally, the next step for all four hospitals involved escalation beyond their own ward/Care group to others across the whole hospital and, where necessary, beyond to bank and agency. The many strategies used aimed to prevent wider escalation or make plans for it as early as possible, but participants reported that the need for external escalation was becoming an everyday occurrence. Wider escalation began by contacting the duty Matron/out of hours team and others (e.g. Board Holders at Case B, Clinical Site Practitioners at Case C) to explain the situation and the internal review before considering the whole hospital situation and other options to restore the safe staffing balance.

The first option involved moving staff from better staffed wards in other Care groups. Across the four cases staff vacancies meant there were fewer better staffed areas, but participants in the three acute care hospitals (A, B, D) acknowledged that some areas had higher vacancies than others. The second option involved shifts being cascaded to the bank and lower cost agencies first, until the shift vacancy becomes critical and higher cost agencies are approached. Nurse managers across the four cases were trying to avoid high cost agencies (as per NHS-Improvement rules) but their role remained vital, particularly in providing cover for specialist areas. Requests for the authorisation of staff from bank and/or agency were made via senior nurse managers, usually Matrons and the Directors of Nursing during week days and out of hours via the duty Matron/ management team.

3b. Short term response – temporary closure of beds: as a last resort when other options had not worked to restore safe staffing, three case hospitals (A, C, D) reported they had temporarily closed beds. Such action required the approval of senior managers and major planning for the inevitable knock on effects (e.g. theatre cancellation, transfer of patients, implications for critical care). However temporary closures for safe staffing reasons were not common and considered a last resort for many reasons, including the impacts on waiting lists where time could be critical (e.g. cancer patients).

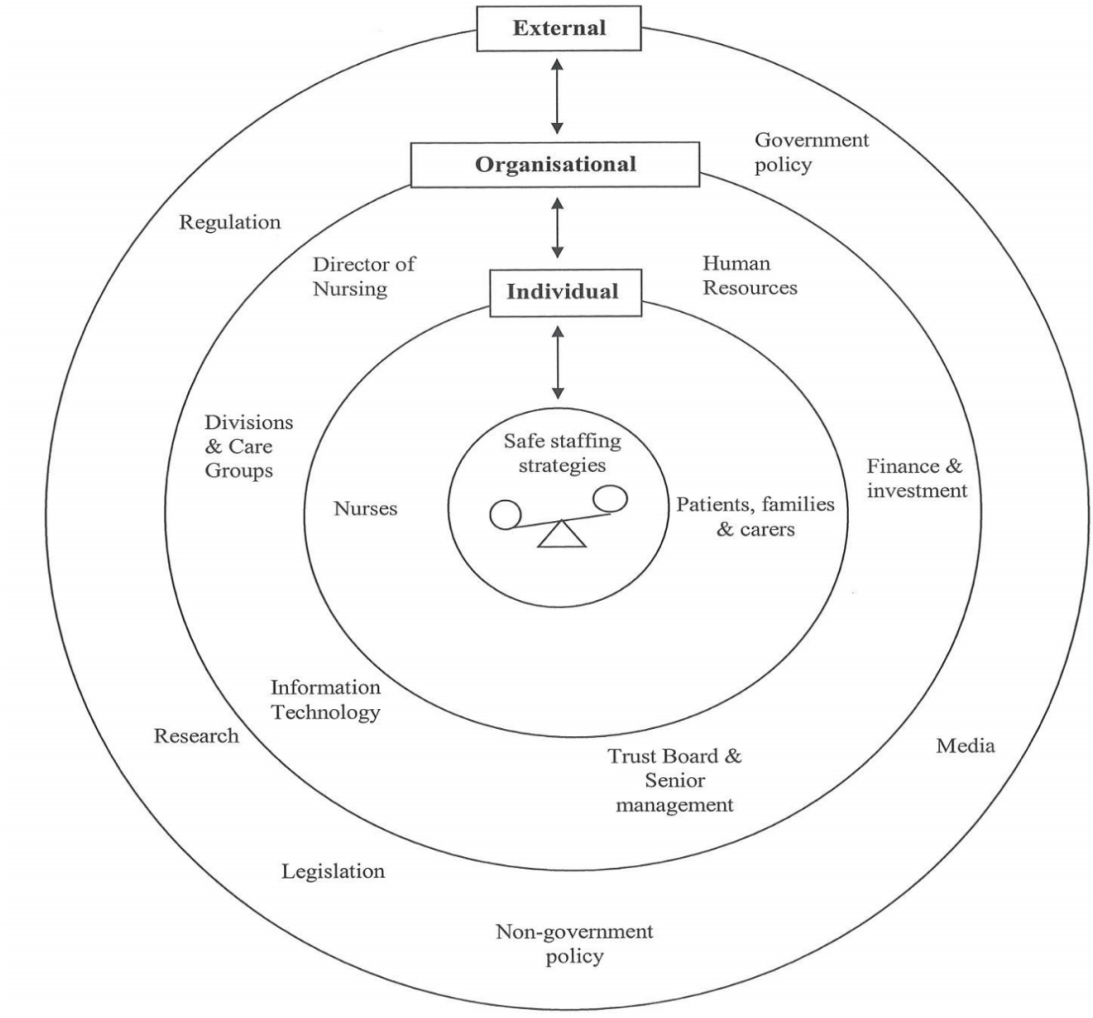
4. Imbalance unresolved – unsafe staffing continues: despite these strategies and preventive approaches, many across the four hospitals reported that sometimes the imbalance continues and, in their opinion, their wards are not operating with safe nurse staffing levels.

Figure 7.2 embeds the ward level system for safe staffing (described in Figure 7.1) within a wider context that has emerged from the four hospital cases. This description explains how factors at three different levels can influence safe staffing policy implementation across the four cases:

- External – the external drivers of safe staffing policy implementation.
- Organisational – key departments & people.
- Individual – nurses, patients, families and carers.

These factors are arranged in concentric circles around to depict the blurred boundaries that frequently overlap and where the power concerning implementation of safe staffing policy circulates between various actors. It can be visualised by viewing Figure 7.2 from above and thinking of it in three dimensions. Here safe staffing policy implementation looks like a vast funnel with nurses at its end: all the factors above pour out materials which, mixed by nurses and others, emerge as a stream of safe staffing actions on the ward.

Figure 7.2 Factors influencing safe staffing policy implementation



Previous sections have described and explained many of the impacts of and influences on safe staffing policy implementation, but this section now explores four key characteristics of that reflect a whole systems approach to safe staffing policy implementation.

7.5.2 Where safe staffing is everyone's business...but with clear roles

Successful implementation of safe staffing policies require that 'safe staffing is everyone's business', but that this responsibility is accompanied by clear roles and accountabilities, and leadership for safer staffing initiatives and responsibility for decision-making. Integral to the whole systems approach was that responsibility for safe staffing was shared between many different parts of the four case hospitals from Ward to Board. The names and structures of the departments and individuals varied between the four cases, but their key responsibilities for safe staffing are summarised in Chapter 6.

7.5.3 Sufficient alignment of organisational strategies around safe staffing

Given the complexity of the whole systems approach, achieving sufficient alignment between the many organisational strategies and the departments/individuals involved in safe staffing seemed to be crucial to its success. Across the four cases, alignment was first illustrated by nurse managers in their explanations of the systems in Figure 7.1, particularly how the many strategies summarised in Table 7.3 above to plan, monitor and review safe staffing are dependent on the actions of the many departments and individuals summarised in Chapter 6. Here the creation and further development of many routes, responsibilities and accountabilities for safe staffing (e.g. escalation, governance, quality, safety, finance, Board etc.) was key to the whole systems approach. In the words of one nurse manager:

> *"'...it's that whole Ward to Board thing... those ward leaders, supported by their matrons, supported by their Divisional Head of Nursing, supported by me... working with the Director of Nursing, with [safe staffing] strongly in her portfolio as one of the Board, who will then link with the Director of Finance, our HR lead...[and] our [operations people]... balancing the challenges organisationally of maintaining service and maintaining capacity, maintaining throughput of patients and balancing that with the staffing..." (A1 interview – p3).*

Across all four hospitals the safe staffing lead nurse performed a critical role towards achieving Ward to Board alignment. Their own seniority and close working relationships with the Director of Nursing (or equivalent) and other senior managers helped perform this role, but bringing the strategies in Table 7.3 to life required a significant alignment role across the whole hospital:

> *"...for quality assurance, governance and finance we've got to make sure that they're unified, we have to make a report every month on safe staffing, what we planned to deliver and what we actually delivered, where the deficits were and how we addressed those deficits. And we do a red flag report as well, in line with NICE guidance, to identify the areas that fall outside of the NICE recommendations and that goes to the Trust Board once a month for information and for them to note the actions that we're taking. And then with Finance, obviously we work with them to adjust financial establishments ...So it's an ongoing thing sort of every hour almost, monitoring the finance against the patient safety and quality that we can provide" (B1 interview – p3).*

> *"My role is more of an advisory role, using the tools to measure and inform them... I would say my biggest role is with Human Resources and Finance and then probably Quality, Impact..." (D2 interview - p1).*

As Case D's safe staffing lead suggests above, the alignment of organisational strategies was also improving local or ward level systems thinking about safe staffing, particularly following the introduction of the integrated eRoster/SNCT tool, as other participants confirmed:

> *"Within the first couple of weeks [of newly integrated eRoster/SNCT] we had a ward, it normally has four registered nurses on and an HCA, they were fully staffed, but on [eRoster/SNCT] they were showing as 12 hours short because of the acuity. And actually that was covered by the site practitioners looking at the staffing, because they had five nurses on I wouldn't have given them an extra nurse, I would have given them to the ward that was short, whereas now I will actually say that ward that's short, I will leave them as they are and I will put them where the resource is needed. So that's completely changed the way I would have thought about it" (Case C delegate – Phase 2 workshop - p8).*

The development of other roles also illustrated the whole systems approach and the importance of organisational alignment around safe staffing. For example, at Case B two HR Managers reflected how they are now working closely every day with the 'top people' from all Care Groups and other areas (e.g. procurement, Finance) on recruitment and retention (Case B HR Managers interview – p10). Similarly, the work of the Head of Patient Experience at Case B was focused on 'grass roots' patients but she was managed by the Director of Nursing, continued to attend operational meetings and was involved in staff training and development (Case B Head of Patient Experience interview – p2). Further, these managers reflected that based on their previous experience at larger hospitals, their ability to work in this way was helped by the relatively small size of Case B.

7.5.4 Leadership

Leadership was also critical to a whole systems approach and organisational alignment. At two hospitals nurse managers believed that changes in senior management had led to significant safe staffing improvements. At Case A from 2013 a new Chief Executive was instrumental in establishing and improving support for safe staffing. At Case B one nurse manager recalled past approaches that ignored acuity but were instead based on "*...these are the beds you've got, this is the staff you've got, this is the money you've got, there's no more money, end of story*" (B3 interview – p2). A new Director of Nursing was turning things around, what two nurse manager there summarised as improving patient outcomes by investing in staff and improving their terms and conditions. At Case C participants also commented that the nursing backgrounds of the senior managers in Quality and Safety helped keep safe staffing on the agenda. Conversely at Case D the lack of a permanent Director of Nursing in post during data collection was an ongoing concern to nurse leaders, but they were also hopeful of improvements following the recent start of a new Chief Executive and with a new Director of Nursing starting shortly.

7.5.5 Coherent responses to challenges

During data collection participants were asked to identify the greatest challenges in getting the right people with the right skills in the right place at the right time. These are summarised in Table 7.5 below and further illustrate the complexity of a whole system approach in Figure 7.2 and how external, organisational and individual factors interconnect to both create and sustain these implementation challenges.

Table 7.5 The greatest challenges for the whole safe staffing system

Challenge	Main issues for participants across all cases (unless indicated otherwise)
Shortages of nurses	Nurse vacancies unprecedented and case hospitals struggling daily.
Increased patient needs, patient expectations & local context	A, B & D - Described patients generally becoming increasingly sick, complex and more dependent in recent years. Discharge was an ongoing concern. C - specialist hospital with complex patients. B & D – Some patients had unrealistic expectations, influenced by social media. C – Reputation led to high expectations from all patients & further pressures on staff. A – Flexible midwifery staffing to support women in areas of social deprivation. B – Large elderly population, high cost of living and lack of affordable housing nearby. C – High cost of living at urban site, with lack of affordable housing nearby. D – High levels of poverty & inequality in local population.
Recruitment & retention	Many activities, but workforce remains unstable & negative media coverage doesn't help. B – Nurse pay mentioned, but more the need for more flexibility around Banding and pay scales to help recruitment and retention. C & D – Cap on nurse pay mentioned, but priority for was safety and quality of care.

Challenge	Main issues for participants across all cases (unless indicated otherwise)
Nurses tired & frustrated	Nurses concerned that covering vacancies by missing breaks, staying late (etc.) was making them tired and sick, with knock on effects (e.g. retention, poor morale). B & D – Some nurses think these concerns are not being heard.
Nurses reluctant to challenge safe staffing decision making	A – Some nurses felt pressured into saying their staffing was 'safe' during meetings and thought there should be more opportunity for challenge by nurses to ensure safe staffing. B, C & D – Some wards described themselves as 'too busy' or 'just about managing' as tactic to keep staff, some nurses unwilling to challenge this judgement. D – Some ward managers unwilling to use SNCT data to challenge matrons about staffing levels. Some specialties (e.g. renal, stroke) don't like acuity data being challenged.
Lack of time for staff supervision & development	Concern about the lack of time and budget for training, supervision, mentoring etc. during the working day and its impacts on their work and development. D - some also implicated change to 12 hour shifts in some areas on this.
Student nurses	Impacts of recent withdrawal of University training bursaries in England. A – Local University nursing graduates often only stay for 1-2 years.
High turnover of ward staff, impacts on experience, skill mix, leadership	Factors included the impacts of shortages, lack of staff development, different career pathways (e.g. specialisation), experience (e.g. junior staff needing more support), loss of experience due to retirement. Implications = less experienced workforce (especially in Bands 6 and 7) may have less confidence to maintain standards, challenge and lead.
Temporary Bank and agency staff	Vital to maintaining nurse staff on wards, but some ongoing tensions with permanent staff around skill mix, finance. A & D – Late payments due to software problems, with knock on retention problems. C – Lack of temporary staff with specialist skills required, particularly for nights.
EU & international nurses	Many need significant support, which has staffing implications. Brexit not happened yet; fear regarding consequences over time. International nurses failing IELTS examinations, despite significant support.
Changing nursing workforce	Workforce changes broadly welcomed (e.g. developing HCA roles, more pathways to registration, more specialist/management pathways) but need for ongoing discussion of changes and their impact on already stretched workforce.
Buildings & ward layout	A, B & D – Some buildings were ageing and considered a problem for staff recruitment and retention and safety, particularly in comparison with other (competing) Trusts. B, C & D – Some wards were better arranged to promote safe staffing (e.g. less partitions, corners, side rooms) than others.

7.5.6 Relationships with colleagues key to making safe staffing work

Relations with colleagues and managers were key to the successful implementation of safe staffing policy. When asked who they would turn to if they needed help with safe staffing, many identified their colleagues and the next person in their hierarchy alongside Matrons and/or the lead nurse for safe staffing/Directors of Nursing or equivalent. The many roles of the appointed lead nurses for safe staffing at the four case hospitals were critical here in maintaining the safe staffing strategies in Table 7.3 above, supporting staff (e.g. training, supervision, mentoring) and aligning the work of the many responsible departments and individuals as summarised in Table 7.4 above. Other important sources of advice included workforce related teams and managers providing out of hours coverage.

7.5.7 Staff goodwill in challenging circumstances

Participants generally felt supported by their colleagues and managers in making safe staffing decisions but there were clear tensions during the implementation process summarised in Figure 7.1 above. The pressures on nurses to work harder for longer were recognised to be contributing to wider problems of staff sickness and retention across the four cases. Participants were hopeful that safe staffing improvements would in time reduce these problems, but in the meantime they repeatedly emphasised the significance of goodwill in making safe staffing work whilst warning that it had limits and was under constant threat as illustrated by the examples below. Across the four cases, participants also called for clearer guidelines and better support from HR in managing aspects of safe staffing (e.g. short notice leave, sickness leave, flexible working), alongside greater leadership from nurses in managing this.

Another source of tension arose from the constant transfer of staff from 'better' staffed wards to potentially unsafe wards. Across the four cases staff vacancies meant there were fewer better staffed areas, but participants from cases A, B and D (the three general acute hospitals) acknowledged that some areas had higher vacancies than others. All participants recognised that safe staffing was everyone's responsibility, but some nurse managers acknowledged that in reality nurses preferred not to be moved to a different ward. In Case A's midwifery services, one manager commented that transfers of staff to the delivery suite might mean that some people would not get such a good experience but safety and flexibility are vital, the transfer is temporary (maybe 1 hour) and the woman in labour takes priority (A2 interview – p7). However senior nurses across the cases commented that it was frustrating if their successful staffing/ rostering was 'wiped out' (Case B nurse) or 'scuppered' (Case D nurse) by the transfer of staff to other wards/areas in greater need.

In Cases C and D some participants thought it unfair when staff were transferred from one poorly recruited ward to another, one Case D nurse likening this to *"robbing Peter to save Paul"* (Phase 1 workshop p8). Case D participants also feared that regularly transferred staff might not want to stay, whilst observing that the temporary bank and agency staff sometimes used to fill the gaps were being poorly treated and their use was not sustainable for the longer term because core ward staff were so inexperienced (Phase 1 workshop p7). Indeed, Case A participants wanted to acknowledge the undervalued role of HCAs on understaffed wards who could be of more value than transferred nurses unfamiliar with a ward. One Case A nurse manager also questioned whether the need to constantly move staff around indicates that the establishment/staffing model for the ward may be wrong and needs reviewing.

Chapter 7 Summary

- A realist informed evaluation has been undertaken considering what, in terms of the implementation of safe staffing policy, has worked, for whom, how and in what circumstances. The approach has examined safe staffing policy implementation in terms of impacts, influences and the contextual conditions.
- Seven main impacts on safe staffing policy implementation were identified: changes in the language used to refer to staffing, increasing visibility of safe staffing within the organisation, use of data to support investment in nurse staffing, data providing a rationale for difficult decisions, policy as a driver for accelerated action around safe staffing, tools changing the nature of management practice, and policies prompting enabling workforce redesign.
- Ward level safe staffing policy implementation can be viewed as a balancing act. The different stages of implementation found across the four case hospitals allowed this model to be refined. The key aspects were balancing patient need against real time resources.
- Four main influences on policy implementation were identified: the clarity of the safe staffing policy message itself, considering how organisations are experimenting with and learning to deliver safe staffing, the role of tools and technologies to support staff in decision making and issues around the credibility and reliability of their data.
- Contextual conditions that affect safe staffing policy implementation have been elucidated from the cross case analysis. Implementation appears to work best when there is a whole systems approach with sufficient degree of alignment across organisational strategies and data systems relevant to safe staffing, including workforce, finance, quality and safety, and professional practice. Clearly defined leadership, a shared sense of accountability, linked to wider workforce issues such as recruitment and retention, engaged with external stakeholders and a high degree of goodwill were factors associated with success. A lack of transparency and equity around staffing within organisations risked this goodwill.

8. Costs of implementing safe-staffing policies

Having described the changes made in response to safe staffing polices and guidance, the aim of this chapter is to continue the case study analysis to provide an estimate of the costs associated with these changes.

Using Trust data and the interviews we have estimated the resource use related to determining and agreeing staffing levels, reporting to Trust board level, and monitoring safe staffing levels (for example using the indicators identified in NICE Safe Staffing Guidance). While the nursing 'red flag' may be collected within software systems in use in the case study hospitals, we will also seek to identify the additional costs to the Trusts of collating and publishing these data.

8.1 Objectives

Provide an estimate of changes in spend on nursing and support staff at national (NHS England) level over an eight-year period (three and a half years before and four and a half years post-Francis).

Provide estimates of typical staff and other resources associated with planning nurse staffing on wards in NHS hospitals (based on data from the four case study sites). From the resource inventories we derive indicative costs of planning safe staffing.

8.2 Approach

To estimate the cost consequences of staffing changes reported in Chapter 4 we estimate the proportion of registered nursing and healthcare support staff in each Agenda for Change Band for each month from October 2009 to December 2017, using FTE reported by AfC Band in the NHS Workforce Statistics Series. The proportion of staff in each AfC Band were multiplied by the mean annual basic pay per FTE for each AfC Band reported in the Unit Costs of Health and Social Care, 2017 (see Table 8.1). The salary figures were uplifted to include employer costs associated with the NHS Superannuation scheme (at 14.38% of gross salary) and employer national insurance contributions (at 13.8% on earnings above the lower contribution threshold). Salary and employer on-costs used in this analysis were kept constant at the 2017-level to exclude effects of inflation, salary increase and administrative changes to employer contribution. The estimated staff spend is presented as the sum of spending within quarters of the financial year.

Table 8.1 Mean pay per FTE for nursing, midwifery and health visiting staff, by Agenda for Change band, NHS England

Agenda for Change Band	Mean annual basic pay per FTE
Band 2	£16,536
Band 3	£18,333
Band 4	£20,279
Band 5	£26,038
Band 6	£32,342
Band 7	£38,801
Band 8a	£45,544
Band 8b	£54,307
Band 8c	£63,703
Band 8d	£75,171
Band 9	£88,526

Source: (89)

To estimate indicative costs associated with planning and delivering safe staffing, we conducted interviews with workforce leads, human resources, administrative and analytical staff in the four case study hospitals. Interviews with workforce leads were semi-structured, focusing on current activities associated with delivering safe staffing and identification of major changes that may be ascribed to publication of the Francis Review and associated guidance. We followed up the interviews with requests for documentation of the Trusts' guidance and reports on establishment reviews (including historical evidence on the collection and use of patient dependency/acuity measures), ward-level care quality indicators (such as rates of infection or falls) and information on resource use in workforce planning and management.

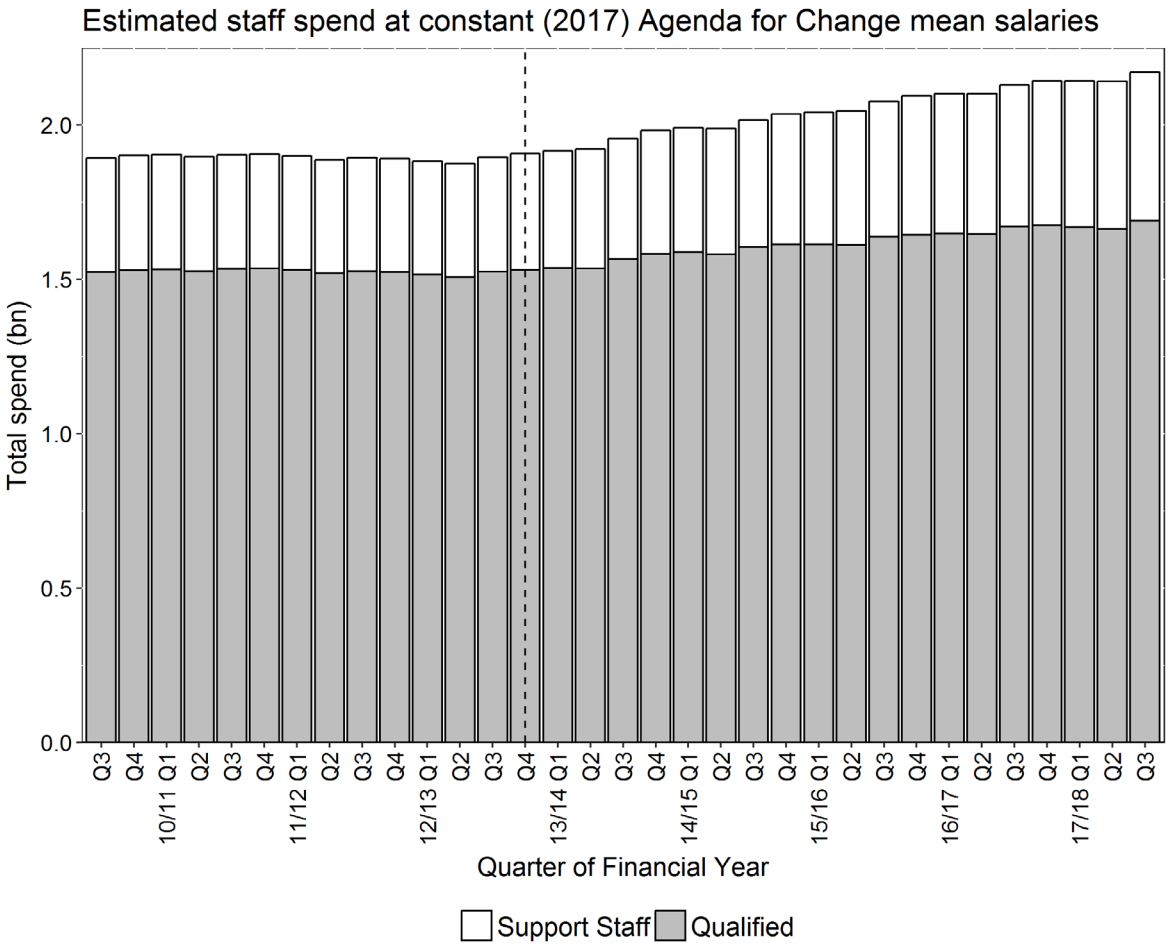
We developed a set of flow charts for each case study (cross-referenced to similar figures developed during interview stages of the realist evaluation) identifying significant resource requirements and information flows from those required at ward and directorate-level, through nurse management, informatics and Trust human resources up to the board-level. Since the case study sites were not identified to act as ideal types, or to provide a basis for comparative analysis, we have combined the charts from the case studies to provide a cross-case exemplar.

8.3 Cost of staffing changes

8.3.1 Costs at national level

Figure 8.1 shows the estimated total spend (including employer costs for superannuation and national insurance) based on FTE substantive registered nurse and support staffing reported in the NHS Workforce Statistics from the third quarter of the 2009/10 financial year (October to December 2009) to the third quarter of the 2017/18 financial year. Costs associated with registered nurse staff represent the majority of the total due both to the fact that registered nurses comprise the majority of the workforce (69% in October 2009 and declining slightly to 66% in December 2017), and that average pay for registered nurses is approximately 70% higher than for healthcare support staff.

Figure 8.1 Estimated staff spend on registered nurses and support staff (90)



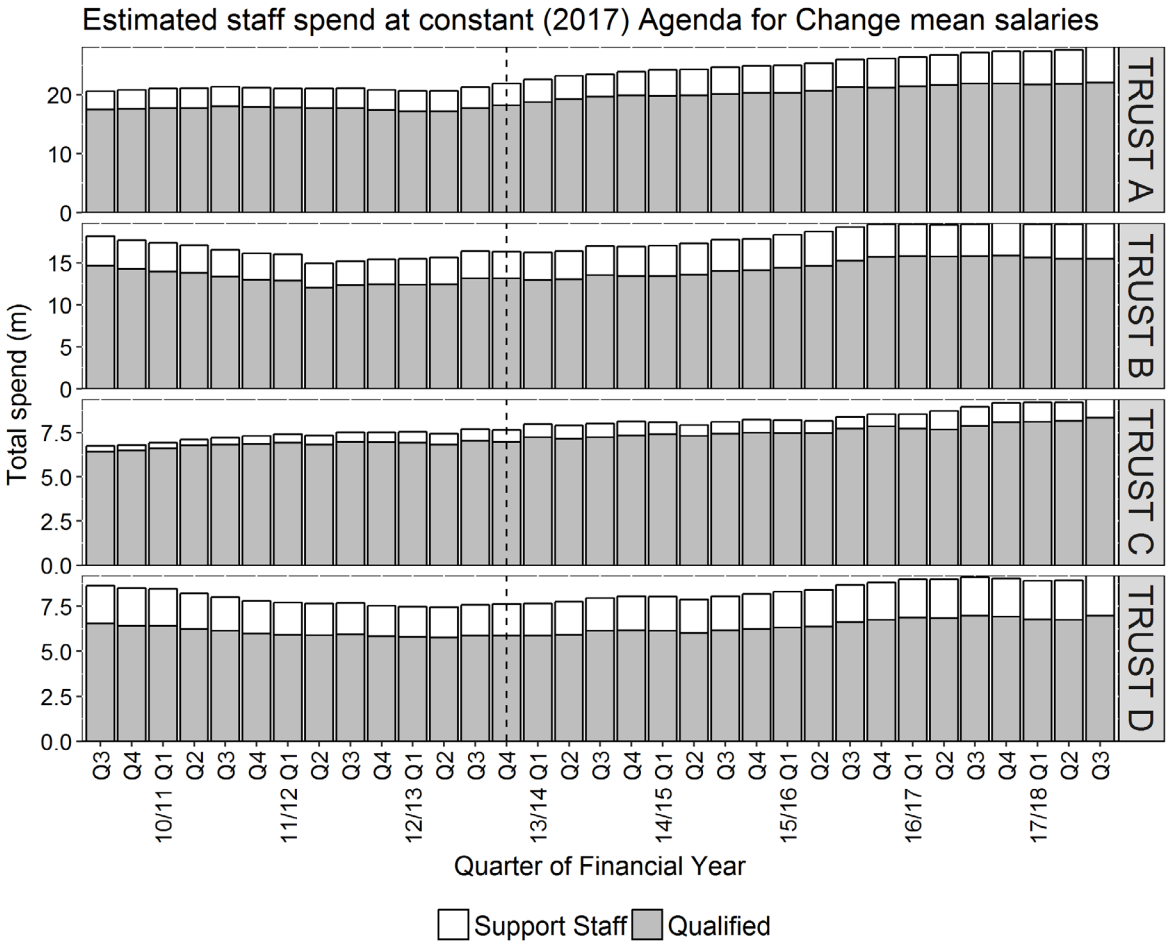
Source: (90)

Over the whole period the estimated total spend increased by 15% (from £1.9bn to £2.2bn), although the growth has not been constant over the whole period. Prior to the second quarter (July to September) of 2012/13 financial year, the estimated staff spend remained within 0.5% of the initial value of £1.9bn. At this point the estimated spend fell by 1%, after which it increased continuously through the rest of the observation period. This pattern, of comparative stability from quarter 3 2009/10 through to quarter 2 2012/13 and then continuous increase throughout the remaining time series, is shown by each of the staff groups with the estimated registered nurse spend reducing by approximately 1% (£16.5 million) Q3 2009/10 to Q2 2012/13), and then increasing by 12% (£182 million) up to quarter 3 2017/18, while support staff spend fell by approximately 0.3% (£1 million) followed by an increase of approximately 30% (£113 million).

8.3.2 Costs of staffing changes at case study sites – substantive

Figure 8.2 presents estimated spend on substantive staff at the four case study sites. The trends in overall spending follow similar patterns to those previously described for staff numbers (FTE) and, while the growth in support staff is less exaggerated (particularly at Trust C), the proportion of total substantive staff spend on support staff reflects the previously described changes in skill mix, with increases in the proportion of support staff in Trust A and Trust C. In all Trusts the overall substantive staff spend is greater at the end of the time series than at the beginning, showing a more-or-less constant increase at one Trust, with the remaining Trusts showing increases from between Quarter 2 2011/12 and Quarter 2 2012/13 (July to September of the respective calendar years). However, as noted previously the staffing increases (and increased spend) at two of the Trusts follow reductions over the two preceding years.

Figure 8.2 Estimated staff spend on RNs and support staff at case study sites



Source: NHS Workforce Statistics, Provisional Statistics: excluding medical staff (90)

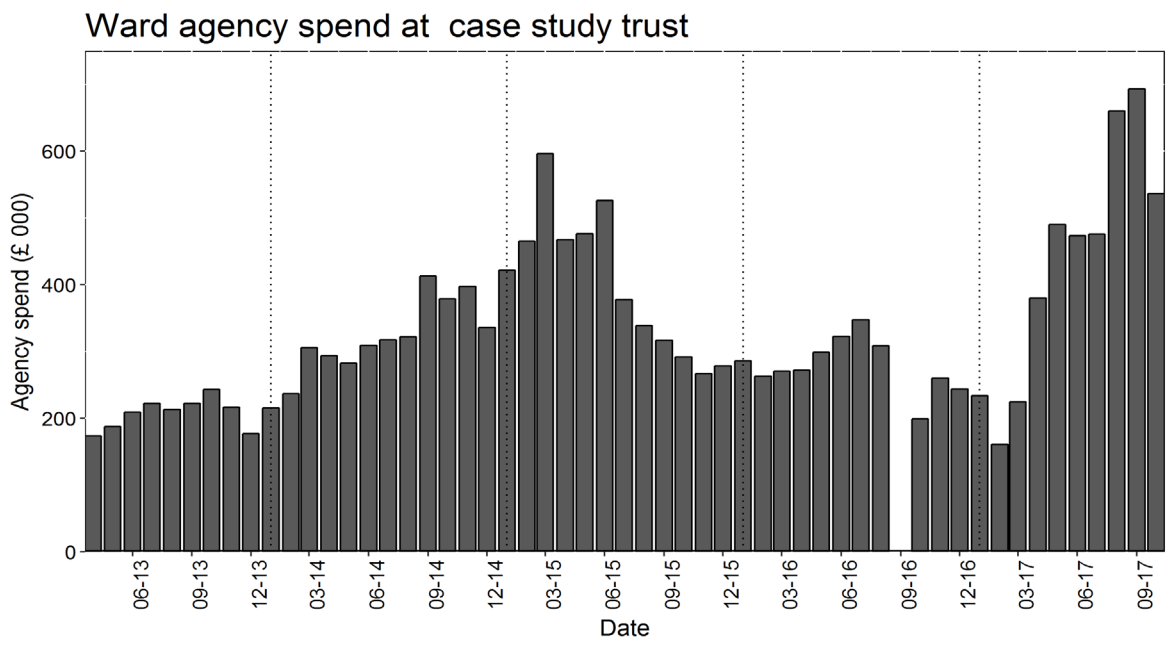
8.3.3 Costs of agency and bank staff

Two case study Trusts provided time-series on ward use of bank and agency staff for periods greater than one calendar year. The data included bank and agency hours (registered nurse or support staff) requested and filled (with reasons for requests) and ward spend.

Figure 8.3 reports the total agency spend on wards in one of the case study Trusts, showing an overall trend of increase up to mid-2015, with the peak for this period in March 2015. This was a period of shortfall been planned and actual numbers of

registered nursing staff (around 10-14% up until May 2015 increasing to 17-20% until September 2015). The trend toward lower agency spend coincides with the announcement of plans to introduce an agency cap, with the rules for the capping system announced in November 2015 and planned implementation in April 2016. This period (mid-2015 to April 2016) appears to be associated with a substantial rise in recruitment of registered nursing staff to vacant posts (or substantial reduction in part time working) at the Trust, with an increase of approximately 15% actual WTE and a concomitant reduction in vacancy from around 20% in June 2016 to 5.4% in March 2016. Since then there has been an almost linear decline in actual WTE registered nurses, partially offset by an apparent over-recruitment of unregistered nurses. However, agency spending has increased almost two-fold since February 2017.

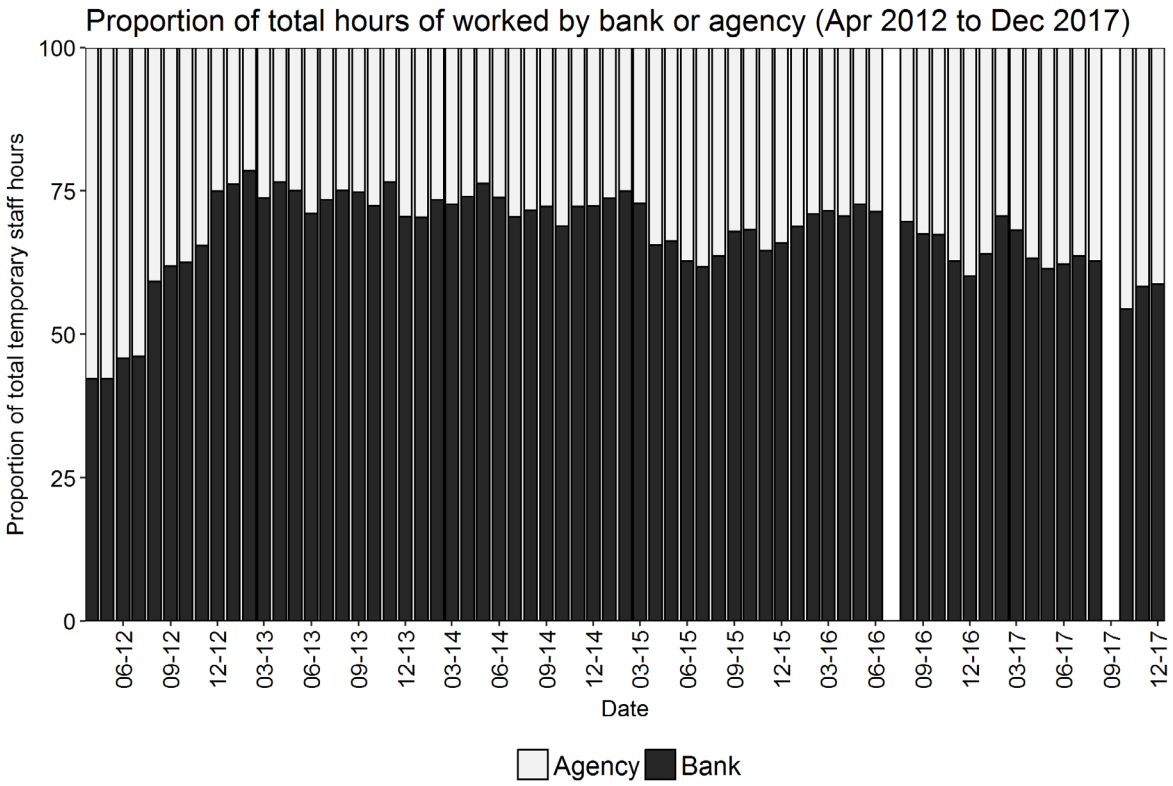
Figure 8.3 Agency spend on wards (at a case study site)



Source: NHS Professionals summary costs provided by Trust (Note: data for September 2016 not reported)

Figure 8.4 shows the proportion of total temporary staff hours worked by bank staff over the same period, which shows a large increase (approximately 30%) in the proportion of hours worked by bank rather than agency, up to early 2013 – a change that occurred while total hours of temporary staff used was increasing. The proportion of hours worked by bank staff remains around 75% until early 2015, and by the end of the time series the proportion of hours worked by bank staff is closer to 50%.

Figure 8.4 Distribution of hours across bank and agency



Source: NHS Professionals (filled requests)

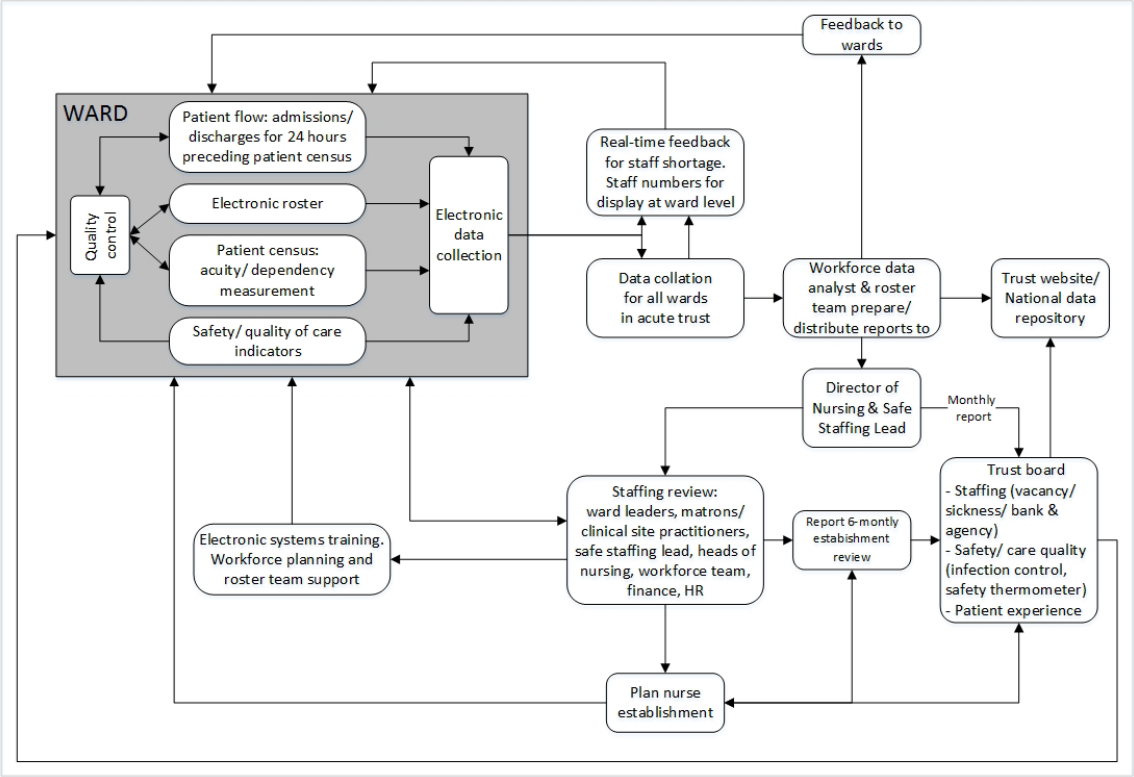
The most common reason for use of temporary staff recorded is 'vacancy' which accounts for 75% of filled requests by the end of the time series, followed by 'specialing' or enhanced care observation (either 1:1 or cohort).

8.4 Costs of planning processes & information flows

Figure 8.5 provides a cross-case view of the main activities associated with nurse workforce planning in the case study Trusts. Representations such as this inevitably ignore large elements of detail related to everyday activity within the Trusts. The purpose of the flow charts was to identify key processes within the workforce planning cycle and their associated resource requirement. In particular, we intended to use these representations to identify which processes were most closely related to planning and deploying safe nurse staffing levels, and also to enable some judgements to be made regarding which processes had changed since publication of the Francis Report and associated guidance.

The shaded box in Figure 8.5 identifies a typical ward in which the principal workforce planning activity involves ensuring staff are rostered to work any given shift, based on a combination of the current nursing establishment, historical workload patterns (in terms of patient numbers, as well as established pattern of admission and discharge) and accepted allocations across shift times and skill mix. One of the main changes in practice during the period covered by this report has been increased adoption of information technology for planning rosters, including the collection and collation of workforce planning tools and real-time feedback in the form of staffing levels such as care hours per patient day (see Chapter 4 for more detail).

Figure 8.5 Cross case view of workforce planning processes and information flows



It is unclear how far these changes or additional resource use associated with staff training in the use of electronic rostering systems and on-going support from HR or nurse rostering team can be ascribed to policies or recommendations arising from the Francis Report, given the general adoption of computer technology within the NHS. However other information flows, including requirement to publish safe staffing indicators (including fill rates, care hours per patient day and red flags) and board-level reporting of summaries of ward-level performance (vacancy, sickness, bank and agency use, infection control, safety thermometer and patient experience) many of which draw on these information systems, represent additional workloads arising from guidance and report recommendations.

As noted in previous chapters, by the end of the study period, the case study Trusts were using the Safer Nursing Care Tool (SNCT) both for planning nurse establishments (via regular staffing reviews) and for real-time assessment of staffing levels, the latter involving up to three assessments and documentation of patient acuity per day. This involves a substantial increase in workload beyond that originally proposed for the SNCT, which suggested two yearly assessments, each lasting twenty days with a single acuity assessment at 3pm. Case study Trusts have adopted a practice of 'huddles' to review staff deployment on the basis of the planned distribution and possible discrepancies with patient need (as determined by the SNCT and associated workload multipliers), although these meetings are not solely concerned with these assessments and, in some cases, pre-date the adoption of this technology. One argument proposed in favour of adopting this process is that, by anticipating mismatches between staff deployment and patient needs, it may avoid escalation requests during shifts and reduce disruptive crisis reallocation of staff. Figure 8.5 identifies a requirement for analytical capacity to meet requirement for collating data collecting via multiple information systems (such as electronic roster for planned and actual nursing and care hours and Datix for patient safety indicators) which may be located within different departments (nursing directorate, HR, informatics) depending on the size and complexity of the organisation.

Table 8.2 summarises categories of Trust staff associated with workforce planning and safe staffing across the four case study sites, including estimates of additional time or resource related to safe staffing post-Francis. Table 8.3 provides an assessment of resource implications associated with recruitment.

Table 8.2 Trust roles & resources associated with workforce planning & safe staffing

Role	Resource	Resource Measure	Cost (WTE £ pa)	Additional activity
Director of Nursing	→ Overall Responsibility → Weekly meeting regarding recruitment → Trust board papers/ attendance at meeting	NHS Senior Mgt Scale: estimate 20% WTE	£102,500 to £142,500[a]	Escalation of staff shortfall Response to 'red flags' Trust board reporting
Recognised safe staffing lead nurse (Assistant Director of Nursing – Workforce)	→ Organises regular staffing reviews → Oversight of internal and external staffing reports → Delivery of internal staffing reports to board → Leads on establishment setting → Clinical governance → Implementation and ongoing training for the electronic roster and electronic system based on the SNCT	Band 8 WTE	£63,703	Escalation of staff shortfall Response to 'red flags' Trust board reporting Reporting of 'fill rates', CHPPD & commentary on over/ understaffing Six-monthly staffing review using endorsed planning tool
Assistant to safe staffing lead nurse	→ Assists in tasks applicable to the safe staffing lead → Implementation of electronic system based on the SNCT → Quality assurance of electronic staffing data → Coordinate extraction and collation of data (workforce planning tool)	Band 7 WTE	£38,801	New role
Divisional Heads of nursing	→ Establishment setting → Clinical governance → Oversight of local risk registers → Daily staffing review meetings → Appropriate escalation response to staff shortfall → Reviewing workforce for retention and recruitment	Band 8 WTE	£45,544[c]	Daily staffing review meetings

Role	Resource	Resource Measure	Cost (WTE £ pa)	Additional activity
Matrons/ Clinical Site Practitioner	→ Establishment setting → Final approval of nurse staffing rosters → Responsible for safe staffing across whole hospital out of hours → Daily staffing review meetings → Other staffing review meetings → Appropriate escalation response to staff shortfall → Quality control → Preparation/ distribution of quarterly reports (and other where deemed necessary) on staffing data	Band 8 WTE	£45,544 [c]	Daily staffing review meetings
Ward Leaders	→ Inputting data into electronic system based on the SNCT → Appropriate escalation response to staff shortfall → Responsible for planning and delivering balanced rostering → Training on use of electronic systems → Daily staffing review meetings → Other staffing review meetings → Establishment setting → Sharing staffing numbers visibly at ward level	Band 7 WTE	£38,801	Data input (workforce planning tool) 2/3 per day Display shift staff numbers Daily staffing review meetings Training on use of electronic systems relating to safe care
Nurse in Charge (Band 5,6 or 7)	→ Appropriate escalation response to staff shortfall → Inputting acuity and dependency data onto electronic system → Attendance to training for electronic systems for staffing	Band 5 WTE Band 6 WTE Band 7 WTE	£26,038 £32,342 £38,801	Data input (workforce planning tool) 2/3 per day Training on use of electronic systems relating to safe care
Finance manager	→ Works with Directors of Nursing, Safe Staffing Lead, Divisional Heads of Nursing and Ward Leaders to plan, monitor and review staffing and budgets → Establishment setting	Band 8 WTE	£49,310 [d]	

Role	Resource	Resource Measure	Cost (WTE £ pa)	Additional activity
Workforce Planning and Rostering Teams [Part of HR]	→ Work with nursing leads to assist management of establishments, rostering and budgets → Daily staffing review meetings → Supports nurses to use of electronic staffing systems → Implementation of electronic rostering and electronic system based on the SNCT → Workforce analyst team takes a lead in internal and external staff reporting → Quality assurance and audit of electronic staffing data	**Workforce development lead** Band 8 WTE **Roster team** Band 7 (0.5-0.7 WTE) Band 6 WTE **Workforce analyst team** Band 7 Band 6 Band 5	 £45,544 £37,461 £32,342 £37,461 £31,260 £25,632	Implementation of electronic rostering and workforce planning tool data collection Data extraction and collation from electronic roster and workforce planning tool for internal and external reports including fill rates and CHPPD
Discharge Team	→ Daily staffing review meetings	Band 5 WTE	£26,038 [e]	
Human Resource (HR) for workforce	→ Review workforce for retention and recruitment purposes → Build relationships with local universities → Rolling media adverts → Open days → Recruitment fayres	Band 6	£31,260	

Notes:

[a] NHS Improvement guidance on pay for very senior managers in NHS Trusts and foundation Trusts (https://improvement.nhs.uk/documents/758/Updated_guidance_on_pay_for_VSMs_FINAL.pdf) March 2018

[b] mean Band 8c salary from Unit Costs of Health and Social Care. For reference salary ranges reported by Neuvco (recruitment agency) from £48,000 to £96,000 with 'average' £ 68,525 based on 19 poste d job descriptions – commensurate with salary range from mean 2017 AfC Bands 8a to 9 reported in Unit Costs of Health and Social Care

[c] mean Band 8a salary from Unit Costs of Health and Social Care

[d] mean basic salary (manager) from Unit Costs of Health and Social Care

[e] assuming discharge team representation from nursing/ midwifery not administrative grades

The majority of posts listed in Table 8.2 have not been created as a direct consequence of the Frances review or subsequent guidance on safe staffing, but it is clear that many existing posts have taking on new or adapted roles. As a result a simple sum of the cost column is likely to substantially over-estimate the cost impact of implementing guidance, particularly in the context of interview respondents view that many of these changes (such increased use of electronic rostering and workforce planning systems) were already in progress. The concern over safe staffing, and requirement for documentation and public dissemination of workforce data, may have encouraged adoption of workforce planning tools and provided additional support to cases for investment in IT solutions, but ascribing all developments to this single factor may be misleading. On the other hand, assuming that all such changes are sufficiently marginal that they can be ignored risks under-estimating opportunity cost in diverting clinical staff from direct patient care. The change, observed in all case study Trusts, from recording patient acuity using the published guidance for the Safer Nursing Care Tool (once per day at 3pm, at least twice per year for at least 20 days) to recording acuity at least twice (in some cases three-times) per day all year round involves an increase in observations of between 690 and 1,055 per year for each ward. At an average of six minutes per set of observations (Identifying nurse-staffing requirements using the Safer Nursing Care Tool [HS&DR 14/194/21] study protocol) this represents approximately 70 to 106 hours of nursing time per year for each ward.

Table 8.3 reports IT systems used for electronic rostering and collecting patient acuity ratings in case study Trusts. As discussed in Chapter 6, three of the Trusts used a commercial roster system that can incorporate collection and analysis of SNCT while the fourth Trust adapted an existing patient/ bed management system to collect acuity ratings (as part of a research project, but which has been used in staff management and continues to be used after completion of the research). The comparatively low cost for developing the bespoke system at the fourth Trust partly reflects the limited scope of the software, which collects the acuity ratings and can apply the published SNCT workload multipliers, but is not designed to provide feedback and analysis of these data. Additional analytical staff input is required to summarise the data and provide feedback to users.

Table 8.3 Resource associated with IT infrastructure supporting electronic rostering and collection of workforce planning tool (SNCT)

Provider	Resource	Cost (£)
IT Software Company	→ initial purchase/installation/training	→ one off-cost between £300,000 and £500,000 depending on size of Trust
	→ recurrent costs for maintenance/support	→ annual cost between £30,000 and £100,000 depending on size of Trust/ number of users
	→ additional modules – including collection of acuity rating and calculation of nurse staffing requirement	→ £30,000 and £50,000
Information and Technology (IT) Team	→ Electronic nurse staff roster → Bespoke development of patient/bed management tool – integration of acuity rating/recording of enhanced care requirement: • Analyst/developer Band 6-8b depending on skills and experience. 3 working weeks	→ £3,000 to £5,000
	• IT product testers Band 6. One day	→ £200
	• Oversight by Clinical project manager	

Table 8.4 reports specific actions that have been taken in case study Trusts to deal with particular issues over staff recruitment, including overseas recruitment and financial incentives to recruit substantive staff and to encourage bank staff to work hard-to-cover shifts (to avoid use of agency staff).

Table 8.4 Resource associated with recruitment initiatives

Initiatives	Resource	Resource Measure / Cost
International recruitment lead	International recruitment lead	Band 8 (0.2 WTE)
Nurse lead for recruitment	Recruitment lead	Band 7 WTE
Financial incentive	Financial incentive	£2000 golden hello for Band 5 Nurses Financial incentives for bank staff to cover harder to fill shifts and drive down high cost agency fees (e.g. additional £50 per shifts)

These activities, and the HR role related to staff recruitment and retention identified in Table 8.2, are not directly linked to policies on safe staffing or guidance since the Francis Review. However many reports and reviews (some of which are summarised in Appendix) have highlighted the importance of overseas and EU recruitment to the NHS nurse workforce (91). However, given the scale of vacancy in the NHS registered nursing workforce, the ability to recruit staff from outside UK remains an important determinant of NHS Trusts' ability to provide adequate staffing levels, either though targeted recruitment processes for specific clinical areas experiencing acute staff shortages or more general requirements.

Chapter 8 Summary

- Estimated nurse staff costs for NHS acute care increased by 15% from July-September 2012 to the end of 2017 (from £1.9bn to £2.2bn): Registered Nurse costs increased by 12%, support staff costs increased by 30%.
- Staff spending at case study sites similar to national trend from mid-2012 onwards; variations in trend prior to mid-2012.
- Case studies show changes in role for existing staff to support and document safe staffing, but limited number of new posts identified as related to safe staffing initiatives.
- Changes in information technology and management processes over time make it difficult to define changes directly attributable to Francis Review or safe staffing guidance.
- Substantial IT investment in electronic rostering and systems to collect and collate patient acuity data, supported by analytical staff to collate and feedback staffing requirements.

9. Discussion of key findings

The research undertaken in this study, which started in June 2016, has produced a description and explanation of the implementation and impact of policies introduced following the Francis Inquiry to support the achievement of safe staffing in NHS acute hospitals. Through a multiple methods approach that combined documentary review, analysis of secondary data, a national survey and four case studies, we have mapped safe staffing policy development, described how policies been implemented, how implementation has varied, the costs and impacts associated with implementation, and considered the factors influencing implementation. We have examined the potential effects that safe staffing policies have had, looking directly at how staffing numbers have changed and more indirectly, looking at indicators of staff satisfaction and patient safety. Key findings from the study are summarised in Table 9.1. In the remainder of this chapter we reflect on the study findings, by considering them within the wider context of the NHS and health services policy in England.

Table 9.1 Summary of key findings in relation to research questions

1. How have safe staffing policies have been implemented by Trusts?	
What processes & systems are used to plan, monitor, review and report staffing levels?	→ Significant improvements have been made in the systems used to plan staffing and review adequacy (both on shift, between wards, across time and reported centrally). → Establishments are reviewed every six months. → Widespread consistent use of e-rostering and tools (primarily SNCT) to plan staffing and review deployment.
How have staffing levels changed? (nationally, locally)	→ RN numbers in acute sector of NHS have increased by 6.4% nationally, and between 6–31% at each of the four case studies, since 2013. → The volume of patients treated has also increased; analysis of national data of staffing relative to admissions revealed that levels have increased since 2012, marking a partial return to 2009 levels. → One in four Trusts reported that acute wards are routinely operating with 8 patients per RN on a day shift, or poorer staffing levels (1:8 was the level NICE highlighted as a risk level).
What variation between Trusts?	→ A survey of Directors of Nursing found variation in the reported CHPPD and skill mix achieved. → Lack of publically available data on new metrics (fill rates, CHPPD) prevents analysis of variation in nurse staffing levels between NHS acute Trusts.
2. What costs are associated with policy implementation at Trust level?	
Costs associated with processes/systems introduced Costs associated with changes in staffing numbers Net effect of changes in staffing and outcomes	→ We estimate that nursing staff costs increased by 15% from July-September 2012 to the end of 2017 (from £1.9bn to £2.2bn): RN costs increased by 12%, support staff costs increased by 30%. → Staff spending at case study sites was similar to the national trend from mid-2012 onwards, but with bigger variations in trend prior to mid-2012.

3. What have been the effects/outcomes of safe staffing policy implementation?	
Patients (e.g. patient safety incidents, patient satisfaction) Staff (e.g. staff morale, staff well-being) Any unintended consequences (knock on effects) of staffing changes?	→ NHS Safety Thermometer data shows a trend towards reduced proportion of patients with harms on 'nurse-sensitive indicators'. → The NHS staff survey shows an increase between 2011 and 2017 in the percentage of nursing staff agreeing that: *"there are enough staff at this organisation to do my job properly", and* additional paid hours worked increased in 2017 vs 2011.

4. How has the context influenced implementation of safe staffing policy?	
Reported barriers to implementing guidance Trust views of safe staffing guidance/policy	→ Difficulties with recruitment and a national shortage of RNs is a reported as a major barrier to achieving safe staffing. (The average RN vacancy rate reported in the 2017 survey was 10%). → Implementation of policy was influenced by: the clarity of the safe staffing policy message, degree of learning and innovation, use of tools and technologies, and credibility/reliability of data. → Implementation worked best when there was: a whole systems approach, alignment across organisational strategies and data systems, clearly defined leadership, shared sense of accountability, effective recruitment and retention, engagement with stakeholders, and high degree of goodwill. A lack of transparency and equity around staffing within organisations risked this goodwill. → Francis recommendations and NQB 2013 guidelines were seen as having been helpful by Directors of Nursing. The use of 'red flags' and reporting CHPPD were viewed less positively.

9.1 Revisiting research aims and objectives

The dates of the study – June 2016 to June 2018 – are key as they have a bearing on understanding the findings of the research and interpreting them. The current study was one of five that the PRP commissioned to examine the impact that policies arising from the Francis Inquiry have had on health services in England. The Department of Health (as titled then) invested considerable resource into responding to the Francis Inquiries and generating guidance and policies to address the shortfalls identified. The detail of the policy evolution pre and post Francis is described in Chapter 2. The core question the current study sought to address was: *"What difference have safe staffing policies introduced after Francis made to the achievement of safe staffing in the NHS?"* In order to discuss the findings from the research and consider the answers to this question, we need to start by understanding the policies and their connection to the Francis Inquiry.

The overarching motivation for commissioning research to examine policy responses to the Francis Inquiry was: "*We are interested in understanding how the Government's response to Francis has translated into action on the front line in the NHS, and whether this in turn has resulted into changes for the health and care system.*" (92). The original invitation to tender for research went out in November 2014 in what could be described as an 'immediate post-Francis' period. The invitation to tender focused on the two primary areas of policy connected to nurse staffing at that time: NICE guidelines on safe nurse staffing in adult inpatient settings (50) and NQB/CNO guidelines on staffing (10).

However by the time our proposal was submitted in December 2015 the policy landscape had already shifted. And during the course of the study both the policies and the context within which they sat continued to evolve. It became apparent at the outset of the study that we needed to undertake a 'policy mapping' exercise. This was an activity we expected to touch on briefly as part of the background, but became a work-stream in its own right, to try and document the evolving policy messages directed at Trusts that may have shaped the way in which they staff their organisations, and their ability to implement the original safe-staffing policies as formulated in the immediate post-Francis era. It frames our interpretation and discussion of findings.

9.2 Safe staffing policy formulated in response to Francis

The Francis Report drew attention to the vulnerability of nurse staffing decisions to internal and external pressures. The recommendations put forward suggested significant reform of the way staffing was to be established, monitored and managed and where accountability should sit. The recommendations went beyond improving how Trusts and plan and review nurse staffing but had implications for the visibility, accountability, and authority of the decisions taken. In contrast to the situation at Mid-Staffordshire, the policies sought greater transparency about nurse staffing reviews and implications for patient care, by making data on nurse staffing publicly available. Three core messages can be identified in the Francis Inquiries that informed the subsequent development of policy aimed at supporting safe staffing in NHS acute Trusts:

- The need for national evidence-based standards and processes for staffing that Trusts could apply to improve assessment of the nurse staffing required, and ensure planned staffing levels are adequate to meet patient care needs safely. This was principally taken forward in the recommendation that NICE review the evidence and develop guidance on safe staffing.
- A need to clarify accountabilities – this was a recurring theme in the Inquiry and was referenced across a number of recommendations. The NQB guidance published at the same time as the government's response to Francis in 2013, set out expectations of Trusts, and their accountabilities in relation to staffing.
- The need to make patient safety related to staffing a priority in a way that could prevent it from being compromised by external pressures, as had been the case at Mid-Staffordshire.

Since the study was first conceived in 2014, the range of policy messages that Trusts receive that impinge on nurse staffing have increased and diversified. Refreshed NQB guidance was produced and the Carter efficiency review prompted the introduction of the 'Care Hours per Patient Day' metric. The production of evidence based safe staffing guidance by NICE using an independent cross-sector approach was discontinued, and responsibility for nurse staffing guidance was moved first to NHS England and then to the new body 'NHS Improvement'. The NHS Improvement outputs, that ostensibly sought to build on NICE guidance, moved from 'guidelines on safe staffing' to an 'improvement resource' for safe and financially sustainable approaches to staffing. Despite the urgency and commitment that characterised policy responses to the Francis Inquiry, five years on policies for safe staffing in the NHS are described as having become more muted (93).

9.3 Responses to Francis & the principle of 'safe staffing'

Nonetheless safe staffing objectives that arose out of Francis, and the recommendations more generally, appear to have been well received by those included in this study. Other research has shown that policy post-Francis has been successful at increasing transparency, board accountability, giving patient experience and patient safety a higher order of attention on Trusts boards (94). In relation to nurse staffing, the Francis Inquiry and subsequent policy appear to have been instrumental in reinforcing the link between nursing staffing and patient safety, a principle that the term 'safe-staffing', now universally applied used within the NHS, embodies. The expectation of adequate nurse staffing to ensure patient needs are met safely is espoused in the 2013 NQB guidance, the 2014 NICE guidelines, the NHS constitution (95), NMC code of conduct (96), and the standards that are applied by CQC (97) to all providers of health care services (95,98,99). This expectation of sufficient nurse staffing to meet patient needs safely is summed up by the term 'safe staffing'.

The study findings suggest that the premise that underpins 'safe staffing' policy seems to have resonated with Trust boards and directors of nursing, and has triggered a shift in thinking: Directors of Nursing considered that Board level awareness of safe staffing as an issue has improved since Francis, and has been accompanied by Trust board investment in nursing. Increased awareness of safe staffing was not limited to the board room; Directors of Nursing surveyed were unanimous in their view that accountability for safe staffing was now a part of the culture at every level of their organisation. The majority also felt that the confidence of nursing staff to report staffing concerns had improved since Francis. This was also reflected in the realist informed case study findings.

However the term 'safe-staffing', which seems to succinctly make explicit the connection between nurse staffing to ensure safe patient care, is not without problems in terms of what it conveys and how it is understood. Whilst it has come to be routinely used by health service staff (and policy makers), patients and members of the public may have a different perspective on 'safe staffing'. Some participants in the case study highlighted that discussing 'safe-staffing' and policies of

publishing staffing levels, to help ensure they are safe, may alarm rather than reassure. Participants at our engagement with patients and public to discuss study findings were surprised that nurse staffing levels in the NHS could ever be anything other than sufficient for safety. Discussion exposed that an implicit assumption had been made that services are staffed to an agreed standard. As the participant in one case study site described it "*80 percent of patients come in assuming their care is safe*". That just as there are in a children's nursery or on board a plane, there would be regulations in place governing the number of staff, to ensure the number of RNs relative to patients is sufficient for safe care. The discovery that there is no minimum requirement and nurse staffing levels may sometimes fall below the level required to meet patient needs safely, was unexpected to members of the group, and provoked strong reactions. In a modern national health service they had believed safe staffing, as opposed to optimal or ideal staffing, would be the minimum standard set, not an aspirational goal.

9.4 Trust implementation of safe staffing policies

9.4 a) Implementation of safe staffing policies: changed processes

Trusts have responded to the expectations of the core policies with the result that the way they plan, review and report staffing has improved through the use of recommended tools and guidelines. This finding was consistent across all four case studies and was reflected in the national survey. Directors of Nursing nationally reported that planning and rostering of staff has improved since the Francis Inquiry; nine out of ten Trusts are reviewing nurse staffing levels every six months or more frequently (in line with the NQB expectation) and 98% are using the NICE endorsed SNCT or related tool to do so. In comparison, in 2010 we found that just 59% of acute Trusts used a formal acuity/dependency system to guide nurse staffing decisions – although most were using the SNCT or its precursor, the AUKUH tool (100). At that time just 36% were monitoring acuity/dependency daily to support responsive decision making on nurse staffing levels for each shift.

In all four case studies, Trusts had moved to using easily accessible, near real-time, integrated trust-wide electronic systems for rostering and monitoring staffing, which have enabled staffing decisions to be better supported. However a key issue influencing was the extent to which a 'whole-systems' approach had been possible. Keen and colleagues specifically examined the development and use of technology to enable quality and safety monitoring post-Francis, and reported that whilst Trust boards had taken advantage of the data generated from nationally developed systems to get assurance, infrastructure and systems for quality and safety data were fragmented (101).

Trust responses to staff shortfall both in the long and short term however appear to be relatively unchanged by safe-staffing policies. Whilst almost all had an escalation policy, what that entails varies in terms of who authorises final decisions, both in and out of hours.

9.4 b) Measures and reporting

The case studies showed that Trusts had adopted systems to proactively collect, collate and report staffing data. The widespread use of e-rostering systems and the increasing move towards real-time monitoring of staffing and patient dependency have allowed Trusts to review the need for and provision of staffing, and to identify shortfalls on a shift by shift basis. We have seen that data reported to the board are used to inform staffing reviews, looking across the organisation and across periods of time – in a way that had not been the norm previously. The new reporting requirements and improved data reporting have meant that nurse staffing levels are now routinely monitored by Trust Boards. Whilst some Trusts may have already been reviewing nurse staffing and nursing metrics at board level, the case studies suggest that the ability to readily provide data in a consistent format has improved the quality of data reporting and review, and this has contributed to board level awareness of safe staffing.

In addition to informing arguments for increasing nurse staffing resources, better tools and the use of credible data have provided a transparent rationale for difficult management decisions regarding staffing of hospital wards.

9.4 c) Accessing and using nurse staffing data

However, while progress has been made on measuring and reporting data related to nurse staffing, there are nonetheless some restrictions in the use that can be made of staffing data collected. Whilst the goal of introducing metrics such as fill rates and CHPPD is to increase transparency and improve services by monitoring and responding to challenges identified, the usefulness of data, and ability to interrogate it and learn from it, is constrained. The emphasis for these new metrics

has been on upward and outward reporting. Current 'fill rates' (percentage of shifts that had the intended level of staffing) are published on NHS choices for each site but without means of reviewing past data, or benchmarking. CHPPD data are reported centrally, and fed in to the NHS Improvement resource, the 'Model Hospital' (102) – but similarly this data cannot be publicly accessed to examine difference between Trusts or trends over time.

9.5 Factors that have influenced Trust response to safe staffing policy

Local policy implementation has been mediated by multiple factors, including local organisational context and leadership. Consequently, what was observed within the four case studies was a picture of the complexity of the nurse staffing system, making it difficult to attribute changes to the impact of specific factors or policies. Nonetheless the realist informed evaluation identified six contextual factors as key to the resultant responses and outcomes of safe staffing policy implementation in the Trust case studies:

- Organisational histories around safe staffing, including engagement in research.
- Value attached to professional judgement.
- Integration of data around a 'whole' safe staffing system.
- Cross-organisational goodwill and collegiality around nurse staffing.
- Clear, transparent and equitable leadership around safe staffing.
- Availability of training, ongoing support and resources that enable staff to make best use of available technologies.

How useful Trusts think the policies have been, and how they responded would appear to depend in part on their starting point – the prevailing culture, use of technology, systems in place for planning staffing, resource levels, nursing leadership and board focus on care quality. But in particular, their response to and views of safe staffing policy is likely to have been influenced by the nurse staffing levels and skill mix they started with, which we know from previous research varied hugely between NHS hospitals (100). In 2010 the average day time RN staffing level for general acute wards ranged from 5 patients per RN in the best staff hospitals to more than 10 patients per RN in the worst staffed hospitals (100).

The NICE guidance suggested that instances of 8 patients or more per RN should be regarded as a warning level, prompting review of RN staffing. For Trusts (or wards) that were starting from this level (or poorer staffing) as their norm, the reference to 1:8 as a trigger for review may have provided leverage to increase nurse staffing numbers and increase levels. Perceptions of the usefulness of safe staffing guidance – as captured through the survey of Directors of Nursing – has depended in part on Trusts' overall staffing context. For example Trusts with lower staffing (based on average CHPPD) were less likely to have regarded the CHPPD metric as helpful in achieving safe staffing than those with better staffing levels. Similarly the NICE reference to 1:8 as a 'minimum' triggering review, prompted concern from chief nurses at the relatively well resourced 'Shelford' group of hospitals (ten of England's "leading Academic Healthcare Organisations"), who wrote: *"We welcome the move to mandate appropriate levels of staffing...we are cautious about achieving this by a minimum ratio number of nurses to patients. There is a danger that a mandated staffing level may be perceived as an optimum staffing level"* (103).

9.6 Changes in nursing workforce, staffing levels and skill-mix

The net effect of changes made has been an increase in the whole time equivalent number of nursing staff employed in the NHS acute sector since 2013; by 10% for registered nurses and 30% for HCAs/support staff. Some of this increase corresponded to a return to the numbers pre 2010, but nonetheless there has been a net increase in the number of nursing staffing employed in the NHS. Proportionately, support staff employment has grown more, resulting in a slight lowering of skill mix; RNs account for 66% of nursing staff in 2017 compared with 69% in in 2013. The increase in nurse staffing numbers would have been greater were it not for problems filling RN posts, a major constraint reported throughout the study. The average RN vacancy rate reported was 10%, which is consistent with other data sources (104) p2.

The overall increase in nurse staffing numbers seen both nationally and locally in the four case study Trusts has coincided with an increase in the number of beds and number of admissions i.e. the total volume of care provided. Taking activity levels into account, using measures such as nursing hours per patient day, we see that both locally and nationally there has been an overall improvement in average nurse staffing levels.

The study found a perception that there was less variation in staffing levels: the gap between the worst and best staffed shifts, wards and hospitals, having narrowed. Within the case study Trusts, regular assessment and reassessment of the levels of nurse staffing required has resulted in some redistribution of staff between wards, in an effort to avoid the 'red' (on red, amber green dashboard systems many use) levels of staffing, and to minimise the risk of unsafe staffing levels. Through daily monitoring and review, there is a perception that RN staffing levels are less extreme; on dashboard systems using a traffic light approach, perception is that there are less red or green shifts/wards, and more amber. However in assessing the significance of this, we need to consider how the 'evening-out' of staffing levels across a hospital to avoid patently unsafe levels has been achieved. The principal mechanism used to respond to shortfall, especially since access to temporary staffing has been curtailed, has been through the movement of staff to 'cover' a ward that has insufficient staffing. As the case studies revealed, whilst this provides a short term solution to the problem, it is generally unpopular with staff and potentially reduces staff productivity. Staff deployed on a ward that is not their own, in a different specialty that does not utilise their expertise, are not able to provide the same level of performance as staff who have the knowledge and the skillset required for the mix of patients and conditions treated in that specialty. Reflections from the realist evaluation questioned why staff transfers were so commonly needed: does it reflect a shortcoming in the planning system used that results in frequently insufficient staff, or insufficient establishment to cope with staff sickness and current vacancies? Further, the practice of moving staff from 'green' to 'red' areas potentially creates more 'amber' contexts, the consequences of which are not well understood.

9.7 Estimating the benefits of improved nurse staffing

During this same period, we have seen improvements in NHS safety thermometer data and in relevant items of the NHS staff survey. These data however cannot be regarded as demonstrating that improvements are due to increase in nurse staffing numbers. Based on a review of the research evidence, it is however a reasonable supposition that where there have been increases in nurse staffing levels there will be associated improvements in outcomes. Our review of evidence on nurse staffing and patient outcomes (7), built on a previous systematic review (4). Whilst almost all of the research in Kane's review had come from North American studies, research from other countries has increased, including the RN4Cast study, drawing on data from 12 European countries including England (5,105). Higher registered nurse staffing levels are associated with more complete care (6), a reduction in patient harms (7), lower hospital related patient mortality (3,105,106), and greater levels of staff satisfaction (5). A longitudinal study which used shift-by-shift data on staffing levels is particularly note-worthy, as it established that increases in mortality had followed periods of low staffing (107), supporting the inference of causality. Our 2017 paper based on the RN4Cast study supports this inference further, by affirming the relationships in a possible causal pathway: lower RN staffing lead to higher levels of missed care, higher levels of missed care lead to higher levels of patient mortality (106). In terms of the estimated size of effect, an increase in a registered nurses' workload by one patient increased the likelihood of an patient dying in hospital 7% (105).

9.8 Estimate of cost

- → Estimated nursing staff costs increased by 15% from July-September 2012 to the end of 2017 from £1.9bn to £2.2bn. The case studies showed that there had been changes in role for existing staff to support and document safe staffing, with a limited number of new posts identified as related to safe staffing initiatives. Changes in information technology and management processes over time make it difficult to define changes directly attributable to the Francis inquiry or to safe staffing guidance. Substantial IT investment has been made in electronic rostering and systems to collect and collate patient acuity data, supported by analytical staff to collate and feedback staffing requirements.

In reviewing the assessment of costs we need to be mindful that it is just that: an assessment of the resources associated with implementing safe staffing policies, not a full economic evaluation using a cost benefit analysis. Others have endeavoured to review the economic value of professional nursing in terms of reduced patient complications and shorter lengths of stay associated with improved nurse staffing levels (21), and more recently a rapid review of the evidence on the effectiveness and cost-effectiveness of nursing was undertaken for the WHO (108)(Chapter 10, p241).

9.9 Views of policies and staffing measures introduced

Trying to determine whether changes revealed in the study can be attributed to nurse staffing policy and guidance applies to changes made in the systems used, as well as to the overall numbers of nursing staff employed. In a vast, complex, multidimensional and multi-organisational system such as the NHS, endeavouring to determine the impact that any single intervention or policy may have, isolating it from the many other factors and forces in play, is challenging. *"Perhaps the hardest thing is to see how in truly complex situations we can make sense of things, and to accept that complex issues can only be understood in retrospect. Only plausible explanations can be developed, not predictive theories. This does not mean that health policy and systems research reverts to journalism. Rather, building upon what is known and learning while doing becomes important."* (109).

To go some way to address this challenge we asked those with principal accountability for safe staffing – directors of nursing – for their views of the policies and guidance and the extent to which they had been helpful in supporting changes to achieve safe nurse staffing in their Trust. The Francis recommendations generally were viewed as having been helpful in achieving safe staffing. More specifically, reporting staffing levels to the board was seen as having been very helpful or helpful by four out of five Directors of Nursing. In contrast reporting of the CHPPD metric was least likely to have been regarded as having been helpful. Views of the usefulness of policies were related in part to current staffing levels; Trusts with lower levels of CHPPD were more likely to regard the use of 'red flags' and mandatory reporting of nurse staffing fill rates as helpful compared to those who had higher CHPPD levels. This reinforces the case study findings related to the use of better quality data as 'ammunition' in the 'fight' for improving staffing levels to ensure they are safe.

9.10 Have safe staffing levels been achieved in NHS acute Trusts?

The success of safe staffing policy can be assessed not only in terms of how Trusts have interpreted and implemented safe staffing policies, but also by examining the extent to which policies introduced post-Francis have enabled Trusts to achieve safe nurse staffing levels. Are safe staffing levels being achieved on general wards in NHS acute Trusts?

In March 2017, the Care Quality Commission published a report on inspections of NHS acute Trusts since June 2014, when the NICE safe staffing guidelines were introduced (110). Three broad areas were looked at when assessing safety: culture, staffing, and environment. The report described unprecedented challenges facing NHS hospitals. Rising demand coupled with economic pressures were *"creating difficult-to-manage situations that are putting patient care at risk"* (110) p4. High bed occupancy, an overall decrease in the number of available beds, and shorter lengths of stay combined to increase demand intensity. Whilst most hospitals were described by the CQC as using 'credible evidence-based tools' to determine staffing, difficulty filling posts had caused challenges, with gaps filled by temporary staffing. Where established guidelines on levels were already in place, for example critical care, the inspectors generally reported *"better and more consistently safe staffing levels"* (p24). CQC concluded that while improvements in staffing had been observed, "*ensuring that there are enough staff with the necessary skills to provide consistently safe care remains a challenge for acute trusts…staffing levels and skill mix remain an issue in some services and hospitals*" (p23).

The difficulty in achieving safe staffing levels were evident in the current study. The realist evaluation described multiple strategies to cope with and mitigate against staffing shortfalls. Across the four hospitals senior nurses reported that sometimes an imbalance between the staffing needed and that provided nonetheless occurs and, in their opinion, there are times when wards are not operating with safe nurse staffing levels.

This was reflected in the responses to our national survey. NICE guidelines for safe staffing on adult ward recommended that: *"When the available registered nurses for a particular ward (excluding the nurse in charge) are caring for more than 8 patients during the day shifts, the senior management and nursing managers or matrons should : closely monitor nursing red flag events, perform early analysis of safe nursing indicator results, take action to ensure staffing is adequate to meet the patients' nursing needs if indicated by the analysis of nursing 'red flag' events and safe nursing indicators"* (50) (*section 1.4.4*).

One in four Trusts responding to our survey in March 2017 reported that their wards were often (65% of the time or more frequently) staffed with a ratio of more than 8 patients per RN – the level that had been associated with increased risk of harm, and was set as a trigger for review. Given that Directors of Nursing reported that planned staffing is achieved on 93% of shifts, it would seem that in these the 'level associated with risk of patient harm' is not the result of a unexpected shortfalls but is the staffing level that has been planned.

9.11 Constraints in achieving safe staffing: external factors

External limitations have severely impinged Trusts' abilities to implement safe staffing policy. A national shortage of registered nurses hampered Trusts' ability to fill the number of nursing posts that they identified – using the NICE endorsed systems – as being needed to meet patient care needs and provide 'safe staffing' levels. A huge challenge has been the labour market context: the number of registered nurses has been, and continues to be, insufficient to meet demand. The need for additional nursing staffing identified by Trusts through the use of improved nurse planning systems, are translated into posts, but without sufficient supply of registered nurses to fill them. The CQC reported: "*recruiting the right number of staff to consistently provide the level of staffing needed is a problem, with many hospitals relying heavily on temporary staff to make up numbers*" (p24). So despite overall increases in nurse staffing numbers, the ability to recruit staff is reported to have deteriorated.

The Migration Advisory Committee (MAC) expressed frustration at the NHS's ongoing failure to educate the number of nurses needed to provide care, and the unabated use of nursing staff trained outside of the UK to make up the difference (111). There are indications that in the future this will no longer be a viable mechanism to supply the NHS with the registered nurses it needs. Recruitment of nurses from outside the UK has become untenable as well as (in the eyes of the MAC) undesirable; the number of entrants to the NMC register from outside the UK has fallen. And for the first time, in 2017 the total the number of all nurses leaving the NMC register exceeded the number joining it (112). The national shortage of registered nurses has prompted a Health Select Committee inquiry; the report published in early 2018 concluded that there was a need to: "expand the nursing workforce at scale and pace" (113,114), a point reinforced in June 2018, by Sir Ian Cumming, Chief Executive of Health Education England, who is reported as saying that the NHS must 'turn on all the taps' in order to fill significant workforce gaps (115). He went on to warn that NHS workforce needed to grow by between 3-5% a year for the next decade but at current levels of workforce supply, it is on course to fail that target.

As Buchan described five years ago in 2013 (116):

> "*The NHS workforce planning approach used for a time during the 1990s highlighted the risk of contributing to a national undersupply with a locally led approach to planning. When costs are constrained, individual employers can take a narrow, short-term, localised view of their future requirements, without taking sufficient account of changing demand (e.g., when patients' requirement for nursing care increases with faster patient throughput) and of labour market dynamics. The cumulative effect at national level – unless there are sufficient national checks and balances – can be a significant underestimate of future requirements for staff*"

A consequence of the national shortage of registered nurses has been an increased reliance on support staff: health care assistants, health care support workers, and the new trainee nursing associates. This is evident in changes in skill-mix nationally, reported in the survey, and in the case studies. It is also apparent in comparison of 'fill-rates'; on average planned staffing that was achieved for 95% of RN hours scheduled, compared with 106% of HCA scheduled hours. Increasing the numbers – and skill levels - of nursing support staff has been adopted as NHS England and Health Education England policy; a new support role, that of the 'nursing associate' has been introduced to "*bridge the gap*" between HCAs and RNs (117,118).

9.12 Resourcing safe staffing policies

A recurring theme across the study has been lack of resource to deliver safe staffing. Following the Francis Inquiry a vision of safe staffing was translated into policy and guidance, but was not accompanied by strategies or policies to enable an increase in staffing in places where RN levels were below the level assessed as being needed. The resource implications – in terms of workforce supply and funding for new posts – of implementing NICE guidelines and reducing unsafe staffing levels were not estimated, nor committed. The lack of forward planning to consider the resources needed to improve nurse staffing levels to safe levels across the NHS has become evident; the majority of Trusts are reported to be in deficit (119) and a widespread shortage of RNs continues, and has been the subject of parliamentary inquiry (120). The National Audit Office commented that workforce plans have been driven more by cost than by assessment of staffing need (121). Their report stated that "*Trusts' workforce plans appear to be influenced as much by meeting efficiency targets as by staffing need*" and were being driven by financial planning imperatives including *"significant recurrent pay savings"* (p8). The report warned that the *"likely impact on spending of the* [NICE staffing recommendations] *was not well understood"* (p5) noting that no extra funding had been allocated centrally to cover any additional costs associated with safe staffing. Indicators of nursing shortages were reported, based on 61% of temporary staffing requests in 2014-2015 being for covering vacancies.

More recent policy messages have emphasised the need for restraint in order to ensure financial sustainability. The connection between finances and staffing was made more explicit in the refreshed NQB guidance and development by NHS Improvement of 'safe and sustainable' resources for staffing. The revised guidance retained the basic elements but added a focus on staffing *"within available resources"* (65) , improving workforce efficiency (through changes to skill mix, new models of care, new ways of working, and flexibility in rostering and distribution of staff), and improving monitoring and reporting. The guideline referred to a letter to Trusts from the CE of NHS Improvement and the Chief Inspector of Hospitals stating that *"provider leaders have to deliver the right quality outcomes within available resources"* (65) p5: *"Boards should ensure there is sufficient and sustainable staffing capacity and capability to provide safe and effective care to patients at all times, across all care settings"* (p.15), [and acknowledging that] *"NHS provider boards* [would need] *to make difficult decisions about resourcing as local Sustainability and Transformation Plans are developed and agreed"* (p9).

In response, Richard Murray, the King's Fund's director of policy commented: *"Three years on from Robert Francis's report into Mid Staffs, which emphasises that safe staffing was the key to maintaining quality of care, the financial meltdown in the NHS now means that the policy is being abandoned for hospitals that have run out of money."* Murray cited in (122). The most recent policy document was published by the NQB is in the form of a supporting 'resource'(123). Neither the 2016 nor 2018 policies significantly advance the guidance provided by the 2014 NICE guideline but they have reinforced provider responsibility and accountability to balance staffing investment with other obligations. The requirement that Trusts both deliver safe staffing in every situation, and remain within funding envelopes, is a source of tension identified in the case studies and the survey of Directors of Nursing.

Financial consideration has thus been introduced into safe staffing policy post-hoc as the perimeter fence that Trusts must work within, rather than at the outset, as an assessment of the investment required to bring nurse staffing levels up to safe levels, based on the guidance and policies developed after Francis.

The challenges of planning nurse staffing and ensuring it is sufficient to meet patient needs safely is an issue across the globe. The Department of Health Ireland published a 'Framework for Safe Nurse Staffing and Skill Mix' in 2016. The initial report (from the office of the CNO with the support of the Health Minister) set out an evidenced based approach to determining safe nurse staffing and skill mix levels for medical and surgical wards (124). The final report details the efficacy of the pilot of the framework (evaluated by independently by a research team), and crucially sets out what is needed to enable national implementation, including a consideration of costs and benefits. The nurse staffing policy is underpinned by the introduction of an 'invest to save' model: "*The reference to "save" in this context is the widest definition that includes efficiency savings along with improvement savings, for example safer better outcomes for patients which is the fundamental focus of the framework. This is a model whereby funding at the outset is provided to support initial investment upon which to then extract savings/efficiencies at a later stage as wards are stabilised" (125) p49.*

A strategy for nurse staffing Northern Ireland, with foreword by both the CNO and the Minister for Health, included the need for investment to improve nurse staffing levels explicitly: *"presenting clearly the need for investment in nurse staffing, within changing service profiles, particularly in response to incremental service growth and in developing new services"* (126) Foreword p8.

Lack of resource to support the delivery of safe staffing policy has influenced the ability of Trusts to achieve safe staffing. Trusts have increased nursing staff numbers in an effort to achieve safe levels. However the effect of doing this without increased resources may be one of the factors that has contributed to the fact that for the third year running, the majority of Trusts NHS Trusts have failed to meet key targets, and NHS deficit levels have increased (127). The predictable – given the low starting point – demand for a greater number of RNs was thus neither planned for nor resourced. Safe staffing policy led by the Department of Health appears not to have been synchronised with Treasury commitments and the funding of national workforce plans (128), leaving individual Trusts with the objectives and responsibility for safe staffing, but without the resources to deliver it. Others have commented on the challenges of policy dissonance. Examining response to policies since Francis, Chambers and colleagues concluded: *"overlapping, voluminous and sometimes contradictory policy and guidance from central NHS bodies can also be an obstacle"* (94) p16.

Whilst there has been significant progress in terms of attention given to staffing and formalising of systems and processes, there have been and remain, significant constraints to achieving safe staffing in the NHS. The pressures on Trusts and the financial challenges of the NHS are a cause for concern, as Francis commented in late 2017:

> *"We've got a virtual storm of financial pressures, increased demand, difficulties finding staffing, and pressure on the service to continue delivering. And some of that sounds quite familiar – as it was, those were the conditions pertaining at the time of Mid Staffordshire (129)*

9.13 A way of interpreting policy response

Kingdon put forward a model of public policy which recognises that the policy process can be both messy and unpredictable (130,131). Even when driven by strong public concern and with high sector support, policies goals may fail to be achieved, if the conditions for success are not present. In the Kingdon model, successful implementation of policies requires three things: that the policy addresses a problem that is recognised as being significant, that there are viable solutions available that are congruent with public and policymaker values (132), and that there is a conducive political climate.

In relation to nurse staffing policy, the alignment of all three was evident in the initial post-Inquiry period. Events at Mid Staffs provided a powerful 'master narrative' (133) that focused national attention on the problems of unsafe staffing levels and stimulated a growing understanding of nurse staffing as a policy problem. After many decades in the health sector policy hinterland, safe nurse staffing became a widely recognised policy problem for the NHS. The Mid Staffs scandal and the two Francis Inquiries were vital in getting nurse staffing on the policy agenda, and progress has been made in the development of structures, processes, tools and technologies for safe staffing policy across government and the health sector.

However, government signals that any policy solution would need to be reconciled with other priorities, particularly funding caps, challenged the early post-inquiry government narrative that, *"patients come first in everything we do…we put the needs of patients and communities before organisational boundaries*" (9). Tension between the desire to resolve 'safe staffing' and the practical implications of doing so emerged. Despite advances in establishing what good safe staffing practice looks like (e.g. evidence based, accountable), as the policy evolution entered the solution-building phase, it became apparent that an 'off-the-shelf' solution did not exist. While there was strong evidence that nurse staffing levels impact on care quality and patient outcomes, this was not readily translatable into practical guidance. The lack of clear 'solutions' combined with a competitive policy arena, a context of nursing workforce shortages, and fiscal challenge, have resulted in a gradual dilution of national safe staffing policy.

That said, there is little evidence that support for safe nurse staffing policy has fallen victim to what Cairney describes as the 'lurching attention' of the sector (134). Safe nurse staffing policy continues to be viewed as a desirable policy objective, valued across stakeholder groups. References to 'safe staffing' are embedded in key policy documents and there is an ongoing programme of NHS activity and review. However competing priorities, particularly financial constraints, exert pressure towards closing the policy window and shortages in nursing supply potentially obstruct the achievement of policy goals.

9.14 From inquiry to change via policy: checks and balances

A key recommendation from Francis was that NICE develop guidance for safe staffing, in order that the recommendations generated could be based on a review of evidence and be developed independently, as with other health care guidelines. The cessation of NICE's responsibility for developing safe staffing guidelines and transfer to NHS bodies, who have responsibility for other performance measures specifically funding, productivity and cost control, marked significant shift. In consequence, while Trusts have taken on board and implemented guidelines and policies on safe staffing, their ability to staff according to the levels indicated has been hampered; once again staffing decisions are constrained by external pressures. Francis' suggestion that minimum staffing standards could be looked at was not picked up in any subsequent documents or policies. The issue of mandated minimum nurse staffing levels (nurse: patient ratios), was excluded from the work NICE commissioned by the Department of Health to undertake to develop safe staffing guidelines. Recommendation 93 of the Francis Inquiry proposed that the NHS Litigation Authority provide an overview of Trusts use of evidence based staffing, requiring that a risk assessment be undertaken if changes to the number or mix of staff are made (43) p94. However this also was not implemented.

In thinking about the lessons learnt from public inquiries, Norris and Shepheard conclude: *"Many inquiries have delivered valuable legislative and institutional change... in some cases they have had a profound effect on behaviours and attitudes.... But overall, the formal checks and procedures we have in place to ensure that public inquiries lead to change are inadequate."* (135). Arguably the checks and balances required to safeguard safe staffing from compromise have not been instigated, allowing the changes made to only partially meet the objective of improving nurse staffing levels in NHS acute hospitals, and reduce the risk of avoidable harm to patients.

10. Conclusions

In examining how policies have been implemented, and the potential consequences of implementation, we may fall into thinking about policy as a set of prescribed goals and their implementation by Trusts, simply as compliance with the prescription. In the case of safe staffing however, policy made following the Francis Inquiry has arguably acted as a lever and a catalyst for change. It has led to changes in the processes, technologies and systems that support safe staffing as an outcome. Safe staffing policies have made explicit the link between nurse staffing and patient safety. The concept of safe staffing has become embedded in organisational thinking in acute NHS Trusts from board level downwards and the policies and guidance have led to better systems and better data, creating infrastructure and processes that allow each organisation to be better informed about the staffing decisions they make. Based on the study findings, we can conclude that safe staffing policy has led to the following:

- Impetus for change: the Francis Inquiries created a powerful focus and impetus for accelerated change, which the policies that were developed built on.
- System response: evidence of substantial responses in the system particularly in improving systems and processes to ensure staffing levels sufficient to meet patient needs safely.
- Shift in thinking: most significant response is the heightened awareness of staffing as a safety issue, from ward to board.
- Increase in RN nursing posts: an increase in RN numbers employed and a shift in deployment of resources indicates a reversal of the downward trend seen pre-Francis. Add to this the number of posts that remain unfilled, and it is apparent that the planned increase in acute Trust RN staffing levels is greater still.
- **Increase in nurse staffing levels:** as measured at Trust level.
- **Positive signs:** signs of slight improvement seen across a variety of performance measures in acute Trusts, such as a reduction in patient harms.
- **Knock on effects:** outside the general acute hospital sector, there has been less or no increase in nursing numbers since Francis; a steady decline in district nursing and mental health numbers has continued. Whilst there is no evidence of 'robbing Peter to pay Paul', nonetheless resourcing staffing in community and mental health services has not received the same degree of attention from either public inquiry or health service policy.
- **Challenges to sustaining progress:** evidence that resource limitations (workforce supply and funding) have been, and continue to threaten the achievement of safe staffing in general acute hospital wards.

We have seen a shift in resource towards 'safe staffing' in adult acute hospitals, as evidenced by everything presented here. However, what is less certain is firstly the extent to which this is directly related to the implementation of safe staffing policy and, secondly what the consequences of this shift may have been. Looking at the workforce outside of the acute area, where there has been less scrutiny and policy attention around staffing, we do however see a reduction, rather than an increase in nurse staffing, suggesting the policies may have succeeded in bringing about better staffing levels in acute settings.

The increasing pressures observed and described throughout the study suggest that the changes we have witnessed may not be sustainable. Concern about lack of sustainability is apparent in the refreshed guidance and policy on safe staffing. In the short term, the increased demand for nurse staffing had not been sufficiently anticipated and thus was not accompanied with investment to increase the workforce. Increasing supply does of course take time to generate, leaving a short term shortfall; however an insufficient increase in the numbers of registered nurse educated at a time of increased demand has shifted a short term shortfall into long term shortage that is predicted to continue beyond 2021 (115,136). The challenge going forward is thus to find ways of minimising the risks arising from competing priorities and external constraints, to ensure that the progress made on implementing safe staffing policies is not lost, but continued.

The result of operating in this constrained labour market has been that there is a perception that justifies policies of 'making do' with less RNs based on an inability to recruit; a 'needs must' approach that is reactive to the situation. However the danger of this response is that it shifts the debate further from financial management and planning, based on estimating the resource needed to deliver safe and effective care, towards decision making that is constrained by resource shortage – both in terms of money and supply.

The graphic account of events at Mid Staffordshire documented in the Francis Inquiries, and the diagnosis of inadequate staffing as a contributing factor, provide a haunting reminder of why, in the interests of patient safety, nurse staffing levels must be considered carefully. The safe-staffing policies developed post-Francis set out a vision for safe staffing to which Trusts have responded as best they can. Despite competing priorities within a shifting contextual landscape, safe staffing as a concept has become embedded and striving to achieve it continues to be high on Trust agendas. Yet the checks and balances required to ensure longer term achievement of the Inquiry recommendations through policy are absent or weak, threatening the sustainability of the operational changes made to foster better approaches to ensuring nurse staffing levels are safe.

In conclusion, the Francis Inquiry and subsequent policies successfully enabled Trusts to better identify their need for nurse staffing to ensure patient safety. But it is a demand that the system has been ill prepared to meet, leaving NHS Trusts with a heightened awareness of the need for more staff, but without the means to fully respond.

11. Implications and next steps

11.1 Implications for practice

At the Trust level, the study findings suggest that successful implementation of safe staffing policies, and improvement of decision making and planning to avoid a staffing shortfall, is dependent upon the presence of a number of contextual conditions. Applying the lessons learnt from the study would indicate that successful implementation of policy requires Trusts to focus on the following key areas:

a) Value, leadership, priority

- Value attached to professional judgement, and making good use of it.
- Clear, transparent and equitable leadership in the Trust around safe staffing.
- Organisational priority given to quality and safety (and balancing against financial bottom-line).

b) Use of systems, technology and data

- Use of more and better data of factors associated safe staffing within the workforce system. More data informed discussions to support decision making about safe staffing, and with greater impact.
- Integration of data around a 'whole' safe staffing system.
- Boundary spanning activity (across different stakeholder groups) around safe staffing technologies. Mitigating the risks of fragmented infrastructure by enabling harmonisation and a more holistic view.
- Availability of training, ongoing support and resources that enable staff to make best use of available technologies designed to improve the planning, reviewing and reporting of nurse staffing.

c) Attending to the wider context

- Attention to wider staffing issues (recruitment and retention / workforce re-design), and the use of innovation and creativity in overcoming challenges (e.g. in the use of incentives).
- Better use of data, particularly to support shifts in thinking to allow a more nuanced focus on quality and patient safety (whole systems thinking not purely a 'numbers game')

d) Good will and equity

- Cross-organisational goodwill and collegiality around nurse staffing.
- Equitable decision making and resourcing across the Trust (to foster ongoing goodwill and commitment from staff).

11.2 Implications for policy

Whilst many of the implications described above for practice may have implications for policy, the study findings point to a number of areas that are more policy focused

Anticipating the workforce implications of policy & practice changes

The most significant barrier to safe staffing raised across the study has been the shortage of registered nurses to staff to the levels assessed as being needed, and to fill establishment posts. It is not clear for the current study (as this was not its remit) the extent to which the ongoing national shortage of registered nurses is due to: poor workforce intelligence at local, regional or national level, or all three; a lack of sophistication in the workforce modelling undertaken; or a failure to respond to the intelligence gathered and predictions made, through an investment in increasing supply.

The upshot however is that a predictable demand in nursing workforce was neither predicted nor resourced. To improve the labour market conditions that Trusts operate within, and to allow safe staffing policy to be more fully implemented will require those with responsibility for the management of health services nationally to consider what has been going wrong and how current practice needs to change so that nursing workforce planning is done well, and recommendations are heeded. The success of much health service policy, but particularly safe staffing, rests on having sufficient workforce relative to planned services, to ensure patients receive the nursing care required. The study findings suggest that workforce implications of health service policies and new models of care provision need to be factored into workforce plans. The implication is that for policy to be implemented successfully, workforce requirements need to be determined based on an assessment of the population's need for health services, and with detailed insight into the planned provision of care (both within and outside of NHS), and being fully cognisant of workforce supply factors (e.g. activity rates, retirement ages, wastage and turnover, etc.).

Clarity and congruency in policy messages

- A challenge in implementing safe staffing policy for Trusts has been the variety of guidance produced, each pitched slightly differently. Attempts to 'clarify' the policy message through refreshed and reissued guidance, produced by an increasing range of national bodies as opposed to remaining with NICE, has resulted in a degree of dissonance and dilution in the original message on safe staffing. Whilst the impetus for change post-Francis was strong, the policy response to recommendations may have had greater impact if specific guidance produced had been carefully developed in partnership, drawing on the evidence and involving stakeholders (including patients and members of the public), to arrive at workable policies that not only set out a vison for safe staffing, but a viable financial and workforce plan for delivery.
- The need for clarity and congruency has more general implications for policy development in health services in England.

High quality and accessible data for benchmarking, evaluation and research

Implementation of safe staffing policy has led to an increase in the range and volume of workforce related data collected by Trusts. There is potential for these data and associated metrics to be more fully utilised. Findings suggest there is an appetite for more sophisticated 'peer' benchmarking that allows staffing and outcomes to be compared at a more granular level, taking account of key features such as specialty, setting (inpatient, outpatient, Trust wide, community), and geography. Data that are submitted to national repositories could be made accessible for research and audit purposes to maximise the learning that can be gleaned from the data captured and take data use beyond Trust benchmarking. This could enable more sophisticated and targeted strategies for human resource management and workforce planning in health services to be developed (for example in relation to recruitment and retention), which are underpinned by high quality data, robustly analysed using the best possible techniques.

11.3 Future research

This study has described the extent and nature of implementation of policies aimed at ensuring safe staffing in the NHS. What it has been possible to evaluate in this study has been limited by currently available data. One of the goal post-Francis was to increase transparency around key issues such as staffing levels. Progress has been made with systems used and data generated, and two new metrics have been introduced: 'fill-rates' (comparing actual staffing to that planned), and Care hours Per Patient Day. Yet even within the current two-year study that was explicitly resourced to examine what the impact policy may have had on nurse staffing levels, it has been challenging to get an accurate assessment of RN staffing levels (in terms of the RN hours per patient day, or the number of patients per RN at different times of the day) and to examine how staffing at the ward-shift level has changed, using routinely collected data. The EU-funded RN4Cast survey conducted by King's College London and the University of Southampton in 2010 pre-Francis, provided a cross-sectional account of average general medical-surgical ward staffing levels in a sample of 40 hospitals, in 32 Trusts (100). It provided a description of shift level staffing and the extent to which it varied, whilst also enabling the prevalence of missed care to be examined (6), and levels of registered nurses and support staff to be related to patient mortality (3). Replication of this type of study would enable a post-Francis assessment of nurse staffing, the context of care, and nurse perceptions of care quality to be garnered.

The current study also reinforces the need to address some of the knowledge gaps previously identified, in terms of lack of research evidence that has sufficient specificity and utility to enable 'safe' and 'effective' levels of staffing and optimal mix of skills to be identified. More specifically:

- Limited research undertaken in the UK examining the relationships between different staffing configurations and patient safety outcomes.
- Need for the development of more time-sensitive indicators of nurse staffing adequacy and consideration of quality markers as opposed to failure measures e.g. measures of missed care (such as 'Care Left Undone Events' used in Ireland) that could be routinely used should be investigated and validated by exploring their associations with outcomes.
- Research evidence needed regarding the impact of skill mix changes and new models of care.
- Lack of economic evidence on nurse staffing and skill mix to inform NHS workforce decision making and policy.
- Validity and reliability of nurse staffing tools and approaches to determine staffing (including professional judgement) and cross validation of assessment of workload and staffing needed.
- Reliance on evidence based on cross-sectional data, lack of intervention studies or trials to examine the impact of changes to nurse staffing, or the impact of using different systems to plan and review nurse staffing.
- Lack of evidence that examines nurse staffing in relation to wider multidisciplinary team, including medical staff, AHPs, and administrative support staff.

11.4 Disseminating findings

Our PPI and service representatives on the project steering group will guide us in developing a dissemination strategy and outputs for different audiences. We have already sought out views of patients and members of the public at our engagement event in May (see Appendix). Two other engagement events have been held, one with policy makers and stakeholders (April 2018, Department of Health & Social Care), and one with a cross section of nurses (May 2018, RCN Congress, fringe event).

In addition to the current full final research report that details all the work undertaken (including supporting appendices), we have included an Executive Summary. The summary could be developed for use separately from the report as a briefing paper for NHS managers and policy makers. We have prepared a set of PowerPoint slides covering the main findings from the research which we have used at three engagement events, but can be shared more widely once the findings are made publicly available.

Interim findings (primarily from the survey) were shared at the Health Service Research UK conference in July 2017, as part of a 'Mid-Staffs Legacy' symposium. We plan to submit abstracts for oral presentation for at least one national conference and one international conference, targeting conferences with a policy/health services interest and another with a nursing workforce/patient safety focus. We plan to prepare at least two academic papers and publish these with 'open access' in high impact journals.

We will prepare a short two sided summary of the study as an 'Evidence Brief' and disseminate the study findings and implications via health and nursing journals such as the Health Service Journal, Nursing Standard, Nursing Times and via the NIHR dissemination centre. If there is interest, we could also present findings to the 'Parliamentary and Scientific Committee' (which we have previously attended to contribute to discussion on Patient Safety), or to other parliamentary groups or bodies leading on workforce policy.

We will use our established social media networks, which include organisational and personal professional twitter accounts with substantial followings, to promote all project outputs.

Finally, we have offered each of the case study Trusts a feedback session to share the results with study contacts and Trust staff. We will also volunteer to write a short piece that can be shared via Trust newsletters.

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Appendices

Appendix 1: Project information sheets

Safe staffing policy implementation project

Case study briefing - Feb 2017

Introduction

Our study is funded by the Department of Health's Policy Research Programme (PR-ST-1115-10017) and aims to identify the costs and consequences of implementing safe staffing policies in acute hospitals following the Francis Inquiries and to describe factors that influence this process. This study builds on our on-going safe staffing research and comprises three parts: a national scoping survey of 155 acute Trusts; the analysis of national workforce datasets; and four in-depth case studies. The case studies use a mixture of qualitative and quantitative methods to explore and compare policy implementation across four hospital Trusts (2 general hospitals, 1 teaching hospital and 1 specialist hospital). The study has the approval of the University of Southampton (UoS), with whom Bangor University are project partners, the NHS Research Ethics Service (16/EE/0381) and the NHS Health Research Authority (IRAS number 204589). Site agreements are also being established between the researchers and the four NHS Trusts.

Qualitative data collection

The qualitative case studies aim to develop an explanatory theory of policy implementation that acknowledges the importance of context for understanding whether the implementation of safe staffing policy has worked, for whom, how and in what circumstances. Factors to be explored include the policies themselves, organisational responses and the views of implementers over three phases:

Phase 1 - Five telephone interviews with nursing managers1 and one workshop (~20 key stakeholders invited) for each hospital to map policy implementation contexts;

Phase 2 - Theory development and one cross-hospital workshop to check emerging theory, due for completion by the end of June 2017;

Phase 3 - Theory evaluation - 15 stakeholder interviews per hospital to test and further develop the theory, with final project report and publications due in May 2018.

Participation request & contact details
To start Phase 1 we request the participation of five nursing managers willing to be interviewed about the implementation of safe staffing policy. These audio-recorded telephone interviews will last a maximum of 30 minutes and will be anonymised. The three phases are interconnected, therefore at the end of each interview the nursing manager will be asked to suggest who should attend a workshop to build on the interview data and the mapping of policy implementation for their hospital.

If you are interesting in taking part and/or would like more information please contact Rob Couch on 07963 543 863 or r.couch@bangor.ac.uk .

1 A nursing manager is defined here as a qualified nurse working at ward or operational level with responsibilities for nurse staffing and workforce planning. Therefore Phase 1 interviewees might include ward sisters, matrons, heads of service and/or others.

Quantitative/Economic data collection

Through interviews and review of Trust documents, we will be looking to get a better understanding of the processes of planning and monitoring ward staffing that have been used in the Trust, both before and after safe staffing policies and guidance were introduced. We will use existing data within the Trusts (including staffing establishments, bed counts, ward rosters) to identify changes in staffing numbers and levels, and explore how these may relate to safe staffing policy and guidance. To do this we will need to get both a view of present systems and numbers, as well as looking back over recent years.

Our starting point will be four short interviews with the staff who lead on: nursing workforce, informatics to support staffing decisions, finance/procurement related to staffing processes, and human resources (for retrospective data on nursing establishments, staff in post, vacancies). We will also collate published Trust documentation related to staffing decisions and reviews.

We will be drawing on national datasets to produce a longitudinal profile of nurse staffing at the Trust. This will be shared with key informants at the Trust to 'sense check' the data and help with interpretation of any trends or patterns identified.

Interviews will focus on methods used to determine nurse staffing requirements and their data requirements. The aim is to identify new processes introduced to determine ward level staffing requirements and the resources required to collect these data, and estimate the costs associated with these changes. From the Trust data and the interviews we hope to determine other significant resource use related to determining and agreeing staffing levels, reporting to Trust board level, and monitoring safe staffing levels (for example using the indicators identified in NICE Safe Staffing Guidance). While the nursing red flag may be collected within software systems in use in the case study hospitals, we will also seek to identify the additional costs to the Trusts of collating and publishing these data.

To get a picture ward staffing shift by shift, we will analyse SNCT data and e-roster data, going back as far as these data permit. Much of this is likely to be based on data reports generated for the SNCT study.

We will also examine the possible impact that staffing changes may have had on patient and staff outcomes. To do this we will review the Trust's safety thermometer data and results to the staff attitude survey, and examine in relation to observed differences in staffing. We will work with the study contact to determine the best of doing this.

This element of the study is being coordinated by Jeremy Jones, who can be contacted on 023 8059 7866, or jeremy.jones@soton.ac.uk .

More information about the study can be found at https://tinyurl.com/PRP-SafeStaff

Implementation, impact & costs of policies for safe staffing in acute Trusts

Study information sheet (generic)
V1.3 – 22-11-16

University of Southampton and Bangor University have been commissioned by the Department of Health Policy Research Programme to jointly undertake a study on the implementation, impact and costs of policies for safe staffing in acute trusts. The research builds on recently commissioned Health Service & Delivery Research studies that the universities are undertaking on safe staffing and the use of nursing workforce planning tools.

Background

Having enough staff, with the right skills, is essential for patient safety. Research demonstrates a link between the number of registered nurses on duty and the risk of a patient dying whilst in hospital.

An inquiry (led by Sir Robert Francis) highlighted that many decisions about nurse staffing in hospitals had been made without using evidence. Changing nurse staffing without considering the effect on patient care had led to poor care and higher than expected death rates at The Mid-Staffordshire NHS Trust. He recommended that research evidence was used to ensure hospitals are staffed safely. NICE (The National Institute for Health and Care Excellence) were asked to develop guidelines for different nursing areas, starting with acute hospital wards. They also endorsed a tool to help hospitals plan nurse staffing: the Safer Nursing Care Tool (SNCT).

Aims

The study aims to identify the costs and consequences of implementing safe staffing policies in NHS acute hospitals. It will also look at the factors that have made a difference to how the policies have been implemented: what has worked well for whom, and in which situations.

We will focus on two safe staffing policies that came out of the government response to the Francis Inquiry:

1. Guidance launched by the National Quality Board (NQB) and Chief Nursing Officer in November 2013, which set out ten expectations of NHS Trusts in relation to staffing.
2. National Institute for Health and Care Excellence (NICE) guidance on safe staffing for nursing in adult inpatient wards in acute hospitals, published in June 2014, and accompanied by endorsement of the Safer Nursing Care Tool (SNCT).

We will use a mix of methods to look at how safe staffing policies have been carried out, how this has varied in NHS Trusts, what changes were made to staffing levels, and how staffing changes may have affected patient care.

Objectives

The specific research aims are to:

1. Describe how safe staffing policies have been implemented in local NHS Trusts
2. Determine the associated costs of policy changes in NHS Trusts
3. Describe the effects and outcomes of safe staffing policies (both intended and unintended)
4. Describe the factors that have made a difference to how Trusts have implemented safe staffing policies

Rationale for the study

At a workshop held in Southampton in October 2015 involving 23 members of the public, carers, and patients, 'nurse staffing' was ranked as the top choice for research to improve care in hospitals. The NHS needs to know how safe staffing policies have been carried out, how this varies across the country, what it has cost, and what impact it has had on patients and staff. Understanding what worked where, and for whom, can help inform future guidance provided to the NHS. In the current financial climate, using resources (staffing is the biggest element) wisely to minimise the risks of hospital care and maximise the benefits to patients is essential; understanding the costs and effect of implementing safe staffing policy is central to this.

Methods: How will we do the study?

We are using a combination of methods:

1. National survey; 155 acute Trusts using online / paper administration to understand how trusts have responded to safe staffing initiatives, including uptake and implementation of the SNCT
2. Analysis of existing national data to explore changes in staffing over time within acute trusts and to identify shifts between acute trusts and other sectors.
3. Case studies using in-depth qualitative study of implementation using a realistic evaluation, quantitative methods and economic approaches, in 4 acute NHS trusts.

Advisory group

The project will be supported by an advisory group that meets 3 times a year. Two advisers to the study have been recruited from the many people (members of the public and patients) who expressed an interest in this topic through our public consultation survey and workshop. Other members of the advisory group will include methodological experts (who oversee how we do the research), policy advisors and NHS staff and directors of nursing.

The research team

The study is led by Jane Ball and Peter Griffiths at University of Southampton. The team at Southampton have extensive experience of research examining the costs and effects of workforce change and deployment in healthcare. The Bangor University team, led by Chris Burton and Jo Rycroft-Malone, have particular expertise in looking at factors that influence how policies are put into practice in the NHS.

Relevance & dissemination

Findings will be shared with different audiences (including the public, patients and carers and interested groups) at relevant points during the study, and on completion. Whilst the focus of the research is on NHS acute Trusts in England, the findings on the costs and consequences of adopting safe staffing policies, and lessons learnt about policy implementation more generally, will have relevance to other parts of the health service.

For further information please contact study lead:

Jane Ball, 07788 313170 jane.ball@soton.ac.uk

Research to examine the implementation, impact and costs of policies for safe staffing in acute trusts

Information for Staff participants invited to take part in Workshops

This information sheet

You may have been invited to talk with a member of the research team who are undertaking this study. The aim of this information sheet is to:

- Tell you about the study, what has led to us doing it, what the aims and methods are, who is doing the work, and what we hope it will achieve.
- Give you information about the planned workshops – what they involve, your part in it, how the information will be used, your rights to opt out at any time, and what to do if you are unhappy about any aspect of participation.

About the study

University of Southampton and Bangor University have been commissioned by the Department of Health Policy Research Programme to jointly undertake a study on the implementation, impact and costs of policies for safe staffing in acute trusts. The research builds on other research that the universities are undertaking on safe staffing and on the use of nursing workforce planning tools.

The Study has been submitted for Ethical Review through the University of Southampton ERGO ethics review and the HRA (Health Research Authority) Cambridge East Research Ethics Committee.

The research team

The study is led by Jane Ball and Peter Griffiths at University of Southampton. The team at Southampton have extensive experience of research examining the costs and effects of workforce change and deployment in healthcare. The Bangor University team, led by Chris Burton and Jo Rycroft-Malone, have particular expertise in looking at factors that influence how policies are put into practice in the NHS.

Background to the research

Having enough staff, with the right skills, is essential for patient safety. Research demonstrates a link between the number of registered nurses on duty and the risk of a patient dying whilst in hospital.

An inquiry (led by Sir Robert Francis) highlighted that many decisions about nurse staffing in hospitals had been made without using evidence. Changing nurse staffing without considering the effect on patient care had led to poor care and higher than expected death rates at The Mid-Staffordshire NHS Trust. He recommended that research evidence was used to ensure hospitals are staffed safely. NICE (The National Institute for Health and Care Excellence) were asked to develop guidelines for different nursing areas, starting with acute hospital wards. They also endorsed a tool to help hospitals plan nurse staffing: the Safer Nursing Care Tool (SNCT).

A report from the Chief Nursing Officer and National Quality Board set out ten expectations that NHS Trusts should meet to ensure they have sufficient nurse staffing. However, we know little about the effectiveness or costs of different approaches taken to plan, review and monitor nurse staffing levels.

Aims of the research

The study aims to identify the costs and consequences of implementing safe staffing policies in NHS acute hospitals. It will also look at the factors that have made a difference to how the policies have been implemented: what has worked well for whom, and in which situations.

We will focus on two safe staffing policies that came out of the government response to the Francis Inquiry:

3. Guidance launched by the National Quality Board (NQB) and Chief Nursing Officer in November 2013, which set out ten expectations of NHS Trusts in relation to staffing.
4 National Institute for Health and Care Excellence (NICE) guidance on safe staffing for nursing in adult inpatient wards in acute hospitals, published in June 2014, and accompanied by endorsement of the Safer Nursing Care Tool (SNCT).

We will use a mix of methods to look at how safe staffing policies have been carried out, how this has varied in NHS Trusts, what changes were made to staffing levels, and how staffing changes may have affected patient care.

Objectives

The specific research aims are to:

5. Describe how safe staffing policies have been implemented in local NHS Trusts
6. Determine the associated costs of policy changes in NHS Trusts
7. Describe the effects and outcomes of safe staffing policies (both intended and unintended)
8. Describe the factors that have made a difference to how Trusts have implemented safe staffing policies

Why are we looking at Safe Staffing?

At a workshop held in Southampton in October 2015 involving 23 members of the public, carers, and patients, 'nurse staffing' was ranked as the top choice for research to improve care in hospitals. The NHS needs to know how safe staffing policies have been carried out, how this varies across the country, what it has cost, and what impact it has had on patients and staff. Understanding what worked where, and for whom, can help inform future guidance provided to the NHS. In the current financial climate, using resources (staffing is the biggest element) wisely to minimise the risks of hospital care and maximise the benefits to patients is essential; understanding the costs and effect of implementing safe staffing policy is central to this.

Methods: How will we do the study?

We are using a combination of methods:

1. National survey; 155 acute Trusts using online/paper administration to understand how trusts have responded to safe staffing initiatives, including uptake and implementation of the SNCT (Safer Nursing Care Tool)
2. Analysis of existing national data to explore changes in staffing over time within acute trusts and to identify shifts between acute trusts and other sectors.
3. Case studies using in-depth qualitative study of implementation using a realistic evaluation, quantitative methods and economic approaches, in 4 acute NHS trusts.

Workshops & discussion groups at the case study Trusts

We will be running several workshops to generate a deeper understanding of the contexts of safe staffing and workforce planning for a defined specialty/service. Each group will involve about 20 people, selected on the basis of having some involvement or interest in planning staffing and the use of workforce planning tools. The workshops will combine discussion and practical activities to help explore the complexity of systems in which safe staffing operates. The findings from the

initial workshops will be used in a second phase to help the researchers understand 'what works' where, for whom and in what circumstances.

What will participation in the workshops involve for you?

- You are invited to take part in this research, by attending one of the workshops.
- The workshops will typically last 1.5 hours and take place during the working day, in your place of work, or as close as possible.
- The researchers will make notes, and may also ask for your permission to audio-record the discussions.
- Your involvement is entirely voluntary. You can opt out at any time.

Anonymity & data protection

The information gained from the workshop will be used to develop and test a theory about what has worked where, and for whom.

- Your views and comments will be reported anonymously
- No individual (or ward/directorate/department) will be named in outputs from the study.
- Nothing we report will be attributed to individuals.
- We recognise that maintaining anonymity is not just about not naming people, but requires careful reporting so that the identity of an individual, or their ward/department cannot be identified. The issues will be reported in a way that ensures that individuals are not identifiable.
- Any recordings will be transcribed and anonymised. The original audio-recording will be destroyed.
- Your input will be stored on a password protected computer that will only be used for the purpose of this study.
- All files containing any personal data will be made anonymous.

Benefits and Risks of taking part in this research study

There are no direct benefits to you as an individual by participating in this research. However, by taking part you will be helping the NHS know whether safe-staffing polices are working, and what leads to safe and caring nursing care in hospitals.

There are no risks associated with taking part in this research. All names, job descriptions or identifying features will be kept anonymous.

What if there is a problem or I have a complaint?

We hope that speaking to researchers about how safe staffing policies have been implemented will not be burdensome to you, and that our conduct as researchers will be of the highest standard. But should you have concerns or wish to make a complaint, you can contact Isla Morris, who is independent of the research team, and is the 'Research Integrity & Governance Manager'. She can be reached: at rgoinfo@soton.ac.uk or by telephone on 023 8059 5058, or at University of Southampton, Building 37, Highfield, Southampton, SO17 1BJ.

Any questions?

For further information about the research please contact the study lead at University of Southampton: Jane Ball, 07788 313170 jane.ball@soton.ac.uk

Research to examine the implementation, impact and costs of policies for safe staffing in acute trusts

Information for Patient/Carer/Public participants invited to take part in Workshops

This information sheet

You may have been invited to talk with a member of the research team who are undertaking this study. The aim of this information sheet is to:

- Tell you about the study, what has led to us doing it, what the aims and methods are, who is doing the work, and what we hope it will achieve.
- Give you information about the planned workshop– what it involves, your part in it, how the information will be used, your rights to opt out at any time, and what to do if you are unhappy about any aspect of participation.

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University of Southampton and Bangor University have been commissioned by the Department of Health Policy Research Programme to jointly undertake a study on the implementation, impact and costs of policies for safe staffing in acute trusts. The research builds on other research that the universities are undertaking on safe staffing and on the use of nursing workforce planning tools.

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- → Analysis of existing national data to explore changes in staffing over time within acute trusts and to identify shifts between acute trusts and other sectors.
- → Case studies using in-depth qualitative study of implementation using a realistic evaluation, quantitative methods and economic approaches, in 4 acute NHS trusts.

Workshops and discussion groups at the 'case study' Trusts

We will be running several workshops to get a deeper understanding of safe staffing and workforce planning from a public/patient/carer point of view. Each group will involve about 20 people, selected on the basis of having some involvement or interest in patient care and how services are staffed. The workshops will involve discussion of the issues around safe staffing in hospitals The findings from the initial workshops will be used in a second phase to help the researchers understand 'what works' where, for whom and in what circumstances.

What will participation in the workshops involve for you?

- You are invited to take part in this research, by attending one of the workshops
- The workshops will typically last 1.5 hours and take place during the working day, in a convenient venue.
- The researchers will make notes, and will also ask for your permission to audio-record the discussions.
- Your involvement is entirely voluntary. You can opt out at any time.

Anonymity & data protection

The information gained from the workshop will be used to develop and test a theory about what has worked where, and for whom.

- Your views and comments will be reported anonymously
- No individual (or ward/directorate/department) will be named in outputs from the study.
- Nothing we report will be attributed to individuals.
- We recognise that maintaining anonymity is not just about not naming people, but requires careful recording so that the identity of an individual, or their ward/department cannot be identified.
- Any recordings will be typed and anonymised. The original audio-recording will be destroyed.
- Your input will be stored on a password protected computer that will only be used for the purpose of this study.
- All files containing any personal data will be made anonymous.

Benefits and Risks of taking part in this research study

There are no direct benefits to you as an individual by participating in this research. However, by taking part you will be helping the NHS know whether safe-staffing polices are working, and what leads to safe and caring nursing care in hospitals.

There are no risks associated with taking part in this research. All names or identifying features will be kept anonymous.

What if there is a problem or I have a complaint?

We hope that speaking to researchers about how safe staffing policies have been implemented will not be a problem for you, and that our conduct as researchers will be of the highest standard. But should you have concerns or wish to make a complaint, you can contact Isla Morris, who is independent of the research team, and is the 'Research Integrity & Governance Manager'. She can be reached: at rgoinfo@soton.ac.uk or by telephone on 023 8059 5058, or at University of Southampton, Building 37, Highfield, Southampton, SO17 1BJ.

Any questions?

For further information about the research please contact the study lead at University of Southampton:
Jane Ball, 07788 313170 jane.ball@soton.ac.uk

Research to examine the implementation, impact and costs of policies for safe staffing in acute trusts

Information for staff participants invited to take part in Case Study Interviews

This information sheet

You may have been invited to talk with a member of the research team who are undertaking this study. The aim of this information sheet is to:

- Tell you about the study, what has led to us doing it, what the aims and methods are, who is doing the work, and what we hope it will achieve.
- Give you information about the planned interviews – what it involves, your part in it, how the information will be used, your rights to opt out at any time, and what to do if you are unhappy about any aspect of participation.

About the study

University of Southampton and Bangor University have been commissioned by the Department of Health Policy Research Programme to jointly undertake a study on the implementation, impact and costs of policies for safe staffing in acute trusts. The research builds on other research that the universities are undertaking on safe staffing and on the use of nursing workforce planning tools.

The Study has been submitted for Ethical Review through the University of Southampton ERGO ethics review and the HRA (Health Research Authority) Cambridge East Research Ethics Committee.

The research team

The study is led by Jane Ball and Peter Griffiths at University of Southampton. The team at Southampton have extensive experience of research examining the costs and effects of workforce change and deployment in healthcare. The Bangor University team, led by Chris Burton and Jo Rycroft-Malone, have particular expertise in looking at factors that influence how policies are put into practice in the NHS.

Background to the research

Having enough staff, with the right skills, is essential for patient safety. Research demonstrates a link between the number of registered nurses on duty and the risk of a patient dying whilst in hospital.

An inquiry (led by Sir Robert Francis) highlighted that many decisions about nurse staffing in hospitals had been made without using evidence. Changing nurse staffing without considering the effect on patient care had led to poor care and higher than expected death rates at The Mid-Staffordshire NHS Trust. He recommended that research evidence was used to ensure hospitals are staffed safely. NICE (The National Institute for Health and Care Excellence) were asked to develop guidelines for different nursing areas, starting with acute hospital wards. They also endorsed a tool to help hospitals plan nurse staffing: the Safer Nursing Care Tool (SNCT).

A report from the Chief Nursing Officer and National Quality Board set out ten expectations that NHS Trusts should meet to ensure they have sufficient nurse staffing. However, we know little about the effectiveness or costs of different approaches taken to plan, review and monitor nurse staffing levels.

Aims of the research

The study aims to identify the costs and consequences of implementing safe staffing policies in NHS acute hospitals. It will also look at the factors that have made a difference to how the policies have been implemented: what has worked well for whom, and in which situations.

We will focus on two safe staffing policies that came out of the government response to the Francis Inquiry:

- Guidance launched by the National Quality Board (NQB) and Chief Nursing Officer in November 2013, which set out ten expectations of NHS Trusts in relation to staffing.
- National Institute for Health and Care Excellence (NICE) guidance on safe staffing for nursing in adult inpatient wards in acute hospitals, published in June 2014, and accompanied by endorsement of the Safer Nursing Care Tool (SNCT).

We will use a mix of methods to look at how safe staffing policies have been carried out, how this has varied in NHS Trusts, what changes were made to staffing levels, and how staffing changes may have affected patient care.

Objectives

The specific research aims are to:

- Describe how safe staffing policies have been implemented in local NHS Trusts
- Determine the associated costs of policy changes in NHS Trusts
- Describe the effects and outcomes of safe staffing policies (both intended and unintended)
- Describe the factors that have made a difference to how Trusts have implemented safe staffing policies

Why are we looking at Safe Staffing?

At a workshop held in Southampton in October 2015 involving 23 members of the public, carers, and patients, 'nurse staffing' was ranked as the top choice for research to improve care in hospitals. The NHS needs to know how safe staffing policies have been carried out, how this varies across the country, what it has cost, and what impact it has had on patients and staff. Understanding what worked where, and for whom, can help inform future guidance provided to the NHS. In the current financial climate, using resources (staffing is the biggest element) wisely to minimise the risks of hospital care and maximise the benefits to patients is essential; understanding the costs and effect of implementing safe staffing policy is central to this.

Methods: How will we do the study?

We are using a combination of methods:

- National scoping survey; 155 acute Trusts using online/paper administration to understand how trusts have responded to safe staffing initiatives, including uptake and implementation of the SNCT (Safer Nursing Care Tool)
- Analysis of existing national data to explore changes in staffing over time within acute trusts and to identify shifts between acute trusts and other sectors.
- Case studies using in-depth qualitative study of implementation using a realistic evaluation, quantitative methods and economic approaches, in 4 acute NHS trusts.

Interviews with staff at the 'Case Study' Trusts

We are interviewing staff to investigate the context of the organisational response to safe staffing policies in four NHS organisations, identify what it entailed, and any consequences.

Interviewees have been chosen as people who are likely to know something about how staffing is planned at the Trust, or have been involved in some way in the implementation of safe staffing policies. The types of staff we will want to talk with include: nurse managers responsible for planning ward establishments, administration staff responsible for creating and maintaining reporting systems, and IT staff responsible for procuring, installing and maintaining information systems related to the implementation of safe staffing policies.

The purpose of these interviews will be to look to back at Trust systems for determining staffing levels, prior to the development of guidance on safe staffing, and to develop estimates of the resource implications of planning and providing safe nursing care (including impacts of any statutory reporting requirements).

The interviews will be semi-structured using a pre-prepared topic guide to promote consistency in coverage across the Trusts while allowing for a full range of responses from interview participants. For example, the sorts of issues we hope to explore are:

- How have NICE 'safe-staffing' guidelines been used?
- Has the Safer Nursing Care tool been adopted?
- How have approaches to safe staffing changed?
- What has it involve to set up/continue to use staffing systems?
- How have staffing levels at the Trust changed?

What will the interviews involve for you?

- You are invited to take part in this research, by talking to one of the researchers.
- The interviews will typically last up to an hour, and take place during the working day, in your place of work, or as close as possible.
- The researcher will typically make notes, but may also ask for your permission to audio-record the conversation.
- Your involvement is entirely voluntary. You can opt out at any time.

Anonymity & data protection

The aim of the interviews is to talk to build up an overview for each Trust; we are interested only in understanding the way in which safe staffing policies have been implemented – not in who said what. The information gained from different interviews will be pieced together to create a bigger picture of how safe staffing has been implemented. Specifically:

- Your views and comments will be reported anonymously
- No individual (or ward/directorate/department) will be named in any outputs from the study.
- Nothing we write based on the series of interviews we conduct will be attributed to individuals.
- We recognise that maintaining anonymity is not just about not naming people, but requires careful reporting so that an individual, or their ward/department cannot be identified. The issues will be reported in a way that ensures that individuals are not identifiable.
- Information collected from you will be stored on a password protected computer and will only be used for the purpose of this study.
- All files containing any personal data will be made anonymous.
- Any audio-recording will be transcribed and anonymised. The original audio-recording will be destroyed.

What if there is a problem or I have a complaint?

We hope that speaking to researchers about how safe staffing policies have been implemented will not be burdensome to you and that our conduct as researchers will be of the highest standard. But should you have concerns or wish to make a complaint, you can contact Isla Morris, who is independent of the research team, and is the 'Research Integrity & Governance Manager'. She can be reached: at rgoinfo@soton.ac.uk or by telephone on 023 8059 5058, or at University of Southampton, Building 37, Highfield, Southampton, SO17 1BJ.

Any questions?

For further information about the research please contact the study lead at University of Southampton: Jane Ball, 07788 313170 jane.ball@soton.ac.uk

Appendix 2: Advisory group 'Terms of Reference'

PRP study: Implementation of Safe Staffing Policies

Terms of Reference for the Advisory Group
The study Advisory Group will act as a consultation group for the Principal Investigators and members of the research teams undertaking the Department of Health's Policy Research Programme funded study: "Implementation, impact and costs of policies for safe staffing in acute Trusts".

The Advisory Group will consider and provide recommendations on various aspects of the project's design and implementation, and dissemination of its findings.

Accountability

The members of the Advisory Group are accountable to the communities, organisations, and service users they represent. The Research Team is accountable for directing the design and implementation of the project and the Principal Investigators are also responsible to the project funder.

Responsibilities

The main responsibility of the Advisory Group is to support and advise the Research Team by;

- Providing alternative perspectives/specialist expertise
- Monitoring and critically appraising the study at all stages
- Considering and advising on study design and data interpretation
- Considering the rights, safety and well-being of the participants as the most important considerations
- Ensuring appropriate ethical and other approvals are obtained in line with the project plan
- Advising on proposals for substantial protocol amendments
- Assisting the Research Team in identifying strategies for the dissemination and application of the project's findings at programme and policy levels
- Respecting the intellectual property rights of materials and outputs developed within the study
- Treating in confidence emerging findings disclosed to the advisory group.

The role of the Chair of Advisory Group

The Chair's responsibilities include:

- Liaising with the Principal Investigators
- Being familiar with relevant guidance documents
- Providing an independent, experienced opinion if conflicts arise between the needs of the research team, the participating organisations and/or any other agencies
- Leading the Advisory Group to provide regular, impartial oversight of the study, especially to identify and pre-empt problems
- Ensuring that changes to the protocol are debated by the Advisory Group;
- Being available to provide independent advice as required, not just when Advisory Group meetings are scheduled
- Commenting on any extension requests and, where appropriate, providing a letter of recommendation to accompany such a request
- Commenting in detail (when appropriate) regarding the continuation or termination of the project.

Membership

The majority of members of the Advisory Group, including the Chair, should be independent of the study. The Principal Investigators (or a nominated deputy) will be members of the group. Other members of the research team or additional observers may be in attendance at Advisory Group meetings in order to provide input. Any competing interests, either real or potential, should be disclosed. These are not restricted to financial matters – involvement in other studies or intellectual investment could be relevant. Although members may well be able to act objectively despite such connections, complete disclosure enhances credibility.

Meetings

The Advisory Group will meet in person five times throughout the two-year study. At the request of the Advisory Group, interim meetings, in person or by teleconference, may be organised. Issues may need to be dealt with between meetings, by phone or by email. Advisory Group members should be prepared for such instances. Effort will be made to ensure that all members can attend. The Research Team will work at identifying dates that enable maximum participation. The Principal Investigator must attend all meetings, especially if major actions are expected. If, at short notice, any Advisory Group members cannot attend, then the Advisory Group may still meet if at least two independent members, including the Chair (unless otherwise agreed), will be present, plus also a member of the study team. Proxies will not be used. Where possible we will provide teleconference facilities but would prefer members to attempt to be present, as technology may not always be working or reliable.

Annexe 1: Agreement & Competing Interests Form for PRP Safe Staffing Advisory Group Members

Please complete the following document and return to Francesca Lambert, F.Lambert@soton.ac.uk

(please initial box to agree)

	I have read and understood the PRP Study Protocol
	I agree to join the Study Advisory Group for this study
	I agree to treat all sensitive study data and discussions confidentially

The avoidance of any perception that members of an Advisory Group may be biased in some fashion is important for the credibility of the decisions made by the Advisory Group and for the integrity of the study.

Table 1 lists examples of potential competing interests.

	No, I have no potential competing interests to declare
	Yes, I have potential competing interests to declare (please detail below)

Please provide details of any potential competing interests:

_____

_____

_____

*We will also ask for a declaration of interest/conflict prior to each meeting.

Name: _____

Signed:_____ Date:_____

Table 1: Examples of potential competing interests for advisory group members

- Consulting arrangements with the Sponsor/Funder
- Career or investment tied up in any product or technique assessed by study
- Hands-on participation in the study
- Involvement in the running of the study
- Emotional involvement in the study
- Involvement in regulatory issues relevant to the study procedures
- Involvement in the writing up of the main study results in the form of authorship
- Involvement in regulatory issues relevant to the study procedures
- Investment (financial or intellectual) in staffing products/technologies

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Appendix 3: Questionnaire - Directors of Nursing Survey

PRIFYSGOL BANGOR UNIVERSITY

Safe Staffing in the NHS
Survey of Directors of Nursing in Acute Trusts

UNIVERSITY OF Southampton

The **Department of Health's Policy Research Programme** has funded us to research the implementation of safe staffing policies following the Francis Inquiries, and explore how it has varied nationally.

As part of the study, we are surveying the Director of Nursing in every acute NHS Trust in England. Your participation will make an important contribution to the completeness of this study, but is entirely voluntary.

Further information about the study can be found at https://tinyurl.com/PRP-SafeStaff

If you would like to take part, please complete this survey and return in the free-post envelope enclosed. Alternatively you can complete it through an online form; if you have not received an email invitation, please contact: geoff@employmentresearch.co.uk

The survey is likely to take 20 minutes to complete.

The aim of the survey is to explore how implementation of safe-staffing policies has varied nationally, for example looking at the proportion of Trusts using different systems to plan staffing. Your identity, and that of your Trust, will not be disclosed in the results or any outputs.

We hope that this research is of interest to you and you are able to take part in this national survey. If you have any queries about the research please feel free to contact me, the lead researcher (on 07788 313170 or jane.ball@soton.ac.uk).

Thank you in advance for your help with this important national study.

Jane Ball & Professor Peter Griffiths

Principal Investigators

This study has been funded by the Department of Health's Policy Research Programme and is approved by the HRA (IRAS number 204589), and REC (16/EE/0381)

A. ESTABLISHMENT SETTING

A1 How frequently are ward nursing establishments formally reviewed by the Trust?

More than twice a year ☐1
Twice a year ☐2
Once a year ☐3
Less frequently than once a year ☐4

A2 When were adult acute ward nursing establishments last reviewed across the Trust?

Date (mm/yyyy):

A3 Which of the following approaches are used by the Trust to determine the nurse staffing establishment (the total number of posts) on general acute wards? Please select all that apply.

Primarily historical ☐1
Safe Care (in Allocate) ☐2
Safer Nursing Care Tool/Shelford ☐3
AUKUH ☐4
Benchmarks such as Hurst/Skills for Health 'Nurse per Occupied Bed' ☐5
Formally assessed using professional judgement ☐6
Other evidence-based system/tool ☐7

Please specify other:

A4 Which of the following approaches are used by the Trust to determine the nursing skill-mix on general acute wards? Please select all that apply.

Primarily historical ☐1
Safe Care (in Allocate) ☐2
Safer Nursing Care Tool/Shelford ☐3
Benchmarks such as Hurst/Skills for Health 'Nurse per Occupied Bed' ☐4
AUKUH ☐5
Formally assessed using professional judgement ☐6
RCN guidelines ☐7
Other ☐8

Please specify other:

A5 If the Trust is currently using the Safer Nursing Care Tool/ Shelford tool or 'Safe Care', when was it first introduced? (From here we use SNCT as shorthand to refer to all these tools)

Date (mm/yyyy):

A6 How was nurse staffing previously planned, before the SNCT approach was introduced?

'Nurse per Occupied Bed' ☐1
Professional judgement ☐2
Largely historical ☐3
Other system/tool ☐4

Please specify other:

A7 What is the TOTAL 'uplift'/ 'headroom' applied to take account of staff time off the roster?

% 'Uplift':

A8 Does the uplift include time for staff continuous professional development (CPD)/ staff training/ study leave?

Yes ☐1 No ☐2

A9 How many study days per year are planned/ factored in per member of staff on average?

Study days per year:

A10 Are ward sisters/ charge nurses/ ward managers supervisory/ supernumerary? (i.e. not counted in the numbers, and not carrying a clinical workload.)

Yes ☐1 No ☐2

A. ESTABLISHMENT SETTING

A11 In terms of funded time, what percentage of the ward sister/ ward manager/ charge nurse time is scheduled to be supervisory? % Time supervisory: ☐

A12 How often do you estimate the planned supervisory time of ward managers/ sisters/ charge nurses is compromised i.e. they are 'pulled into the numbers'?

- Nearly always (90-100% of shifts) ☐ 1
- Usually (60-89% of shifts) ☐ 2
- About half the time (40-59% of shifts) ☐ 3
- Rarely (11-40% of shifts) ☐ 4
- Hardly ever (0-10% of shifts) ☐ 5

B. STAFFING PER SHIFT

B1 Is an electronic rostering system used to schedule nursing staff? Yes ☐ 1 No ☐ 2

B2 Does the way in which staff are rostered, take account of variation in expected workload by day of the week? Yes ☐ 1 No ☐ 2

B3 Does the way in which staff are rostered, take account of variation in expected workload by time of the day? Yes ☐ 1 No ☐ 2

B4 Who has final responsibility for approving nurse staffing rosters?

- Director of Nursing ☐ 1
- Deputy Director of Nursing ☐ 2
- Senior Nurse Managers/Matrons ☐ 3
- Ward manager ☐ 4
- Other ☐ 5

Please describe other: ☐

B5 What is the typical planned skill-mix (% RNs) for general acute wards during the day? planned % RNs for day shifts: ☐

B6 What is the typical planned skill-mix (% RNs) for general acute wards at night? planned % RNs for night shifts: ☐

B7 How often do you estimate the planned skill-mix has been achieved over the last 12 months?

- Nearly always (90-100% of shifts) ☐ 1
- Usually (60-89% of shifts) ☐ 2
- About half the time (40-59% of shifts) ☐ 3
- Rarely (11-40% of shifts) ☐ 4
- Hardly ever (0-10% of shifts) ☐ 5

C. ASSESSING STAFFING ADEQUACY ON THE DAY

C1 Is the nurse staffing requirement for each shift reassessed at the start of each shift? Yes ☐ 1 No ☐ 2

C2 How is staffing adequacy for each shift reassessed? Please select all that apply.

- Safe Care (in Allocate) ☐ 1
- Safer Nursing Care Tool/Shelford ☐ 2
- Other dependency scoring system ☐ 3
- Formal review by professional judgement ☐ 4

Please describe other: ☐

C3 How does the Trust determine whether the nurse staffing level on a ward is adequate to provide care safely and meet patient needs? Please select all that apply.

- Professional judgement by ward manager ☐ 1
- Review by senior nurse managers ☐ 2
- Daily 'Safe-staffing' huddles ☐ 3
- Operational team meetings on site ☐ 4
- Other ☐ 5

Please describe other: ☐

C. ASSESSING STAFFING ADEQUACY ON THE DAY

C4 Is there a formal mechanism for staff to report the 'red flags' that were defined by NICE? Yes ☐1 No ☐2

C5 How are reports of 'red flags' reviewed by the Trust?

C6 Does the Trust have a clear 'escalation policy' describing actions to be taken in the event that staffing is assessed as being insufficient to meet patient needs safely? Yes ☐1 No ☐2

C7 How often has the number of patients per RN providing care on general acute wards during the day exceeded 1:8 in the past 12 months?

95-100% of shifts ☐1
80-95% of shifts ☐2
65-80% of shifts ☐3
Less than 65% of shifts ☐4
Never ☐5
Data not available ☐6

D. MEASURES OF STAFFING

D1 Are RN and HCSW staffing levels for each ward reported to the board each month? Yes ☐1 No ☐2

D2 On average in 2016, what was the Trusts 'fill-rate' for shifts?

Planned staffing achieved % :

Data not available (please tick): ☐

D3 Across the Trust, what is the current RN vacancy rate?

FTE RN posts unfilled % :

Data not available (please tick): ☐

D4 What is the average Care Hours Per Patient Day (CHPPD) on adult acute wards in the Trust? (ie hours of nursing care provided per patient per 24 hours by registered nurses & nursing support staff/ HCAs)

Average CHPPD:

Data not available (please tick): ☐

E. YOUR VIEWS

E1 Following the Francis Inquiry, has the way in which ward nurse-staffing levels are planned, rostered or monitored changed?

Yes, considerably ☐1 Yes, to some extent ☐2 No ☐3

E. YOUR VIEWS

E2 In your view, how have the following aspects of nurse staffing changed at the Trust since the Francis Inquiry? Please select one response for each row.

	Worse	Same	Better
a. How staffing is planned	☐1	☐2	☐3
b. Rostering of staff	☐1	☐2	☐3
c. Overall staffing levels	☐1	☐2	☐3
d. Skill-mix	☐1	☐2	☐3
e. Ability to recruit staff	☐1	☐2	☐3
f. RN staffing levels	☐1	☐2	☐3
g. Percentage of shifts with a full staffing complement	☐1	☐2	☐3
h. Ability to vary staffing in response to changes in workload	☐1	☐2	☐3
i. Staff retention	☐1	☐2	☐3
j. Sickness absence	☐1	☐2	☐3
k. Nurse satisfaction with staffing levels	☐1	☐2	☐3
l. Confidence of nursing staff to report staffing issues	☐1	☐2	☐3
m. Board awareness of staffing as an issue	☐1	☐2	☐3
n. Board support for investment in nursing workforce	☐1	☐2	☐3
o. Skill-mix	☐1	☐2	☐3

E2 To what extent do you think accountability to provide safe staffing is part of the culture at every level of the organisation?

To a great extent ☐1 To some extent ☐2 Not at all ☐3

E4 On a scale of 1-5, how helpful has each of the following been in supporting changes to achieve safe nurse staffing in the Trust? Please select one response for each row.

	1 Not at all helpful	2	3	4	5 Very helpful
a. Francis Inquiry recommendations generally	☐1	☐2	☐3	☐4	☐5
b. NQB guidelines (2013)	☐1	☐2	☐3	☐4	☐5
c. NICE guidelines for nurse staffing in Acute Wards	☐1	☐2	☐3	☐4	☐5
d. Use of Redflags	☐1	☐2	☐3	☐4	☐5
e. 1:8 ratio referred to in guidance	☐1	☐2	☐3	☐4	☐5
f. CQC standard 18 (Staffing)	☐1	☐2	☐3	☐4	☐5
g. Reporting fill-rates	☐1	☐2	☐3	☐4	☐5
h. Staffing display boards on wards	☐1	☐2	☐3	☐4	☐5
i. NQB Expectations (2016)	☐1	☐2	☐3	☐4	☐5
j. Reporting CHPPD	☐1	☐2	☐3	☐4	☐5
k. Reporting staffing levels to the board	☐1	☐2	☐3	☐4	☐5

E. YOUR VIEWS

E5 What are the biggest challenges in planning nurse staffing to ensure adequate numbers and skills are in place on every ward, every shift?

E6 What are the biggest challenges in achieving safe nurse staffing levels in this Trust?

F. And FINALLY

F1 Would you be willing to be contacted by the research team to discuss nurse staffing issues in more detail? Yes ☐1 No ☐2

F2 Thank you, please give your name and email address.

Name:

Email address:

F3 If you have any other comments to make about nurse staffing, and the policies aimed at ensuring safe staffing, or the process of implementing national policies & guidance, please use this space:

Thank you for taking time to complete this survey.

Please return your completed questionnaire in the reply-paid envelope provided or to:
FREEPOST, Employment Research Ltd, PO Box 2106, SEA 1044, Hove, BN3 5ZB.

Appendix 4: Interview schedules

Safe staffing policy implementation in the NHS

Telephone interview briefing & consent

Introduction

Further to the Phase 1 telephone interview briefing I recently sent you, we are funded by the Department of Health's Policy Research Programme to undertake research to describe and evaluate the implementation of safe staffing policies following the Francis Inquiries. The study has the approval of the University of Southampton (UoS), with whom Bangor University are project partners, the NHS Research Ethics Service (16/EE/0381) and the NHS Health Research Authority (IRAS number 204589).

As part of this study we are conducting telephone interviews with nurse managers from four acute NHS Trusts in England. Your participation in this study will make an important contribution and is entirely voluntary. You are free to withdraw from this interview at any time without giving a reason and without penalty.

The interview will take around 40 minutes to complete and aims to describe and explore the implementation of safe-staffing policies and the factors shaping this process. With your permission the interview will be recorded but your identity and that of your hospital Trust will be made anonymous and not be disclosed in the results or any future research outputs. We then plan to analyse your data and develop a theory of safe staffing policy implementation that will be further developed and tested in subsequent phases.

Do you have any further questions about the study before I seek your consent to participate? I will now ask some consent questions...

Verbal consent process

Date Code of interviewee

Can you confirm that you have read the telephone interview briefing sheet and had the opportunity to ask questions and have had these answered satisfactorily?	Yes/No
Do you understand that your participation is voluntary and you are free to withdraw at any time without giving any reason and without penalty?	Yes/No
Do you understand that the information collected from you will be used to develop our future research and may be shared anonymously with other researchers	Yes/No
From the University of Southampton?	Yes/No
Do you understand that you can request your details be removed from our research database at any time?	Yes/No
Do you agree to participate in this interview and for your data to be used for the purposes of this study?	Yes/No
Do you consent to your interview being audio-recorded on the basis that it will then be transcribed and anonymised, and the original recording destroyed?	Yes/No

Note: To start recording once consent given

To begin, some questions about you, your service/specialty and this Trust

What is your job title, service/specialty and main responsibilities?

What made you become a nurse and when did you qualify?

Please summarise your nursing qualifications & experience?

How long have you worked for this Trust and in your current role?

Tell me what the term 'safe staffing' means to you?

Some questions to explore how safe staffing fits into this Trust:

- Who are the key departments/services with safe staffing responsibilities, what are their roles? **(e.g. Quality, Finance, Professional Leads, Board Level, Improvement?)**
- Who are the key people with safe staffing roles and what do they do?
- What policies/systems/strategies are key to safe staffing? (**Prompt – who should we approach to access them?**)
- What tools and technologies are key to safe staffing? (**Prompt – feedback on use, problems, adaptability - SNCT feedback?**)
- Who should we contact to better understand your systems for planning and monitoring the nursing workforce and staffing related finance/procurement and human resources?

In your service/speciality:

- Who has final responsibility for approving nurse staffing rosters?
- If you needed help with safe staffing who would you turn to? **(Prompt - would you need to go to the 'top'?)**

Some questions about change, daily practice and evaluation

How have approaches to nurse staffing at this Trust changed in recent years and what prompted these changes? (**e.g. Francis, development of tools, guidance,** CQC inspections, **fear of litigation?**)

Do you consider these changes an improvement over past approaches? (**Explain...**)

Who/what has played a role in making these changes (**Probe – internal & external**)

What did they do that was helpful (or not)? (**Probe – manager support, leadership, influential roles – e.g. Chief Exec, Trust Board & Committees**)

On the day, at ward level:

- If staffing was safe on a shift, how would you know? (**Probe - What would indicate this?**)
- Conversely if staffing was not safe on a shift, how would you know and what would you do in response? (**Probe - what would you see, how would this differ from metrics used to determine this? Further - Does this happen often? Nights v. day? Confirm – escalation & hierarchy? Who would you report to? Any changes following major events?**)
- Do you think your colleagues in other services/specialties are following similar approaches to nurse staffing? (**Probe – peer pressure**)

At ward level, how are you informing patients and/or their families/carers about nurse staffing? (**Examples?**)

How does your Trust evaluate whether its approach to safe nurse staffing is working?

- Any Trust indicators/incentives/goals for nurse staffing? (**Probe – what, compliance?**)
- How are nurse staffing levels for each ward reported to the Trust Board? (**Probe – who, frequency, is Board supportive, responsive?**)

To end, some wider nurse staffing questions

What are the greatest challenges in planning nurse staffing to ensure the right people, with the right skills, are in the right place at the right time? (**Probe – recruitment & retention, agency nurses, HCA influence, new nursing associate model?**)

What are the greatest challenges in achieving safe nurse staffing levels in this Trust?

Do you know how other Trusts are progressing with safe staffing approaches? (**Probe - possible local/regional/ national networks?**)

How similar/different is your Trust to others?

Are you encouraged to network with others? (**Examples?**)

In Wales the **Nurse Staffing Levels Act (2016)** is gradually being implemented and puts a duty on providers to follow safe nurse staffing approaches. Would you welcome similar legislation in England? (**Please explain your answer...**)

What do you think will happen to nurse staffing in the next 5 years?

Lastly, if you were designing a workshop to better understand safe staffing in this Trust and how it's working in practice who would you invite?

End of interview

Many thanks for your time, would you like to add any further comments about nurse staffing or safe staffing policies and their implementation more broadly? (**Ask - have I missed something important?**)

Please feel free to contact me if you have any further questions/comments. I will be in contact with you again soon.

Safe staffing policy implementation in the NHS

Phase 3 telephone interview briefing & consent

Introduction

We are funded by the Department of Health's Policy Research Programme to undertake research to describe and evaluate the implementation of safe staffing policies following the Francis Inquiries. The study has the approval of the University of Southampton (UoS), with whom Bangor University are project partners, the NHS Research Ethics Service (16/EE/0381) and the NHS Health Research Authority (IRAS number 204589).

As part of this study we are conducting telephone interviews with participants involved in safe staffing from four acute NHS Trusts in England. Your participation in this study will make an important contribution and is entirely voluntary. You are free to withdraw from this interview at any time without giving a reason and without penalty.

The interview will take around 20 minutes to complete and aims to describe and explore the implementation of safe-staffing policies and the factors shaping this process. With your permission the interview will be recorded but your identity and that of your hospital Trust will be made anonymous and not be disclosed in the results or any future research outputs. We then plan to analyse your data and finalise our theory of safe staffing policy implementation.

Do you have any further questions about the study before I seek your consent to participate? I will now ask some consent questions...

Verbal consent process

Date Code of interviewee

Can you confirm that you have read the telephone interview briefing sheet and had the opportunity to ask questions and have had these answered satisfactorily?	Yes / No
Do you understand that your participation is voluntary and you are free to withdraw at any time without giving any reason and without penalty?	Yes / No
Do you understand that the information collected from you will be used to develop our future research and may be shared anonymously with other researchers	Yes / No
From the University of Southampton?	Yes / No
Do you understand that you can request your details be removed from our research database at any time?	Yes / No
Do you agree to participate in this interview and for your data to be used for the purposes of this study?	Yes / No
Do you consent to your interview being audio-recorded on the basis that it will then be transcribed and anonymised, and the original recording destroyed?	Yes / No

Note: To start recording once consent given

Patients and families/carers

Main questions:

- → Your background, role and responsibilities?
- → Please can you summarise your work? (Explore origins, how they organise, activities, relations with staff/managers/Board)
- → This study is informed by Francis Inquiries into Mid Staffs and subsequent changes in policy – to your knowledge has this changed your work and, if so, how?
- → How is your group involved in local discussions and practice around safe nurse staffing? (patient surveys, quality audits of wards etc.)
- → What do you think of current initiatives to communicate safe staffing to patients, families and carers (e.g. notice boards, feedback surveys) and how could they be improved?

PPI issues include:

- → Probe understanding of Francis, changes pre/post Francis?
- → Is safe staffing on radar of PPI?
- → That this has had little thought, beyond greater visibility due to NQB notice boards
- → Patient expectations (high or low), influence of media and 'you poor nurses' etc.
- → Balancing communicating safe staffing well (transparency, but complex) with many factors, including desire not to worry patients, families/carers unduly
- → What might PPE for safe staffing look like (if different from above)?

Many thanks for your time, would you like to add any further comments about safe staffing
(Ask - have I missed something important?)

Please feel free to contact me if you have any further questions/comments.

Appendix 5: Consent forms

CONSENT FORM – Staff Interviewees (V2.4 22-11-2016)

Study title: Implementation, impact & costs of Safe staffing policies in acute NHS trusts in England
Researcher name: Jane Ball
Study reference: PRP-DH-1
IRAS Project ID: 204589

Please circle one response to each statement, and initial each answer:

	Your initials
I have read and understood the study information sheet for Staff Interviewees (Version 2.3, 22-11-2016) and I have had the opportunity to ask questions about the study.	Yes / No
I consent to my participation in the group being audio-recorded on the basis that it will then be transcribed and anonymised, and the original recording(s) destroyed.	Yes / No
I agree to take part in this research project and agree for my data to be used for the purpose of this study	Yes / No
I understand my participation is voluntary, and I may withdraw at any time without my legal rights being affected	Yes / No
I would be willing to be contacted in the future, to be invited to be involved in other related research projects. I allow the University to retain my contact details on a database, kept separately from the research data detailed above. My consent is given on the basis that the University complies with the Data Protection Act. I understand that I can request my details be removed from this database at any time. Please note: this is voluntary, and you can refuse or withdraw your details from the database at any time.	Yes / No
Do you agree to participate in this interview and for your data to be used for the purposes of this study?	Yes / No
Do you consent to your interview being audio-recorded on the basis that it will then be transcribed and anonymised, and the original recording destroyed?	Yes / No

Note: To start recording once consent given

Data Protection

I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of this study. All files containing any personal data will be made anonymous.

Name of participant (print name).....

Signature of participant .....

Date.....

CONSENT FORM – Workshop Patient/Public Participants (v2.3 22-11-2016)

Study title: Implementation, impact & costs of Safe staffing policies in acute NHS trusts in England
Researcher name: Jane Ball
Study reference: PRP-DH-1
IRAS Project ID: 204589

Please circle one response to each statement, and initial each answer:

	Your initials
I have read and understood the study information sheet for Workshop Participants (Version 2.3, 22-11-2016) and I have had the opportunity to ask questions about the study.	Yes / No
I consent to my participation in the group being audio-recorded on the basis that it will then be transcribed and anonymised, and theoriginal recording(s) destroyed.	Yes / No
I agree to take part in this research project and agree for my data to be used for the purpose of this study	Yes / No
I understand my participation is voluntary, and I may withdraw at any time without my legal rights being affected	Yes / No
I am willing to be contacted in the future, with invitations for participation in other related research projects. I give permission to the University of Southampton to retain my contact details on a database, kept separately from the research data detailed above. My consent is given on the basis that the University complies with the Data Protection Act. **Please note:** this is voluntary and you can refuse or withdraw your details from the database at any time.	Yes / No

Data Protection

I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of this study. All files containing any personal data will be made anonymous.

Name of participant (print name).....

Signature of participant .....

Date.....

CONSENT FORM – Workshop Staff Participants (v2.4 22-11-2016)

Study title: Implementation, impact & costs of Safe staffing policies in acute NHS trusts in England
Researcher name: Jane Ball
Study reference: PRP-DH-1
IRAS Project ID: 204589

Please circle one response to each statement, and initial each answer:

	Your initials
I have read and understood the study information sheet for Workshop Participants (Version 2.2, 22-11-2016) and I have had the opportunity to ask questions about the study.	Yes / No
I consent to my participation in the group being audio-recorded on the basis that it will then be transcribed and anonymised, and theoriginal recording(s) destroyed.	Yes / No
I agree to take part in this research project and agree for my data to be used for the purpose of this study	Yes / No
I understand my participation is voluntary, and I may withdraw at any time without my legal rights being affected	Yes / No
I am willing to be contacted in the future, with invitations for participation in other related research projects. I give permission to the University of Southampton to retain my contact details on a database, kept separately from the research data detailed above. My consent is given on the basis that the University complies with the Data Protection Act. **Please note:** this is voluntary and you can refuse or withdraw your details from the database at any time.	Yes / No

Data Protection

I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of this study. All files containing any personal data will be made anonymous.

Name of participant (print name).....

Signature of participant .....

Date.....

Appendix 6: Case study accounts

Case A

A1. Case A: Profile in Spring 2017

Case A is a university NHS hospital foundation trust with over 1000 beds. It serves a city population of approximately 1.9 million with specialist services branching out to cover regional populations of 3.7 million.

A2. Processes to plan, monitor and review nurse staffing

A2.1. Establishment setting

Prior to the introduction of an electronic system based on the SNCT (Safer Nursing Care Tool) in 2015, the number of nursing posts each ward required to deliver services was reviewed annually using a combination of approaches including reference to the then Association of UK University Hospitals (AUKUH) acuity and dependency tool. This tool was used 3 times per year for one month to assess the overall acuity/dependency levels of the patients.

The data from these audits were prepared and collated electronically by a nursing facilitator working to the Associate Director of Nursing from submissions from the Matrons (band 8). The nursing directorate used these data as well as professional judgments as a basis for individual ward by ward discussions about the nursing establishments at the annual staffing review meetings. Other elements that informed this process were finance/budget information, electronic roster for nursing staff, temporary staffing usage and incident reporting. The Associate Director of Nursing prepared the annual Case A board report on nurse staffing.

Post Francis these reviews were increased to 6 monthly in line with NQB and NICE recommendations guidelines (10,50). Ward leaders, Matrons and divisional nurse leads and other professionals from the wider multidisciplinary team such as human resources (HR), finance and the workforce development team were included in these decisions as they had been prior to 2015. The elements that informed this process were finance/budget information, electronic roster data for Registered Nurse and support staff, acuity/dependency information, temporary staffing usage and incident reporting. The Deputy Director of Nursing prepared Case A board report on nurse staffing (annually up to 2013 and 6 monthly until reverting to annual in October 2017 following the refreshed NQB recommendations)

A2.2 Systems and structures to support safe staffing

System used

Case A started using electronic rostering for all staff in 2009. Five units in Case A commenced using a new electronic roster for bank interface in May 2012. This was not rolled out further at that time whilst awaiting functionality issues to be addressed. Elsewhere in Case A temporary nurse staffing continued to be recorded directly via the separate bank/agency providers system and supported using an additional paper system. Inputting of the roster data was carried out by band 7 ward leaders supported by ward administrative support. Quality control and authorisation of the electronic roster was carried out by Matrons in each care group.

Case A commenced an upgraded version of the electronic roster for nursing staff in March 2015. This tool and updated electronic roster for bank NHS Professionals and an electronic system based on the SNCT was rolled out to the whole of the Trust May to September 2016. This monitored substantive nurse staffing shifts and temporary nurse staffing shifts. The workforce development team, that started in 2009 when electronic rostering was introduced to all staff groups, expanded in 2017 to further support daily running and queries relating to the updated electronic roster system for nursing staff, bank and acuity and dependency as well as providing a fully integrated service for the trust supporting all other workforce related systems and the workforce planning function. A pilot of the electronic system based on the SNCT started between December 2015 and March 2016 in the 5 areas that already had the bank interface. Roster data was inputted at ward level into the

electronic roster for nursing staff and bank by band 7 ward leaders and acuity and dependency census data for each shift by the nurse in charge of the shift (band 5, 6, or 7).

Since the electronic capture of acuity and dependency the SNCT was introduced trust-wide in 2015, a census of patient acuity and dependency was carried out on every ward and monitored thrice daily in real time. Patient flow of admissions and discharges were collated electronically at ward level and quality control of these data were completed by Matrons in each clinical division. The acuity and dependency data were easily accessible and visible on the electronic interface and used for daily meetings involving all the Trust's divisions.

Registered Nurses' views of tools and technology

Registered Nurses had mixed views about the growing use of tools and technologies in safe staffing. Before the development of recent safe staffing strategies, nurse managers recalled paper based rostering and acuity/dependency systems via large spreadsheets and based on expert opinion in a context where finance was king. This approach changed around 2005-6 with the Trust's first major establishment review that included acuity and dependency data for the first time and started to give some narrative to the 'numbers'. However, one nurse manager also reflected that the Trust had now come full circle because professional judgement remained essential but their safe staffing decision making had developed into organisational learning about the vital balance between finance, quality and safety (A1 interview – pp6-7). Further, some Registered Nurses admitted that paper systems were still being used alongside the new tools, though this was changing as iPads were becoming more available.

The Trust's maternity services still rostered based on their establishment. Negotiations were ongoing towards the purchase of Birth Rate Plus, NICE 2014 staffing guidance [2] recommended workforce and acuity tool which was estimated to cost around £80,000 to cover the Trust's post-natal and intra-partum areas (A2 interview – p3). The Board were supportive of this investment and A2 hoped that better acuity data, linked to the workforce data, would improve the current system. However, A2 also feared the implications of Birth Rate Plus for her service, particularly the day when the software says 'you've got the right number' but this clearly isn't the case and she would have to challenge the software developers on this (A2 interview – p9). In Children's services, A3 identified the implementation of the Paediatric Early Warning Score System (PEWSS) around 2006 as a major breakthrough for safe nurse staffing because it provided a meaningful system for Registered Nurses to describe children's acuity and their judgements as to "why things didn't feel quite ok" (A3 interview – p3).

Recent developments in tools and technology were now enabling Registered Nurses to better capture activity across the whole hospital and provided a truer reflection of what was actually happening on their wards to inform and support staffing decision making and maintain the right balance between quality, safety and finance. Indeed, some Registered Nurses commented that integrating workforce and patients was a significant improvement but these tools and technologies were still largely used in a largely reactive/planning capacity (e.g. collect and review monthly electronic roster and acuity and dependency data, review establishment) and Trust's staff were only just starting to use their data on the day.

Registered Nurses' views of tools and technology largely focused on the Trust's electronic rostering system and the electronic system based on the SNCT, though other software sources (e.g. incident and quality reports) were also important for monitoring and raising issues. From the very start nurse managers reflected that the initial implementation of the enhanced rostering system utilising the SNCT in May 2016 had been relatively smooth, helped by recent improvements in the availability of iPads on the wards and the Trust's past experience in electronic roster and SNCT research. The development of the SNCT within the electronic roster followed from the Trust's earlier involvement in the AUKUH study and their on-going work with an information and technology company, to develop one system that combines rostering with acuity and dependency and links beyond this, for example with bank and agency deployment. These developments also aligned with national guidance. The linking of rostering to payroll was also significant because, as one nurse manager commented, it forces people to learn how to use it properly because their monthly pay depends on it. Another great strength was how the electronic roster and the electronic system based on the SNCT linked acuity and dependency to rostering and bank/agency, such that one nurse manager reflected that to lose such a sophisticated and inter-connected system would be a very backwards step. The introduction of the updated electronic rostering had also helped to improve staff rostering skills as their work was now online and could be audited easily.

Registered Nurses recognised that good rostering was important for all wards, though confidence and trust in your neighbours was also critical. Work to share good rostering knowledge and practice was therefore on-going and included a separate rostering masterclass for Ward sisters and mini-simulation classes on daily staffing. Quarterly safe staffing meetings

across all divisions and care groups also helped to identify problems and support staff, but Registered Nurses also requested more protected time for rostering activities, conscious they were constantly drawn back into direct care provision onto their wards.

Registered Nurses valued the electronic roster and the electronic system based on the SNCT potential for recording complex patient and resource needs. For example one nurse manager reflected that Care Hours Per Patient Day (CHPPD) data was providing new and powerful evidence for establishment reviews, particularly towards the more equal funding (and staffing) for all services instead of in favour of the 'sexier' services as had happened historically . Registered Nurses also welcomed the change in language from 'numbers down' to CHPPD and though other tools and technologies (e.g. incident & quality reporting) informed this baseline, together Registered Nurses valued how they were creating a whole picture of patients and wards (including trends) to inform present and future hospital wide safe staffing decisions. There was widespread recognition that it was still early days in the development of safe staffing tools and technologies and some admitted they were "still hanging on to bits of paper" to complete these tasks (30th October workshop – p2). However some Registered Nurses also questioned whether tools and technology were yet benefitting patients and staff via a series of concerns.

Nurse managers recognised that completing the electronic roster and the electronic system based on the SNCT put considerable pressure on ward Registered Nurses when ultimately they want them caring for the patients, but they hoped that staff were beginning to see the benefits of completion via improved staffing levels and that staff 'buy-in' was improving. Registered Nurses repeatedly explained that they might not get near a computer all day, let alone have time to make data entries. Registered Nurses were well aware of the implications of this, but getting the 'balance' right between data entry and all their other tasks was very difficult. Some commented that there was now too much measurement, where the electronic roster and the electronic system based on the SNCT collected too many variables? Instead some thought only one or two variables might be enough to tip the (safe staffing) balance, but some Registered Nurses also felt that measurement sometimes took priority over service delivery and care. Similarly, one nurse manager reflected that the electronic roster and the electronic system based on the SNCT won't give you the answers or 'sort your world out' but the right organisational culture was also vital in exploring the information it provides. (A1 interview - p4).

Registered Nurses were working with the workforce development team and others (e.g. IT Department) to improve the electronic roster and the electronic system based on the SNCT and other systems but some also had concerns about data capture. Registered Nurses and Registered Midwives questioned what constitutes a red flag event and how these should be measured now and in the future and were working to resolve this in safe staffing meetings and training courses. For example the October 2017 safe staffing workshop ended with a short briefing from the electronic roster team (including handout summary) on what constitutes a red flag (as NICE 2014 guidelines [2]) and how to raise, view, review and audit them using the electronic roster and the electronic system based on the SNCT. This also emphasised the need for supporting narrative on actions taken and ended with the workforce development team commenting that they don't want to be seen as the electronic 'rostering police' but will soon start auditing safe staffing data so please call us for help, we need to be your partners and not the police (30th October workshop – p4). Further, the workforce development team were in the process of establishing a Trust wide rostering group to work with ward leaders and administrators towards improving rostering. Registered Nurses also accepted that staff perceptions of acuity and dependency differed and interpreting and balancing this against other factors was an ongoing challenge. Indeed, one nurse manager reflected that Registered Nurses have always struggled to vocalise acuity and dependency and tended to default to 'it's not safe, it's not safe', when half an hour later things could be fine (A3 interview – p3).

Supervisory ward leader model

[*Details provided below from the Trust's safe staffing lead, Trust Board reports and ward staffing reviews*]

In February 2013 Case A agreed a 3 year implementation plan to deliver a full supervisory ward leader model as a separate resource to the baseline staffing numbers on the ward across all inpatient wards by 2016. Case A recognised the need for ward leaders to have dedicated time to ensure they were able to work alongside staff, monitor standards and put in place efficient systems for ongoing care delivery amid the competing priorities to manage ward resources financial and otherwise. This investment of £1.3M enabled each ward to have a 100% supervisory ward leader with the post funded over and above the required establishment for each ward. This formed part of the response to the key recommendations in the Francis Report (recommendation 195) and was further supported by the Hard Truths Department of Health response as part of the NQB 2013 expectations. The Case A model is based on the proceeding principles for the ward leader:

- Being additional to baseline numbers of staff required per shift
- Being visible and accessible to work alongside the team in clinical areas
- To support direct patient care, junior colleagues and facilitating learning in and from practice
- Evaluating, monitoring and providing feedback regarding standards of care provided by the clinical team
- Creating a culture of learning and development sustaining safe and effective person centered care
- Having a direct impact on outcomes of patient safety and the quality of patient and staff experience

The 3 year rollout of the supervisory ward leader model was completed in 2017. The ongoing position with vacancies resulted in ward leaders with supervisory status working regularly as part of baseline staffing numbers. In August 2017 the average supervisory time accomplished was 31%. It is thought that full benefits of the supervisory model will not be realised until substantive staffing levels improve but the model continues to support the achievement of patient safety outcomes and quality experience, the targeted reduction in temporary staffing usage and supporting the influx of staff requiring supervision appointed via recruitment campaigns.

Workforce development team expansion

The workforce development team was created in 2012 although there was a rostering implementation team from 2008 which at its peak consisted of 6 individuals (two of whom returned to their clinical jobs in 2011). In 2011 electronic rostering project implementers or leads for rostering roles were created. In 2017 the workforce development lead role was created, previously this was part of another manager's job who retired in 2016. In 2014 was the introduction of two rather than one data analyst, in 2018 there are four people who cover workforce reporting as part of their overall role with direction from the senior workforce analyst and back up support from the senior specialist who manages the workforce helpdesk team. In summary the workforce team was 9 in 2013, increased by 2 in 2017 and another 6 in 2017. In 2018 the mission and demand of the team is increasing so additional growth is anticipated.

A2.3 Daily review of staffing levels and responding to shortfalls

Daily planning, reviewing and monitoring

Prior to 2013 management of nurse staffing levels and instances of insufficient staffing were escalated in the following order: ward leader, Matron, divisional nurse director or Matron (on call out of hours), Deputy Director of Nursing. Divisions independently reviewed their staffing situation on a daily basis and either a matron or head of nursing became the divisional bleep holder to oversee staffing and beds in their division. Incidents around staffing have been collected systematically since 2009 and red flags added into this following the 2014 NICE guidance.

Post Francis daily management of safe staffing was escalated in the same way. However, divisions together reviewed their staffing situation at a daily meeting linked to site management (e.g. divisional Head of Nursing, discharge team, workforce development team) and either a Matron or Head of Nursing would take responsibility to oversee staffing, temporary staffing and beds in their division, highlighting areas of concern as required (e.g. increased demand, short notice leave, staff sickness and discharge planning). Nurse managers expected their staff to have already identified and anticipated most situations in meetings, such that responses should already be well underway or resolved. Case A Registered Nurses also acknowledged that whilst the nursing teams generally made most safe nurse staffing related decisions it was everybody's business, the responsibility of all the hospital and its many departments.

Relations with colleagues and managers were key to safe staffing. When asked who they would turn to if they needed help with safe staffing, Registered Nurses usually identified their colleagues and the next person in their operational hierarchy alongside Matrons and/or the divisional Heads of Nursing. The Deputy Director of Nursing was the recognised lead for safe staffing at Case A, but nurse managers also recognised the policy leads at the Royal Colleges of Nursing and Midwifery as important sources for safe staffing advice. Registered Nurses generally felt supported by their colleagues and managers in making safe staffing decisions but there were clear tensions during the implementation process. Some Registered Nurses felt pressured by managers during meetings, including huddles, to say 'it's safe' (in their opinion) when it's not and that the use of the 'safe staffing' language in reports, on wards etc. was not sending out the right message (30th Oct workshop – p3). Some nurse managers also reflected that you have to 'push harder' when presenting safe staffing issues to managers with non-clinical backgrounds (Phase 2 workshop – pTBC).

Balanced rostering showed a key link between staffing & financial budget. It was completed by ward lead or band 6, including requests for additional staff (e.g. vacancies, maternity leave) and published 6 to 8 weeks in advance. Reviewed 4 weeks beforehand, particularly possible bank/agency needs.

Case A introduced the use of red flags (as identified in 2014 NICE guideline (50) on safe staffing as part of the electronic system based on the SNCT as a pilot in 2017. This provided immediate alert of 'red flag' staffing challenges and was ideally backed up with AER (Adverse Event Report).

Post Francis benchmarking through 'model hospital' from NHS Improvement was used as a response to the Carter Report (63), specifically to look at CHPPD across other organisations. It was used during staffing reviews as another sense check. Individual services also used benchmarking when looking at change and linked with specific services in other trusts using local networks or AUKUH to send the request.

Short term response to staff shortfall

The short-term responses were similar before and after Francis and included transferring staff as required from low risk areas to higher risk areas, funding additional shifts i.e. over time, requesting temporary staffing cover and temporary closure of beds.

Short term response – internal escalation: The first response was to review and escalate the problem internally within their wards and care group and this may involve contacting the Matron (out of hours) if necessary. Mobile phone technology helped here, particularly the WhatsApp staffing groups Registered Nurses had developed themselves. Nurse managers expected their staff to have reviewed whether they could manage by themselves using the strategies in Table 1, typical internal responses including:

- Working harder, missing breaks, staying on later (Source: Phase 1 Workshop). This would constitute a red flag at Case A.
- Moving shifts and staff around
- Funding an extra shift

Consideration would also be given to factors including the elective take and discharge rate for the ward(s) that day, internal staff capacity, capability and skill mix and the availability of internal support from non-rostered staff (e.g. supernumerary, staff on study leave).

Short term response – external escalation: Where staff are unable to resolve staffing shortfalls internally, the next step involved escalation beyond their own ward/care group to other divisions/care groups across the whole Trust and, where necessary, beyond to bank and agency. Again, Registered Nurses stressed that their many strategies sought to prevent wider escalation or make plans for it as early as possible but they admitted these responses were now an everyday occurrence. Wider escalation began by contacting the Duty Matron/Bed Manager (out of hours) to explain the situation and the internal review before considering the situation across the whole hospital picture and wider options to restore the safe staffing balance.

The first option involved moving staff from wards in other care groups. Hospital wide staff vacancies meant there were fewer better staffed areas, but Registered Nurses acknowledged that some areas had higher vacancies than others.

The second option involved requests for the authorisation of staff from bank/or agency. Main bank and agency requests go out 4 weeks in advance and before staff are moved on the day from other areas so this is only for additional agency over and

above establishment or higher cost agency solutions. This request would happen via senior nurse managers, usually Matrons and the Director/Deputy Director of Nursing during week days and via the Duty Matron/Bed Manager out of hours. Nurse managers were trying to avoid high cost agencies, though this was still required for last minute requests particularly in highly specialist areas (e.g. critical care).

The use of temporary staffing was also causing tensions. Registered Nurses recognised bank and agency staff were vital, but in the heat of the moment some Registered Nurses described a tendency for staff to go to the bank instead of the roster and they hoped this would change now these functions were linked in the electronic roster and the electronic system based on the SNCT. However, software problems were also making it harder to transfer staff and resulting in delays in payments for bank and agency staff that were causing problems with the retention of temporary staff.

Short term response – temporary closure of beds: As a last resort when other options hadn't worked Case A operated a system of 'flexing down' beds in some specialties where this was possible to do with the capacity, temporarily closing them depending on the staffing levels. This system was introduced around 2 years ago and continued to operate on a regular basis given the high vacancy rates.

Long term response to staff shortfall

The long-term responses Post Francis included an ongoing electronic, synced up, monitoring and review process with daily site wide staffing review meetings. Pre and Post Francis responses comprised establishment setting and effective rostering at ward level from accountable ward leaders recognising contextual factors such as patient flow, acuity and dependency, service delivery needs, ward layout and skill mix.

Both short and long-term responses before and after Francis included the professional judgement of the nursing directorate involved with the decision making processes.

A2.4 Reporting nurse staffing levels - internally and externally

Ward to board reporting

Pre Francis the Deputy Director of Nursing created an annual nurse establishment report for the board.

Post Francis monthly safe staffing was reported to the board, the information and technology software company's electronic roster and electronic system based on the SNCT provided an easily accessible interface allowing the board to view the Trust's planned versus actual nursing numbers, fill rates, CHPPD and acuity and dependency data in the meeting with minimal preparation. These data were also accessible for ward leaders, Matrons and divisional Heads of Nursing. The Deputy Director of Nursing prepared the Trust's board nurse establishment report (6 monthly from 2013 and annually from October 2017). Showing these data to the board allowed trends or hotspots in staffing to be evidenced and actioned upon.

Quarterly reports from division on staffing and care quality were also prepared and sent to board.

Nurse staffing data made public

The workforce data analyst prepared and distributed reports monthly on CHPPD, fill rates and planned versus actual nursing numbers to the national data repository. The collection of CHPPD data was in response to 2016 NQB guidance (65) where it was nationally agreed as the metric measurement for staffing levels. Daily 'planned versus actual' nursing staff numbers were published at the ward level and monthly staffing 'planned versus actual' nurse staff numbers were published for patients and public on the Trust's website alongside a copy of the staffing reports presented to the board.

Balancing the need to be open with patients about staffing levels against not worrying them unnecessarily was a recurring theme. Registered Nurses thought it was unprofessional to tell patients about this, but accepting their duty of candour they explained that if it's risky and patients ask they apologise and say they're short staffed. Further the perception amongst patients that Registered Nurses were understaffed and overworked (e.g. 'you look busy') was another complicating factor. Following their wider concerns about the 'negative' language of safe staffing numbers some thought an alternative was needed, for example some form of reassurance that the problem is recognised and has been escalated as per the strategies outlined above.

External networks

All Registered Nurses recognised the importance of the Care Quality Commission (CQC) as an external regulator of their work but they had mixed views about its impacts on safe staffing at Case A. Its work ensured transparency and helped make

improvements to staffing and other areas that might otherwise not have happened, but one nurse manager reflected that their work was limited to regulating national policy implementation and what every organisation should already be doing to ensure safe staffing (A1 interview – p7). For example, on its last visit the CQC recognised that Case A was doing everything it could in safe staffing terms, but it's still got vacancies and therefore safe staffing remains an everyday challenge. Another nurse manager recalled presenting the CQC with a research paper on safe staffing improvements to her service during a 2014 inspection that was then also presented to the Board and led to further funding for her service.

In terms of external networks, one nurse manager constantly worked with three other Trusts involved in two safe staffing related research projects and these were an important driver of organisational safe staffing improvements. Beyond the technical advantages regarding systems, tools and technologies, nurse managers also benefited from the opportunities to share knowledge, experience and advice with study colleagues in similar situations. One nurse manager regularly used the AUKUH Deputy Director network for advice, particularly in interpreting national staffing related policy requirements. Other important sources of safe staffing advice included the Royal Colleges of Nursing and Midwifery and specialist networks (e.g. Association of Chief Children's Registered Nurses) and conferences. One nurse manager was also participating in a small research project with two other NHS England Hospital Trusts that was exploring more flexible nurse rostering options.

A2.5 Indicators

Assuming there were no obvious crises the first indicators of a safe ward was whether they met their establishment criteria across all shifts. The second indicators focused on whether patient and staff needs were being met and were informed by data sources too, particularly the right skill mix and evidence of no harm being caused (e.g. no red flags) and that patients were safe and their needs met (e.g. not in pain, timely interventions). Acuity and dependency data were mainly used on a reactive basis following analysis to inform longer term staff planning strategies, particularly the ward establishment, but staff looked forward to using the data from the electronic roster and the electronic system based on the SNCT more proactively and in real time in the future. Professional judgement remained vital, Registered Nurses often describing 'the feel of the wards' whilst wrestling with broader questions around what's 'safe', what's 'optimum' and where you draw that 'safe staffing line' as one nurse manager described it (A1 interview – p7).

In the future Registered Nurses looked forward to using safe staffing data (particularly CHPPD) in a real time and more proactive way, some already reflecting that there was enough data to begin predictive modelling of their wards to inform future planning. They were also curious to know more about the bigger picture, specifically to find out how acuity and dependency data compares across wards and to triangulate more against other data to better inform the uncertain definition of safe.

A2.6 Overview of changes to approaches to nurse staffing

Whilst many of the daily processes have remained largely unchanged, senior Registered Nurses described how the issues around ensuring sufficient nurse staffing were higher up the organisation's agenda – greater receptivity to safe-staffing issues raised throughout the Trust and at Board level.

Box A1: Key changes in recent years to achieving safe-staffing

- → Workforce and recruitment patterns – site wide meetings daily
- → Electronic tools offering a functional and integrated view of the staffing numbers and levels and patient acuity and dependency
- → Recording red flags in line with NICE 2014 guidance (50) and reporting on these monthly at Board level
- → Case A becoming increasingly technologically savvy as an enabler for changes in line with NQB policy (10,65)
- → Introduction of benchmarking CHPPD across other trusts using 'model hospital' from NHS Improvement (following the Carter review and 2016 NQB guidance (63,65))
- → Staff undertaking thrice daily patient census of acuity and dependency using the electronic roster and the electronic system based on the SNCT

- Reporting safe staffing data to Board every month (fill rates, CHPPD and red flags)
- Establishment review with report at Board level 6 monthly from 2013 and annually from October 2017
- Publishing nurse staffing numbers (fill rates) daily at ward level
- Publishing, in line with the 'government's hard truths report' (47), nurse staffing levels monthly on the Trust's website for patients and public
- Publishing nurse staffing levels in a national report monthly to the national data repository (fill rates and CHPPD)
- Implementing the supervisory ward leader model
- Expansion of the workforce development team from 9 to 18 individuals from 2013-2017.

A3. Recruitment & retention

International recruitment

Case A has a long history of recruiting from overseas. There were concerted campaigns in the late 1990s and early 2000s – campaigns then started again in 2012 and have continued since. This was a key part of the recruitment strategy as workforce planning took into account supply and demand which showed there was not an adequate domestic supply of Registered Nurses and this position was worsening.

Between 2014 and 2018 numbers of nursing cohorts from the EU decreased. During the first two years every 1-2 months a cohort of 25 Registered Nurses were recruited. In 2018, cohort 59, every three months a cohort of 9-15 Registered Nurses were recruited. International recruitment is a centralised and across-trust procedure, the role undertaken by one Matron 0.2 WTE alongside the Deputy Director of Nursing.

Job descriptors

The job descriptors for band 7 Registered Nurses shared many commonalities from 2008 to 2017. Both time periods stated that the role included audit and standard setting, reviewing skill mix and staff roles, providing a system to ensure staff roster met clinical requirement and taking a lead role in recruitment and retention and staff development. The 2017 job descriptor added that the band 7 nurse role included using nurse establishments to ensure nurse staffing on all shifts achieved quality care.

Recruitment and retention

All Registered Nurses interviewed agreed that the recruitment and retention of nursing and midwifery staff was critical to safe staffing and groups were being formed across Case A and involving HR and others to identify where recruitment and retention could be improved. Current activities were operating on three different levels. Within Case A itself, a wide range of local and national recruitment strategies were ongoing and included rolling media adverts, open days and recruitment fayres with staff from across the divisions. In response to UK nurse shortages, international recruitment was also increasing in adult services and targeting Europe and the Philippines. For children's services there was currently no international recruitment due to difficulties with registration requirements, but vacancies were such that Case A was beginning to consider this option.

Improving retention was also critical and Case A were working on clear career development and support plans for nursing and midwifery staff. For example Case A had reviewed the role of its Registered Midwives and developed a foundation degree for support workers, thereby creating a 'home grown' pathway towards becoming Registered Midwives (A2 interview – p8). In the last year some divisions had also set up their own recruitment and retention groups. A lead nurse was appointed and the groups worked with staff from all levels to inform these strategies, particularly identifying more effective recruitment methods and better supporting career development (e.g. educational programmes). One nurse manager, who also led her divisional group, commented that their work was all about valuing Registered Nurses, particularly at such a challenging time (A3 interview – p8).

Services were also constantly reviewing their work and in amidst ongoing staff shortages Case A was developing alternative pathways for its Registered Nurses and Registered Midwives. For example the roles of Clinical Nurse Specialists and Advanced Nurse Practitioners were under review, particularly given their impacts on the nursing pool and ongoing shortages in Doctors. Registered Midwives were being supported and trained by Case A to take on more roles traditionally undertaken by Doctors alongside their main responsibilities. Amidst continuous reviews of the work of Registered Nurses and Registered Midwives, one midwifery manager thought there was a need for greater scrutiny of Doctors too (A2 interview – p9).

More broadly, Case A Registered Nurses and Registered Midwives admitted they needed to work better with the local University to recruit and retain newly qualified Registered Midwives. For example, one midwifery manager had recognised a tendency amongst Registered Midwives to only stay for one year after qualification (this had improved a bit recently, but could be undermined by loss of bursaries), therefore she thought there should be more emphasis on 'growing your own' local staff and engaging more consistently with the University (A2 interview – p8). For their profession, Registered Nurses recognised that the nursing workforce was changing quickly with an emphasis on more specialist roles alongside an expansion of nursing support staff roles and more pathways to registration. One nurse manager reflected that with decreasing numbers of students applying for University based nurse training, all Registered Nurses had much work to do to reinvigorate the profession, to counter the negative press and revisit why people choose nursing (A1 interview – p11)?

Other concerns

Building on her concerns that national safe staffing guidance had 'hooked' a whole generation of Registered Nurses into a numbers culture (e.g. 'I should have 6 on and I've got 5 on'), one nurse manager feared this culture was particularly prevalent on the wards (A1 interview – p8). The pressures on Registered Nurses to work harder for longer were recognised to be contributing to wider problems of staff sickness and retention, but Registered Nurses were hopeful that safe staffing related improvements would in time help to reduce these problems. The constant transfer of staff from 'better' staffed wards to others was another source of tension however Registered Nurses did express their commitment to a 'whole hospital' approach to safe staffing. Registered Nurses also wanted to acknowledge the value of nursing support staff on understaffed wards who can be of more value than transferred Registered Nurses unfamiliar with wards and their operation. In midwifery services one manager commented that transfers of staff from the post-natal ward might mean that some people won't get such a great experience, but safety and flexibility are vital, the transfer is temporary (maybe 1 hour) and the woman in labour the priority (A2 interview – p7). Registered Nurses also didn't like it when all their rostering work was 'rewarded' by the transfer of staff to wards/areas in greater need. One nurse manager also questioned whether the need to constantly move staff around suggests instead that the [establishment] model for the ward maybe wrong and need reviewing?

To explore broader issues in safe staffing, Registered Nurses were asked to identify the greatest challenges in getting the right people with the right skills in the right place at the right time and these are summarised in **Table 1** below and were frequently interlinked. To build on **Table 1** for the future, nurse managers were also asked what would happen to nurse staffing in the next five years. Having worked through many 'NHS cycles' all three agreed that things would probably get worse before they improved in this latest cycle, but there was also some optimism about the changes in workforce and the tools and technology to improve safe staffing.

Table A1: Greatest safe staffing challenges in Case A

Challenge	Main issues for Registered Nurses
Shortages of Registered Nurses & Registered Midwives	→ Nurse vacancies remains a key issue for Case A, one that is addressed with recruitment and retention strategies outlined above → "I've always felt like we'd run out of Registered Midwives before we run out of money" (A2 interview – p9) → Less midwife vacancies now, but a few years ago very bad & impacted by factors including differences to nursing, changing roles (e.g. scanning technology) and competition for recruitment (e.g. health visitors).
Increased patient needs & local context	→ Registered Nurses described patients generally becoming increasingly sick, complex and more dependent in recent years. Discharge was an ongoing concern. → In maternity numbers of birth hadn't changed in recent years (dropping slightly?), but women older and with more complex acuities and co-morbidities (e.g. obesity, mental health concerns). → Additional flexible midwifery staffing to support women in areas of social deprivation.

Challenge	Main issues for Registered Nurses
Recruitment & retention	→ Many activities (see above). → But Case A workforce remains unstable due to challenges here. → Negative media coverage doesn't help – 'why would you become a nurse?'
Registered Nurses tired & frustrated	→ Registered Nurses were concerned that covering vacancies by missing breaks, staying late (etc.) was making them tired and sick, with knock on effects (e.g. retention, poor morale and work-life balance). → "[We are] unable to care, we give our best but that's rubbish isn't it" (30th Oct. workshop – p3).
New - Culture of safe staffing by 'numbers'	→ A by-product of some national policy, that more junior and inexperienced staff were potentially more at risk from (in view of A1).
Registered Nurses reluctant to 'challenge' safe staffing decision making	→ Some Registered Nurses felt pressured into saying their staffing was safe during meetings, including huddles, and thought there should be more challenge by Registered Nurses to ensure staffing appropriate to acuity and dependency.
Lack of time for staff supervision & development	→ Registered Nurses concerned about the lack of time and budget for training, supervision, mentoring etc. during the working day.
Student Nurses	→ Impacts of recent withdrawal of University training bursaries in England. → Local University midwifery graduates often only stay for 1-2 years.
High turnover of ward Staff, impacts on experience, skill mix, leadership	→ Factors included the impacts of shortages, lack of staff development, different career pathways (e.g. specialisation), generational differences (e.g. younger generations need more support), increasing loss of experience due to retirement over next 10 years. → Implications = younger less experienced workforce (esp. bands 6 & 7) who less able to maintain standards, skill mix, support, challenge and lead.
Bank and agency staff	→ Vital to maintaining nurse staffing on wards, but late payments due to software issues causing retention problems at Case A.
EU & international Registered Nurses & Registered Midwives	→ Many need significant support, which has staffing implications. → Brexit not happened yet, but Registered Nurses feared its consequences over time. → International Registered Nurses failing IELTs (International English Language Test) examinations, despite significant support from Case A, Registered Nurses concerned that NMC are getting this policy wrong.
Changing nursing & midwifery workforce	→ Workforce changes broadly welcomed, including development of nursing support staff roles, → But continued need for sensible (i.e. beyond 'numbers') discussion about this.
Case A buildings	→ The ageing of some of the Trust's buildings was considered a problem for staff recruitment and retention, particularly in comparison with other Trusts.

Case B

B1. Case B: Profile in 2017

Case B typifies a small district general hospital associated with a large town and serving a rural area. It usually covers a city population of approximately 400,000, doubling that population over the nearby region in relation to some services.

B2. Processes to plan, monitor and review nurse staffing

B2.1. Establishment setting

Previously the adverse incident reporting system, the Trust's own assessment of acuity and dependency system and records of patient outcomes were used to inform the nurse establishment and future reviews alongside discussion involving professional judgment between the nursing directorate and ward leaders. Nurse staffing establishment review reports were put to Case B board annually where budget setting also informed decisions.

In 2017 the Assistant Director of Nursing created reports on the electronic roster and the electronic system based on the SNCT including red flags, Care Hours Per Patient Day (CHPPD) and planned versus actual nurse staffing numbers data and took this staffing information to the board monthly, with a full establishment review undertaken bi-annually. Key to informing the decision-making process of the 6-monthly establishment review was professional judgment and two-way conversations between the Assistant Director of Nursing, Heads of Nursing, Matrons and ward leaders as well as finance and HR. National and local guidelines, health roster and safe care data (such as acuity and dependency data, red flags, CHPPD and planned versus actual nurse staffing numbers data), temporary staffing usage, budget setting, professional judgement, benchmarking and incident reporting also informed this process. In turn the establishment review at board level informed budget setting and HR management as well as vice versa.

B2.2 Systems and structures to support safe staffing

System used

Between January 2010 and August 2015 Case B used a paper nursing roster, prepared and stored at ward level. The patient flow of admissions and discharges and temporary staffing usage were also collected using a paper system at ward level. Quality control of these data were completed by Matrons in each clinical division.

Patient census on acuity and dependency were audited annually for a 28 day period using a tool based on the Trust's own model adapted from Shelford. Lead Registered Nurses from each ward used paper data collection methods that were prepared and collated electronically. From 2010 the acuity and dependency data was reflected in establishment reviews.

Between March and August 2015, a rolling implementation programme for an electronic roster for Nursing commenced with a new software company. The electronic roster for bank commenced in June 2015 and the electronic system based on the SNCT in October 2015. Quality assurance of these data was carried out by a band 7 electronic roster programme manager and Assistant Director of Nursing.

Registered Nurses' views of tools and technology

Registered Nurses' views of tools and technology largely focused on the Trust's electronic rostering system and the electronic system based on the Safer Nursing Care Tool (SNCT), though other software (e.g. incident reporting) were also important for monitoring and raising issues. From the very start nurse managers reflected that the initial implementation of the electronic roster and the electronic system based on the SNCT had been relatively smooth, helped in part by its intuitive nature, many IT literate staff spread across the wards, the widespread availability of iPads on the wards and the Trust's past experience in electronic software development. Monthly electronic roster and electronic system based on the SNCT meetings with ward leaders across all wards and divisions also helped to identify problems and support staff.

Nurse managers valued its potential for recording complex patient and resource needs, particularly for patients requiring specialist care. For example one nurse manager reflected that CHPPD data was providing powerful evidence that her staff

were not providing the required care that their patients need (B3 interview – p8). Other tools and technologies (e.g. incident reporting systems) informed this baseline, but together nurse managers valued how they were creating a 'whole picture' of patients and wards to inform staffing decision making locally and hospital wide.

Other Registered Nurses agreed that these developments were creating safe staffing data that was better than ever before, but they also questioned whether tools and technology were yet benefitting patients and staff by raising the following concerns. There was widespread recognition that it was still early days in the development of safe staffing tools and technologies, one ward Sister likening the process to riding a bike, with Case B sill using stabilisers (29th Sept workshop – p2). Nurse managers recognised that completing the electronic roster and the electronic system based on the SNCT put considerable pressure on ward Registered Nurses when ultimately they want them caring for the patients, but they hoped that staff were beginning to see the benefits of completion via improved staffing levels and that staff 'buy-in' was improving.

Registered Nurses repeatedly explained that they might not get near a computer all day, let alone have time to make data entries. Registered Nurses were well aware of the implications of this but getting the 'balance' right between data entry and all their other tasks was very difficult and for many there simply was no balance, the safety of their patients and colleagues was the priority. Despite this, one ward Sister reflected that after a bad week (with safe staffing no data entered) "...you just get bollocked, not asked whether you've had a bad week" (29th Sept workshop – p2).

Supervisory ward leader model

The actual funded establishment to deliver care reflects the increase in supervisory status for ward leaders. Meaning they have increased supervisory time in their clinical areas to deliver high-quality clinical leadership. A phased increase in supervisory time commenced in April 2017 with the aim to increase all ward leader roles to full supervisory status in the next 2 years.

Full benefits of the supervisory model will not be realised until substantive staffing levels are achieved. The model aims to support the achievement of patient experience and safety outcomes at ward level, the targeted reduction in temporary staffing usage as well as supporting the high volume of staff requiring supervision appointed via recruitment.

To enable the ward leaders to be effective in their supervisory status a focused educational programme is being delivered over 6 days; 'leading safe and effective quality patient care, development programme for ward leaders (band 7)'.

In attending this course, they are expected to have a clear focus on their role in order to:

- Discover own leadership strengths and weaknesses
- Use and encompass the language of the 6C's into everyday work
- Manage time and prioritisation
- Manage Teams
- Undertake the effective risk management of their service
- Effectively deal with complaints, investigations
- Review productive ward / service improvement skills
- Be able to deputise in the absence of senior manager
- Effectively manage resources

Creation of the electronic roster team

In February 2015 the electronic roster team was created consisting of one band 7 electronic roster programme manager and two band 5 electronic roster administrators. The team further expanded in July 2017 to include one band 4 data administrator.

B2.3 Daily review of staffing levels and responding to shortfalls

Daily planning, reviewing and monitoring

Previously wards escalated safe staffing concerns to their division's dedicated nurse staffing bleep holder, a lead nurse or Matron, 24 hours a day. Accountability remained with each separate division who largely self-managed their staffing with daily meetings.

In 2017 the safe staffing escalation processes in hours included Matron, Head of Nursing or Assistant Director of Nursing cover and bleep cover. Out of hours bleep cover was provided by a Matron. The role of the bleep holder was to take responsibility to oversee staffing, temporary staffing and beds in their division, highlighting areas of concern in the relevant escalation system (ward leader, Matron, divisional nurse director or Matron on call, Assistant Director of Nursing). Relations with colleagues and managers were key to escalation processes. When asked who they would turn to if they needed help with safe staffing, Registered Nurses usually identified the next person in their operational hierarchy and/or the Directors of Nursing, the Assistant Director of Nursing being the recognised lead for safe staffing. Nurse managers also relied on their colleagues and ward leaders for advice and support alongside the electronic rostering team and the clinical management team for out of hours working.

Staffing levels were proactively reviewed daily with at least four safe staffing meetings held a day with site management and nurse members from all divisions (ward staff, Matron/clinical management team (out of hours), board holders and others (e.g. discharge team, temporary staffing office, electronic roster team) with actions agreed and acted on. For example, monitoring demand (through front and back doors) and responding to problems (e.g. increased demand, short notice leave, staff sickness, discharge planning). Staffing technology including electronic rostering, acuity and dependency data, red flags and incident reporting data were used to inform strategies, particularly establishment, but acuity and dependency data rarely used 'on the day'.

Bed meetings happened twice a day to review discharges and staffing adequacy, usually attended by ward staff, Matrons, a clinical manager and director.

From April 2016 red flags (as identified in the NICE 2014 guideline on staffing (50) were recorded on the electronic system based on the SNCT and the incident reporting system. Ward staff undertaking twice or thrice daily acuity and dependency census inputted these data (generally this was the nurse in charge band 5, 6 or 7).

Since the collection of CHPPD data, the electronic system based on the SNCT have an automated system based on the percentage of staff available against requirements of CHPPD. This is indicated by a RAG (Red, Amber, Green) system. Red indicating shortfall or hours and green indication sufficient CHPPD.

Short term response to staff shortfall

The short-term responses were similar before and after Francis and included transferring staff as required from low risk areas to higher risk areas, funding additional shifts i.e. over-time, requesting temporary staffing cover and temporary closure of beds. Registered Nurses sometimes felt removed from and potentially undermined by two groups also involved in safe staffing decision making. Board holders and (out of hours) clinical management teams had considerable responsibility for nurse staffing at Case B, particularly in transferring staff between wards, but Registered Nurses were concerned that their decision making remained largely based on 'staff numbers' (as per ward establishment) only and how, by ignoring patient acuity and dependency and how wards work, such transfers could make staffing related pressures worse. Board holders were band 3's, since 2007 their role involved daily staffing reviews and managing bookings for bank and agency. One ward Sister commented that having board holders had removed peoples' ability to think for themselves sometimes (19th Sept workshop – p5), whilst there was general agreement amongst Registered Nurses that the clinical management team is rarely seen and sometimes takes a long time to action bank cover particularly (19th Sept workshop – p2; 29th Sept workshop – p3). The constant transfer of staff from 'better' staffed wards to others was another source of tension. Registered Nurses were committed to the need for a 'whole hospital' approach to safe staffing, but this required all staff to be honest about what was happening in their wards and some Registered Nurses considered it unfair when staff were transferred from one poorly recruited ward to fill another and as a consequence their rotas were 'wiped out' in an instant (19th Sept workshop – pp2&5)

Short term response - internal escalation: The first response was to review and escalate the problem internally within wards and the division. This may involve contacting the board holder and Matron/clinical management team (out of hours) if necessary. Nurse managers expected their staff to have reviewed whether they could manage by themselves using the strategies mentioned above, typical internal responses including:

- Working harder, missing breaks, staying on later
- moving shifts and staff around
- funding an extra shift

Consideration would also be given to factors including the elective take and discharge rate for the ward(s) that day, internal staff capacity, capability and skill mix and the availability of internal support from non-rostered staff (e.g. supernumerary new starters, students).

Short term response – external escalation: Where staff were unable to resolve unsafe staffing internally, the next step involved escalation beyond their own ward/division to the whole hospital and, where necessary, beyond to bank and agency. Again, Registered Nurses stressed that their many strategies sought to prevent wider escalation or make plans for it as early as possible but they admitted these responses were now an everyday occurrence. Wider escalation began by contacting the Duty Matron/Clinical Management Team (out of hours) and board holders to explain situation and the internal review before considering the situation across the whole hospital picture and wider options to restore the safe staffing balance.

The first option involved moving staff from wards in other divisions, though staff vacancies meant there were fewer better staffed areas, with some areas (e.g. medicine for older people) affected more than others. Areas with high vacancies were under constant review and considered in the context of vacancies across the hospital by the board holders, such that divisions with lower vacancies were expected to move staff to areas in greater need for a certain amount of time though such transfers were an increasing source of tension between Registered Nurses (see below).

The second option involved requests for the authorisation of staff from bank and/or agency via senior nurse managers, usually Matrons and the Director/Assistant Director of Nursing during week days and via the duty Matron/clinical management team out of hours. The Trust's temporary staffing office also played an important coordinating role here. Shifts were normally cascaded to the bank and the least expensive agencies first, until the shift vacancy becomes critical. Nurse managers were trying to avoid high cost agencies, but they admitted they needed them, particularly for critical care (B1 interview – p5).

The use of temporary staffing was also causing tensions. Nurse recognised bank and agency staff were vital, but their use in backfilling gaps following transfers to other wards was one source of tension there. For example the potential skill mix gap between some temporary staff and new recruits when compared to existing staff was an issue, particularly the amount of support the former required that took time from other work. Ward Sisters acknowledged this was not helped by their own limited opportunities for supervision and training due to staff shortages and other pressures on their time, though some hoped that as they would soon become supernumerary they would have more time for these activities and to oversee the ward. Registered Nurses also flagged problems including bank staff cancelling at the last minute, shifts going out to agency that could no longer be seen (and filled) by bank staff and a trend whereby some areas made agency requests at the last minute which could have been prevented with better planning. One ward Sister questioning whether bank staff who cancel at the last minute could be sanctioned, for example using a 3 strikes and you're out policy (29th Sept workshop – p3)?

Long term response to staff shortfall

The long-term responses Post Francis included an ongoing electronic, functional and integrated, monitoring and review process with daily site wide staffing review meetings. Pre and Post Francis responses comprised establishment setting and effective Rostering at ward level taking into account contextual factors such as patient flow, ward layout and skill mix. Both short and long-term responses before and after Francis included professional judgement.

Staff rosters were produced 6-8 weeks in advance by band 6 or 7 ward leaders, including requests for additional staff (e.g. vacancies and maternity leave) and were reviewed by the Assistant Director of Nursing four weeks beforehand, particularly with regard to bank and agency needs. This illustrated a key link between staffing and the financial budget. Reviews of skill mix for producing nurse staff rosters were managed at ward level and took into account patient dependency and acuity, service delivery needs, patient flow rates of admissions and discharges and ward layout.

Quarterly care group performance meetings including staffing and care quality were held.

B2.4 Reporting nurse staffing levels - internally and externally

Ward to board reporting

Post Francis electronic roster data were collated electronically for all wards by the electronic roster team, consisting of, since February 2015, one band 7 electronic roster programme manager and two band 5 electronic roster administrators and since July 2017 one band 4 data administrator. Up until July 2017, the electronic roster programme manager prepared and distributed reports of the data to the Assistant Director of Nursing, and national data repository for publication to patients and public. Since July 2017 the band 4 administrator has taken on this role. Finance for workforce also informs this process by sending budget statements to the electronic roster programme manager to incorporate into the reports as budgeted WTE.

In 2017 the Assistant Director of Nursing created monthly reports on the health roster and safe care data for the board (including red flags, planned versus actual nursing numbers and CHPPD), with a full establishment review at board level taken twice annually. The purpose of regular reporting was to identify nurse staffing trends and hotspots to the board to prompt action.

Nurse staffing data made public

The electronic roster team prepared and distributed national reports monthly on CHPPD and 'planned versus actual' nurse numbers to the national data repository. Daily 'planned versus actual' nursing numbers were published at the ward level and monthly staffing 'planned versus actual' nurse numbers were published for patients and public on Case B website. Balancing the need to be open with patients about staffing levels against not worrying them unnecessarily was a recurring theme. Further the perception amongst patients that Registered Nurses were understaffed and overworked was another complicating factor often compounded by the media.

External networks

The Assistant Director of Nursing constantly worked with 3 other Trusts involved in two safe staffing related research projects and they considered this involvement an important driver of organisational safe staffing improvements. Beyond the technical advantages regarding systems, tools and technologies, nurse managers also benefited from the opportunities to share knowledge, experience and advice with study colleagues in similar situations. The electronic roster team also worked regularly with other Trusts, particularly comparing safe staffing data, whilst some division Registered Nurses had ongoing relationships with neighbouring Trusts in the development of services that included staffing related issues. However, nurse managers were also concerned that data sharing was currently more limited because the county was in the middle of a Sustainability and Transformational Partnership (STP) and clinical services review and re-structuring that included competition between Case B and other county hospitals for designation as preferred provider post in the future. Nurse managers also attended the annual Allocate conference, one likening it to a "big safe staffing jamboree" (B1 interview –p8) given the opportunity to meet colleagues from across the UK and compare experiences in the use of electronic rostering and the electronic system based on the SNCT and wider nurse staffing issues.

B2.5 Indicators

Assuming there were no obvious crises the first indicators of a safe ward was whether Registered Nurses met their establishment criteria across all shifts. The second indicators focused on whether patient and staff needs were being met informed particularly by evidence of no harm being caused (e.g. no red flags due to falls, pressure sores) and that patients were safe and their needs met (e.g. hydrated, not in pain, call bells answered, family/carers not distressed, medicines given on time). Acuity and dependency data was mainly used on a reactive basis following analysis to inform longer term staff planning strategies, particularly the ward establishment though staff hoped to use the tool more often and proactively in time.

Other indicators include:

- → Vacancy rates as observed through national monthly reporting of planned versus actual nursing numbers.
- → Benchmarking – Case B reviews data model hospital gives them including CHPPD, pressure ulcers, falls and cost of staff, in order to compare and contrast to similar trusts.

B2.6 Overview of changes to approaches to nurse staffing

Box B1: Key changes in recent years to achieving safe-staffing include:

- Collecting electronic patient acuity and dependency data based on the SNCT in real time thrice daily.
- Assistant Director of Nursing creating each month a report for the board acuity and dependency data, CHPPD, planned versus actual nursing numbers, fill rates and red flags.
- Electronic roster team submitting CHPPD, fill rates and planned versus actual nursing numbers to a national repository each month.
- Wards publishing planned versus actual nursing numbers daily.
- Publishing planned versus actual nursing numbers monthly for patients and public on Case B website.
- Undertaking a 6 monthly full nurse establishment review informed by budget, functional integrated electronic rostering and acuity and dependency data. Outcomes of the review also circularly inform subsequent budget setting.
- Taking 6 monthly nurse establishment reports to board.
- Benchmarking CHPPD, pressure ulcers, falls and cost of staff in contrast to other hospitals using 'model hospital' provided by NHS Improvement prompted by Lord Carter's work and 2016 NQB policy (63,65).
- Producing balanced staff rosters 6-8 weeks in advance.
- Utilising an integrated and functional electronic temporary staffing system.
- Proactively reviewing staffing levels daily.
- Recording red flag incidents as defined in NICE 2014 staffing guidance(50) on the electronic system based on the SNCT and the incident reporting system.
- Expanding the safe staffing escalation procedure to include Assistant Director of Nursing bleep cover 'in hours'.
- Holding daily safe staffing meetings on site with all divisions.
- Adopting the supervisory ward leaders' model.
- Creation of the electronic roster team in February 2015.

B3. Recruitment & retention

Temporary staff usage was less in 2017 compared to previous years. Case B could only access data on temporary staffing after 2016 as the old system was not accessible due to the license closing.

International recruitment

International recruitment was centralised in November 2014 with the role creation of nurse recruitment coordinator, the purpose of which was to support line mangers in recruitment and to recruit across Case B. Prior to this nurse recruitment was not an area Case B had suffered with; a little international recruiting had been carried out by Matrons but records on these were not accessible. In the year 2016, Case B recruited 8 EU Registered Nurses and 1 international nurse. In 2017 14 EU Registered Nurses were recruited. The cost of work at Case B level included 2-3 hours of band 7 time to write the advert, shortlist and interview over skype. No travel costs were incurred.

UK nurse recruitment

UK Registered Nurses were recruited at ward level by a band 7 – time involved was approximately 2-3 hours (work included: writing advert using NHS employers (a resource for consistency) for NHS Jobs (a free advertising service), shortlisting, 30-minute interview and follow up to interview) Aside from band 7 work time no other costs were incurred. The HR process timeline was approximately 70 days, advert to start date and the process hasn't changed from 2010 to 2017.

Job descriptors

In 2010 job descriptor for a band 7 Registered Nurse at Case B specified the role included taking a lead role in recruitment and retention. This description was not mirrored in 2014 or 2017. The role of encouraging staff development was stated as a key part of the band 7 role in 2010, 2014 and 2017.

Recruitment and retention

Efforts to recruit and retain nursing staff were critical to preventing unsafe staffing and groups were being formed across Case B involving HR, Registered Nurses and others to identify where recruitment and retention were going wrong and how they could be improved. The pressures on Registered Nurses to work harder for longer were recognised to be contributing to wider problems of staff sickness and retention and its knock-on effects. Registered Nurses accepted they always moan about staff shortages, but vacancies in some areas were unprecedented and they were struggling to cope. "We escalate but there are no more staff, we have to crack on" (29th Sept workshop – p2). Despite being concerned their voices were not being heard, Registered Nurses were hopeful that safe staffing related improvements would in time help to reduce these problems, but in the meantime, they also called for clearer guidelines and support from HR towards safe staffing, particularly in areas like sickness management and flexible working.

Current activities were operating on three different levels. Within Case B itself, a wide range of local and national recruitment strategies were ongoing and included rolling media adverts, open days and recruitment fayres that involved nursing staff from across the divisions. In response to UK nurse shortages, international recruitment was also increasing and mainly targeting the Philippines and India. Planning for new apprenticeship pathways to registration were also underway but were fraught with difficulties, particularly the problems of employing students at band 2 when their attendance due to practice placements and University attendance maybe very limited.

Improving retention was also critical. Registered Nurses concerned about the lack of time for training, supervision, mentoring etc. during the working day and its impacts on their capability, competence and wider satisfaction. Case B were working on clear career development and support plans for all nursing staff. In the absence of a defined band 4 nursing support staff role at Case B a pilot project was being developed to 'grow your own' local nursing support staff via training through bands 2-4 and to Foundation Degree level and beyond, though local pathways to band 5 nurse registration didn't yet exist. This included additional support for international nursing support staff with qualifications like IELTs (International English Language Test), B1 describing how 3 from their first cohort of 21 had now registered with the NMC, another 2 would shortly be doing so and the next cohort of 12 was arriving the following month (B1 interview – p4).

Clear pathways were also being developed to support bands 5, 6 and 7 Registered Nurses to develop their careers, including advanced practice pathways, mini training programmes (e.g. for band 6-7 transition) and more supervisory time (esp. band 7s), but financial constraints on staff development were an ongoing concern for Registered Nurses.

More work also focused on better supporting staff in post, particularly making sure they're mentored, supervised and are working in the areas for which they have been trained, though this was hard with ongoing vacancies and transfers. Improving the management of staff leave was also critical, particularly short notice leave. Case B was also experimenting with incentives for covering harder to fill shifts and drive down high cost agency fees by paying bank staff an additional £50 on top of their fees for a 6-hour shift with an additional £50 on top (B1 interview – p7). Services were also constantly reviewing their work and in a context of likely continued shortages of Registered Nurses and Doctors in the foreseeable future Case B was developing alternative pathways for nursing staff. These included a clinical senior nurse/advanced nurse practitioner pathway (band 7s, to 8A plus) and managerial pathways (for ward Leads, Matrons etc.). Further, one nurse manager predicted more community working and change in the roles of all Registered Nurses as they become part of "one health economy" instead of conforming to traditional primary/secondary care roles (B2 interview –p8).

More broadly, Case B Registered Nurses were working with local Universities to recruit newly qualified Registered Nurses and develop more flexible pathways to qualification and registration. However, one nurse manager also thought Universities could better prepare Registered Nurses for the workplace by improving their awareness of all the options available, not just the most popular ones, in order to counter the recruitment problems faced by some services (e.g. older peoples') (B2 interview –p8). For their profession, Registered Nurses recognised that the nursing workforce was changing quickly with an emphasis on more specialist roles alongside an expansion of nursing support staff roles and more pathways to registration, beyond the University degree route. But one nurse manager thought there was a need for a more inclusive profession, one that recognises the need for graduate level Registered Nurses given the complexity of patients nowadays and their many wider needs (e.g.

safeguarding, deprivation of liberty etc.) whilst encouraging and supporting band 2-4 nursing roles that provide excellent standards of health care but are not 'essay writers' (B2 interview – p5).

Other concerns

Impacts of recent withdrawal of University training bursaries in England on the number of newly qualified UK Registered Nurses available to recruit in a few years' time.

High turnover of ward staff, impacts on experience, skill mix and leadership. Factors included the impacts of shortages, lack of staff development, different career pathways (e.g. specialisation), and increasing loss of experience due to retirement that wasn't being planned for. Implications would be less experienced Registered Nurses (especially bands 6 & 7), who are (arguably) less able to maintain standards and skill mix, support, challenge and lead.

Case C

C1. Case C: Profile in 2017

Case C is a specialist trust with approximately 200 in-patient adult beds. It treats over 50,000 NHS and private patients a year.

C2. Processes to plan, monitor and review nurse staffing

C2.1. Establishment setting

Pre Francis data on patient flow and acuity collected manually were collated electronically before the Matrons of each division prepared and distributed reports to the, Heads of Nursing

These reports, along with professional judgment and budgets were used to inform the nurse establishment and future reviews after contextual discussion between the nursing directorate and ward leaders. These reports were then distributed to the Trust Board annually.

Since December 2017, the planning of nurse establishment was carried out 6 monthly and included analysis and recommendations. Key to the decision-making process was professional judgment and two-way conversations between the Transformational Nurse Lead, Heads of Nursing, Clinical Site Practitioners and ward leaders. A key change was the number of multidisciplinary members increasing to include finance and HR to be actively involved in these discussions. Other differences included electronic roster data, electronic acuity and dependency data, patient outcomes, red flag incidents, and temporary staffing data all informing establishment setting.

C2.2 Systems and structures to support safe staffing

Systems used

Case C commenced using an electronic roster for nursing in 2006. Between January 2010 and 2015 Case C used a different electronic roster for agency and bank.

Patient flow of admissions and discharges was collected using an electronic system and quality control of these data was completed by Clinical Site Practitioners in each clinical division. Patient census on acuity and dependency were audited using a manual paper system and uploaded onto the hospital database.

In Sept and Oct 2015 the Trust moved to an updated version of the electronic roster for nursing and at the same time changed the electronic roster for agency and bank to be part of the same updated software package and this new electronic roster for nursing and agency and bank was implemented across the Trust. This process took 3-4 months. In December 2016 a pilot to add to this software package an electronic system based on the SNCT was carried out initially on 4 wards, during implementation there were challenges which delayed total roll out to remainder of the Trust to February 2017.

The electronic system based on the SNCT enabled acuity and dependency to be measured electronically three times daily. Quality control on these tools was undertaken by the Transformational Nurse Lead, and Heads of Nursing.

In January 2018 the SNCT was introduced within the updated version of the electronic roster following from the Trust's earlier involvement in the Association of UK University Hospitals (AUKUH) study and the subsequent development of their own acuity and dependency system led by one divisional nurse director and an IT Department colleague. This system enabled ward staff to collect these data at three points in the day for individual patients alongside other variables (e.g. tumour group, specialty, and surgeon) but lacked the wider integration of the commercially available integrated electronic roster and acuity software. The transition to an integrated electronic roster and electronic system based on the SNCT began with staff training and a 4 ward pilot study on one sites led by the Transformational Nurse Lead and the electronic roster team. The software company offered a full implementation package on purchase, and initial training for the electronic roster team, Transformational Nurse Lead and Sisters/Matrons from pilot wards. Training for other clinical areas was led by Transformational Nurse Lead for all band 6's and 7's. Ongoing monthly training for electronic rostering was open to all band 6's and 7's and led by a band 4 for the whole day and included a session on rostering led by the Transformational Nurse Lead.

Online resources about rostering were available for all nursing staff on the Trust intranet.

Quality assurance of this data was carried out by the Transformation Nurse Lead and the electronic roster team. The Transformational Nurse Lead created a monthly report on the SNCT data.

Roster review meetings were led by the electronic roster team and rosters were reviewed from the previous month during a monthly meeting with the Matron, ward leads, HR business partner and finance.

Registered Nurses' views of tools and technology

Registered Nurses had mixed views about the growing use of tools and technologies in safe staffing. Before the development of recent safe staffing strategies, nurse managers recalled rostering on paper based on staff per bed ratios alongside professional judgement. Recent developments in tools and technology were now enabling Registered Nurses to describe and evidence (quantitatively and qualitatively) their workload and staffing across the whole hospital and, as one nurse manager put it, this is particularly important in bridging the gap between health care professionals and managers towards better collaboration and the best outcomes (C2 interview – p3). Registered Nurses agreed that the linkages now made by electronic systems between staffing, patient care and financial budgets was a major breakthrough, though pressures to make staffing cost savings remained ever present.

Registered Nurses' views of tools and technology largely focused on the Trust's electronic rostering system and the electronic system based on the SNCT, though other software (e.g. incident reporting software) were also important for monitoring staffing and raising issues. For the electronic system based on the SNCT it remained early days and nurse managers commented that they were still getting to grips with their first full quarter of SNCT data and its implications for safe staffing. This included treating these data with caution, for example safe staffing related data were usually labelled as 'draft' in all reports to the Chief Nurse, but these systems were already making the rosters more visible to all staff thus making it easier and potentially quicker to detect problems on shifts.

Registered Nurses recognised that the move to electronic rostering was a significant development though it was characterised by early 'teething problems' (e.g. errors in hours, day-night shift allocation) since solved by its developers. One nurse manager particularly liked the ability to automatically roster where "...you can push a button, go away, and it's going to create the bulk of your roster for you, then you come back and make changes for what you need" (C3 interview – p4). However she remained concerned that so few ward Sisters used this functionality and this was an ongoing focus for her training and support work. That said, she also warned that it could create unrealistic 'push button' expectations and the early problems with electronic rostering meant that some staff remained suspicious.

Registered Nurses agreed that these developments were creating safe staffing data that was better than ever before, but they also questioned whether tools and technology were yet benefitting patients and staff by raising the following concerns. There was widespread recognition that it was still early days in the development of safe staffing tools and technologies and nurse managers recognised that completing the electronic roster and the electronic system based on the SNCT put considerable pressure on ward Registered Nurses when ultimately they want them caring for the patients. But they hoped that staff were beginning to see the benefits of completion via improved staffing levels and that staff 'buy-in' was improving. This was helped by increasing numbers of electronic tablets for Clinical Site Practitioners and ward Sisters, though many still didn't have them, alongside work to agree policies and processes for safe staffing using the electronic roster and electronic system based on the SNCT, particularly for managing out of hours shifts.

The danger that completion becomes another 'tick box exercise' was ever present and though most wards were reasonably compliant in completing their data entry, one nurse manager commented that some were better than others and compliance often dropped when ward Sisters were on leave. The Transformational Nurse Lead also worked as a Clinical Site Practitioner when the hospital was short staffed but she used this as an opportunity to bring her tablet to the wards and work with Registered Nurses on completing the electronic roster and electronic system based on the SNCT data entry with them and thought this one-to-one support had helped improve compliance (C3 interview – p2).

For nurse managers' one critical aspect to staff buy in were correlations between the tools and the Registered Nurses' experience on the wards, reinforced at the end of each month with outputs that reflected what actually happened. For example one described how during the first quarter of the electronic system based on the SNCT implementation it quickly became apparent that some wards were using a model of care that assumed weekends were quieter because Case C has no A&E (C2 interview – p3). But the data showed that the patient profile had changed such that acuity remains consistent over

7 days or sometimes (depending on critical care admissions & type of ward) increases at the weekend, therefore the model of care was changing to reflect this very different evidence. In this way electronic roster and SNCT data had clarified what was actually happening on the wards and supported the business case for additional staffing there. Another nurse manager agreed that the new electronic roster and electronic roster based on the SNCT had produced new ways of looking at rosters that Case C has never had before. She described wards with their normal number of experienced Registered Nurses working that day who might tell her 'they're busy' and she would usually think 'they'll be fine' and instead focus on another ward missing a couple of Registered Nurses (C3 interview – p3). But thanks to electronic roster and electronic system based on the SNCT she reflected that the fully staffed would now be given priority.

Expansion of electronic roster team

The electronic roster team was set up in 2008 under nursing oversight and in approximately 2010/11 it was moved to be under the management of HR. The electronic roster team included band 8a roster manager (this role was introduced in 2015 and this person is responsible for the management of both temporary staffing team and the electronic roster team. Band 6 electronic rostering manager, band 6 senior rostering administrator and two band 4 rostering administrators. Supporting the team from a clinical perspective is a band 8a clinical lead for rostering. In November 2017 a data analyst was employed by HR to pull data.

C2.3 Daily review of staffing levels and responding to shortfalls

Daily planning, reviewing and monitoring

Before Francis, wards escalated safe staffing concerns to the relevant ward's Matron or divisions' lead nurse, and out of hours a Clinical Site Practitioner, bleep holder. Accountability remained with each separate division who largely self-managed their staffing with daily staffing meetings.

Post Francis, staffing levels were proactively reviewed daily. The escalation process started with the nurse in charge identifying staffing or potential staffing shortages, before calling a "huddle" to identify concerns and actions already taken. The order of escalation in which concerns were highlighted was as follows: In hours - Matron/Clinical Site Practitioner, divisional nurse director, Chief Nurse; out of hours - Clinical Site Practitioner, senior Registered Nurse on call, Chief Nurse.

The staffing review took into account skill mix, patient acuity, dependency, staffing numbers, staff on 'non-clinical' duties, review of the roster to see if staff could be swapped around and adjusting of staffing across the site. Actions taken were to ensure shifts out to agency, to review bed allocation and to reduce capacity to mitigate risk.

Relations with colleagues and managers were key to safe staffing. When asked who they would turn to if they needed help with safe staffing, Registered Nurses usually identified their colleagues and the next person in their operational hierarchy and/or the Chief Nurse, Chief Operating Officer, Directors of Nursing and the Transformational Nurse Lead, the latter being the recognised lead for safe staffing. Registered Nurses also relied on their colleagues for advice and support and generally felt supported by them in making safe staffing decisions. The role of the Transformational Lead Nurse was important, particularly in leading the development of electronic roster and the electronic system based on the SNCT and in monitoring safe staffing on a daily basis. For example in response to the daily predicted safe staffing report produced, the Chief Nurse would sometimes visit wards to check that things were okay and such visits helped to convince staff of the importance of safe staffing (C3 interview – p5). The Transformational Lead Nurse's role also included working with Matrons, ward staff and others in a safe staffing training and support role. Before this, safe staffing was largely associated with research, and making this transition into daily practice had been key to safe staffing implementation across Case C (C1 interview – p5). In the Nursing, Risk and Quality Directorate the lead managers for quality assurance and patient safety also both had nursing backgrounds which helped keep safe staffing on the agenda.

In order to monitor safety, "red flags" according to the NICE 2014 definitions (50), were recorded, usually by the nurse in charge of the shift or Clinical Site Practitioner/Matron when they occurred. Red flag collection commenced in April 2016. They were recorded in the incident reporting system and reported through that. If the incident was deemed a red flag for staffing; i.e. Registered Nurse shortfall of more than 8 hours or 25%, or one Registered Nurse on shift; other contributing factors would be taken into account such as workload, patient complexity, skill level of staff, skill mix, patient care missed or missed breaks. Case C is also considering including missing skills to the red flags.

Red, Amber, Green (RAG) was used when sending out the report twice daily with the operational oversite of the hospital which included bed state/ admissions/discharges/delays / operational issues/ staffing oversite. Red being an indication of

unsafe staffing and green being an indicator of sufficient staff levels attained from staffing data recorded on the integrated electronic system.

Care Hours Per Patient Day (CHPPD) were calculated via the electronic system based on the SNCT from the information added by staff when they updated patient acuity. This was reported monthly to the Board.

Short term response to staff shortfall

Short term response – internal escalation: The first response was to review and escalate the problem internally within wards and wider division/directorate. This escalation policy had recently been introduced but in the first instance it might also involve contacting the Matron, Clinical Site Practitioner or senior nurse in charge (out of hours) if necessary. Nurse managers expected their staff to have reviewed whether they could manage by themselves using the strategies outlined above, typical internal responses including:

- Working harder, missing breaks, staying on later
- Moving shifts and staff around
- Moving patients to less acute areas
- Funding an extra shift

Consideration would also be given to factors including the admissions and discharges for the ward(s) that day, internal staff capacity, capability and skill mix and the availability of internal support from non-rostered staff (e.g. supernumerary new starters, students).

Short term response – external escalation: Where staff are unable to resolve unsafe staffing internally, the next step involved escalation beyond their own ward and wider division/directorate to the whole hospital and, where necessary, to bank and agency. Again, Registered Nurses stressed that their many strategies sought to prevent wider escalation or make plans for it as early as possible but these responses were now an everyday occurrence. Wider escalation policies were still being developed but began by contacting the Matron, Clinical Site Practitioner or senior nurse in charge (out of hours) to explain situation and the internal review before considering the situation across the whole hospital and wider options to restore the safe staffing balance.

The first option involved moving staff from better staffed (amber/green) wards in other divisions/directorates, though staff vacancies meant there were fewer better staffed areas. The second option involved requests for the authorisation of staff from bank and/or agency via senior nurse managers (e.g. divisional nurse directors, Chief Nurse) during week days and via the senior nurse in charge out of hours. Shifts were normally cascaded to the bank or agencies in line with the agency framework of the hospital area.

Short term response – temporary closure of beds: As a last resort when other options hadn't worked Case C had temporarily closed beds due to staff shortages during the last two years. Such action required the approval of senior managers (e.g. divisional nurse director, senior nurse on duty (out of hours)) and involved planning for knock on effects (e.g. theatre cancellation, transfer of patients, implications for critical care). However nurse managers stressed this was a rare occurrence for many reasons, including the impacts on the Trust's specialist waiting lists.

Long term response to staff shortfall

The long-term responses Post Francis included an ongoing electronic, functional and integrated, monitoring and review process with daily site wide staffing review meetings. Pre and Post Francis responses comprised establishment setting and effective rostering at ward level taking into account contextual factors such as patient flow, ward layout and skill mix. Both short and long-term responses before and after Francis included professional judgement from all Registered Nurses involved in the decision making process.

C2.4 Reporting nurse staffing levels - internally and externally

Ward to Board reporting

- Trust level reporting: 6 monthly staffing establishment reports presented to Board and monthly reports on staffing to Board (submitting data on planned vs actual nurse staffing numbers, fill rates, CHPPD and red flags). Data for this was prepared by the Transformational Nurse Lead and the electronic roster team. Quarterly governance reports were also prepared, including staffing and performance.
- Nurse staffing data made public
- Externally Case C published planned versus actual nurse staffing numbers daily at ward level and monthly published planned versus actual nurse staffing numbers, fill rates and CHPPD to the Case C website for public and patients and the national data repository collated and prepared electronically by the Transformational Nurse Lead.

Registered Nurses thought Case C was becoming more transparent with patients, families and carers about all their work and this was a good thing, but much more was needed here. Registered Nurses were asked how they were informing patients and their families/carers about safe nurse staffing and most described the boards at ward entrances that are designated red, amber or green. A paper based staffing information sheet was also in operation and posted outside each ward with the planned and actual numbers of Registered Nurses on shift, the nurse in charge and the RAG rating.

Balancing the need to be open with patients about staffing levels against not worrying them unnecessarily was a recurring theme. One nurse manager had heard anecdotally that the RAG boards were unpopular with ward sisters because they can alarm people:

> *"oh God it's red and my relative is being cared for on a red day, how bad is it gonna be, are they at risk of bad practice and stuff?" (C1 imitating patient response in interview – p8).*

Behind this crude visual indicator one nurse manager emphasised that the many strategies summarised above were underway such that a red ward doesn't mean that patients are at risk of unsafe care (C1 interview – p8).

External Networks

All Registered Nurses recognised the importance of the Care Quality Commission (CQC) as an external regulator of their work but they had mixed views about the impact on safe staffing at Case C. It ensured transparency and helped set standards for staffing (e.g. reporting) and make improvements, but one nurse manager reflected that the CQC's work (including last year's inspection) was more a contributing factor to safe staffing rather than a driver (C1 interview – p5). Others thought the CQC should also focus more on areas not yet covered by national safe staffing policy (e.g. paediatrics, outpatients) and the local context, particularly the inherently unstable nursing workforce and the reasons for this (e.g. high cost of living).

In terms of external networks, two nurse managers constantly worked with the three other Trusts involved in two safe staffing research projects and they considered this involvement an important driver of organisational safe staffing improvements. Beyond the technical advantages regarding systems, tools and technologies, they also benefited from the opportunities to share knowledge, experience and advice with study colleagues in similar situations. One nurse manager was also four years into a PhD that included research into the development of safe staffing tools and technology.

C2.5 Indicators

Assuming there were no obvious crises, the first indicators of a safe ward was whether they met their establishment criteria across all shifts. The second indicators focused on whether patient and staff needs were being met and were informed by data from the sources outlined above, particularly evidence of no harm being caused (e.g. no red flags) and that staff and patients were safe and their needs met (e.g. medicines given on time, no reports of incidents or errors). Red flags were recorded on an incident reporting system when a staffing incident was deemed unsafe as per NICE (2014) (50) guidance i.e. Registered Nurse shortfall of more than 8 hours or 25%, or one Registered Nurse on shift.

Data from the electronic system based on the SNCT was collected three times a day and increasingly informed the daily safe staffing reports and planning for the following day, particularly by providing evidence of shortfalls in staff and hours. It was early days, but staff planned to use the tool more proactively and in real time in the future. Professional judgement remained vital, Registered Nurses often describing the importance of 'the feel of the wards' as an indicator of safety.

C2.6 Overview of changes to approaches to nurse staffing

Box C1: Key changes in recent years to achieving safe-staffing include:

- Collecting electronic AUKUH patient acuity and dependency data in real time thrice daily informing daily staffing shortage decisions
- Putting nurse staffing on the Board agenda every month
- Electronic roster team submitting electronic data on planned versus actual nursing numbers (fill rates) and CHPPD to a national repository
- Expansion of the electronic roster team: band 8a roster manager role introduced in 2015 responsible for the management of both temporary staffing team and the electronic roster team. In Nov 2017 a data analyst was employed by HR to pull data.
- Publishing planned versus actual nursing numbers monthly on the Trust website
- Publishing daily staffing planned versus actual levels at ward level
- Recording since April 2016 red flag incidents as defined by NICE 2014 guidance on the Trust incident reporting system
- Implementing a 6 monthly full nurse establishment review which informs budget setting
- Chief nurse taking oversight in the escalation of safe staffing in hours and out of hours
- International recruitment commencing in 2016 due to the Trust being unable to recruit to establishment

C3. Recruitment & retention

Efforts to recruit and retain nursing staff were also critical to preventing unsafe staffing and the Trust's 15% vacancy rate for its urban hospital meant that they were constantly recruiting staff, though the workforce in its rural hospital was more stable with few recruitment and retention problems. Two Registered Nurses reflected that as a specialist hospital Case C was in their experience much better staffed than district general hospital wards, but equally it was much harder to get temporary and permanent staff with the specialist expertise required (e.g. cannulas, IV lines), particularly for night shifts (18th Sept workshop – p1). Current activities were operating on three different levels. Within Case C a Registered Nurse lead for recruitment had recently been appointed and the Chief Nurse was meeting weekly to review the recruitment and retention situation. A wide range of local and national recruitment strategies were ongoing and included rolling media adverts, open days and recruitment fayres that involved nursing staff from across the hospital. In response to local and UK nurse shortages, international recruitment was also increasing and mainly targeting the Philippines. The international recruitment commenced in 2016 as the Trust were unable to recruit to posts. Case C was also experimenting with recruitment incentives, for example offering a £2000 golden hello for a band 5 Nurse post.

Retention activities at Case C included internal transfer opportunities for band 5 Registered Nurses who have been in post 12 months and wish to develop skills in other areas. There is also work supporting nursing support staff in the Trust who are

Registered Nurses in their own countries to obtain UK registration. There are senior Registered Nurse/Sister development programmes and a piloting nursing associate programme – open to existing Trust band 3 nursing support staff. Case C has its own school of nursing to support staff in developing specialist qualifications. And well-being activities/staff support is available for all staff. Finally the Trust works with two local universities and has become a 'base hospital' for those students wishing for specialist electives.

For their profession, Registered Nurses recognised that the nursing workforce was changing quickly with an emphasis on more specialist roles in the younger generations of Registered Nurses and one nurse manager reflected that the implications of these changes for safe staffing (e.g. less general experience) needed to be thought through (C1 interview – p8). Nurse managers also welcomed the expansion of nursing support staff roles and more pathways to registration, but one manager recognised the bad press Registered Nurses received and the financial pressures they remained under. Therefore he thought there was a need to get 'back to basics' by recognising that people go into the profession to care for people and they can't do that without the right staffing (C2 interview – p9).

Other concerns

Case C has a reputation for the high standard of quality care that was important to maintain but it could sometimes also create unsafe conditions for patients and staff. For example two Registered Nurses described Case C as a 'victim of its own success' such that their patients would rather sit at home unwell than attend their local A&E because "they're scared and don't want to go anywhere else", even though Case C might not be able to treat illness unrelated to their specialist condition (18th Sept workshop – p1). In such circumstances patients sometimes 'stagger in' to the Trust's clinical assessment unit and refuse to be treated elsewhere or rely on the Trust's other resources (e.g. dedicated patient hotline) such that staff are further stretched (18th Sept workshop – p1). Further, the two Registered Nurses thought these problems were exacerbated by a tendency for clinics to be overbooked (e.g. 58 patients at 30 patient clinic is common) and the relatively small numbers of beds at Case C, such that its private ward was currently admitting NHS patients.

One Clinical Site Practitioner involved in coordinating huddles commented that wards frequently say 'we are one nurse short, but we will manage'. She knew they would manage but explained that 'just managing' was now common (though it could be exploited – see **Table 1** below) because there were no spare Registered Nurses to send to wards in need (18th Sept. workshop – p3). In such situations the two workshop Registered Nurses feared that staff shortages undermined safe staffing:

> *"If we just have to get on, then this is just a pointless exercise"*
> *(18th Sept. workshop – p3)*

In response both agreed that a handful of experienced and flexible pool Registered Nurses could improve safe staffing at Case C.

There were also tensions during the implementation process. The pressures on Registered Nurses to work harder for longer were contributing to wider problems of staff sickness and retention. Registered Nurses were hopeful that safe staffing strategies would help reduce these problems in time, but in the mean time they feared the cost of this unsustainable situation. The constant transfer of staff from 'better' staffed wards to others was another source of tension. Registered Nurses were committed to the need for a 'whole hospital' approach to safe staffing, but this required staff to be honest about what was happening in their wards and some considered it unfair when staff were transferred from one poorly recruited (amber/red) ward to another. Further, one Registered nurse manager commented that some staff simply didn't like moving wards whilst the use of temporary staffing was also causing tensions. Nurse recognised that bank and agency staff were vital, but specialist temporary staff were sometimes unavailable whilst their use in backfilling gaps could create new problems, particularly with skill mix.

To explore broader issues in safe staffing, Registered Nurses were asked to identify the greatest challenges in getting the right people with the right skills in the right place at the right time and these are summarised in **Table 1** below and were frequently interlinked. To build on **Table 1** for the future, nurse managers were also asked what would happen to nurse staffing in the next five years. All agreed that things would probably get worse before they improved. They welcomed the investments Trusts were now making in staffing, the opportunity for more proactive safe staffing strategies, improvements in tools and technologies (e.g. real time use in all areas) and wider developments to the workforce (e.g. nursing support staff, specialist Registered Nurses). But nurse managers also feared these could be undermined by ongoing shortages and future cuts to front line nurse staffing (the largest workforce) to save money, one expressing concern about another Mid Staffs in the future (C1 interview – p9).

Table C1 : Greatest safe staffing challenges in Case C

Challenge	Main issues for Registered Nurses
Shortages of Registered Nurses	→ Managing vacancies was an ongoing struggle, particularly at urban hospital site. → "...we're using our workforce as efficiently as we can and then it's a challenge with the shifts and things outstanding that you can't cover because everyone is already working or on leave or whatever" (C3 interview – p6).
Patient needs & high expectations	→ As a specialist hospital many Case C patients had complex needs. → Some Registered Nurses felt guilty that the challenges in Table 1 meant they couldn't give their patients the care they needed. → Case C has a reputation that led to high expectations from all patients, particularly private ones, and this put further pressure on staff. → Registered Nurses thought some Case C patients should be treated in their local hospitals, but they knew why they were reluctant to do this.
Local conditions – two different sites & limited beds	→ Urban hospital site – younger staff, higher turnover (particularly international Registered Nurses), impacted by high cost of living and lack of affordable housing nearby. → Rural hospital site – older, more local and stable workforce, but some services there (e.g. children) also outside current scope of safe staffing. → As a specialist hospital
Recruitment & retention	→ Many activities (see above) but Case C workforce remains unstable, especially at urban site, due to challenges summarised here. → The cap on nurse pay was mentioned, but the priority for Registered Nurses concerned the safety and quality of the care they provided.
Registered Nurses tired & frustrated	→ Registered Nurses and managers were concerned that covering vacancies by missing breaks, staying late (etc.) was making them tired and sick, with knock on effects (e.g. retention). → "I feel sorry for the patients, I became a nurse 30 years ago to look after people, now I feel like I'm in Waitrose, bleep, bleep, we don't have enough time" (18th Sept workshop – p2)
Registered Nurses reluctant to 'challenge' safe staffing decision making	→ Some wards occasionally described themselves as 'just about managing' as a tactic to avoid losing their staff.
Student Nurses	→ Impacts of recent withdrawal of University training bursaries in England.
High turnover of ward staff, impacts on experience, skill mix, leadership	→ Factors included local conditions at urban site (see above), the impacts of shortages, different career pathways (e.g. specialisation), increasing loss of experience due to retirement. → Implications = less experienced Registered Nurses (esp. bands 5, 6 & 7), who (arguably) less able to maintain standards and skill mix, support, challenge and lead.
Bank and agency staff	→ Vital to maintaining nurse staffing on wards, but sometimes shortages due to lack of staff with specialist skills needed.
EU & international Registered Nurses	→ Brexit not happened yet, but Registered Nurses feared its consequences (e.g. changes in immigration status) as large numbers at Case C, particularly urban site. → International Registered Nurses failing IELTS examinations.

Challenge	Main issues for Registered Nurses
Changing nursing workforce – at all levels	→ Workforce changes broadly welcomed, including development of nursing support staff roles, more pathways to registration (e.g. apprenticeships) and opportunities for specialisation. → But fear also about the impacts of these developments on stretched workforce.
Ward layout	→ Some wards presented challenges to safe staffing e.g. side rooms and different floor levels

Case D

D1. Case D: Profile in spring 2017

Case D is an NHS hospital trust with over 1000 beds. It serves a population living in a city and the wider region of approximately 675,000.

D2. Processes to plan, monitor and review nurse staffing

D2.1 Establishment setting

Pre-Francis data from patient flow of admissions and discharges and patient census on acuity and dependency along with professional judgment were used to inform the nurse establishment. The Association of UK University Hospitals (AUKUH) system was used to measure acuity and dependency, audits were carried out yearly for 3 weeks by ward leaders (band 7's) from each ward. Discussion took place between the nursing directorate and ward leaders in order to obtain context i.e. ward layout and skill mix. The Lead Nurse for Workforce created electronic reports on these data and professional judgments and distributed to Case D board bi-annually. At board level budget setting also informed or overrode decisions around nurse staffing establishment depending on constraints.

Post Francis the planning of nurse establishment occurred 6 monthly including analysis, benchmarking and recommendations. Key to the decision-making process was professional judgment and two-way conversations between the Lead Nurse for Workforce, Heads of Nursing, Matrons and ward leaders as well as the wider multidisciplinary team such as HR and finance. Safer Nursing Care Tool (SNCT) data, electronic roster data, temporary staffing data, red flag incidents, benchmarking and professional judgment all informed establishment setting. Data were collated and prepared electronically by the workforce data analyst and the report was put together by the Lead Nurse for Workforce and Workforce Research Sister. The report on the full establishment review was taken bi-annually to board level, here the establishment review informed budget setting and HR management as well as vice versa.

D2.2 Systems and structures to support safe staffing

Systems used
Between 2007 and 2008 Case D introduced electronic roster system with software A then in 2012 software B was added to work alongside it as a verifying audit system. Band 7 ward leaders inputted the data into the system which monitored substantive nurse staffing shifts and temporary nurse staffing shifts.

Post Francis the electronic roster system remained unchanged. Though future plans included linking in real-time NH Professionals data. Since February 2017 the patient census acuity and dependency technology changed to include the SNCT and was integrated into the electronic patient bed management system [the IT project team developed the SNCT for Case D and a band 7 Workforce Research Sister led the implementation]. This enabled acuity and dependency to be monitored electronically twice daily. Roster data were inputted into these tools by band 7 ward leaders and acuity and dependency data were inputted by the nurse in charge of the shift (band 5,6, or 7). Quality control on these tools was undertaken by the Workforce Research Sister, Matrons and Heads of Nursing.

Registered Nurses' views of tools and technology
Registered Nurses had mixed views about the growing use of tools and technologies in safe staffing. Before the development of recent safe staffing strategies, nurse managers recalled paper based rostering based on expert opinion in a different context characterised, in their view, by more plentiful staff, patients with fewer needs and less financial pressures. Recent developments in tools and technology were now enabling Registered Nurses to better capture activity across the whole hospital. As one nurse manager put it, having quantitative data and the qualitative 'conversation' behind it was informing staffing discussions and changing attitudes from "it's really busy, we can't manage" to ones that challenged events (e.g. "is this reasonable, do you think this is justified?") and better supported staffing decision making (D3 interview – p5). Thus nurse managers agreed that tool and technology provided a truer reflection of what was actually happening on their wards to inform and support staffing decision making and maintain the right balance between quality, safety and finance.

Registered Nurses' views of tools and technology largely focused on the Trust's electronic rostering system and the electronic system based on the SNCT, though other software (e.g. incident reporting system and safety thermometer data (a data collection system to monitor patient health outcomes)) were also important for monitoring and raising issues. From the very start nurse managers reflected that the initial implementation of the electronic system based on the SNCT had been 'relatively straightforward', helped in part by their involvement in past software development research and the way that the software complemented existing practices (e.g. ensuring right patients in right beds, documenting handovers).

The development of the electronic system based on the SNCT followed from the Trust's earlier involvement in the AUKUH study that measured patient need at 3'o'clock in the afternoon, Monday to Friday for two weeks, twice a year, a snapshot that some Registered Nurses considered pointless at the time (D1 interview – p3). In contrast, the new electronic system based on the SNCT was rolled out from February 2017 for completion twice per day seven days a week and across all shifts and nurse managers particularly valued its potential for recording complex patient and resource needs (e.g. new Care Hours Per Patient Day (CHPPD) data), particularly for patients requiring specialist care. Other tools and technologies (e.g. incident reporting system) informed this baseline, but together nurse managers valued how they were creating a 'whole picture' of patients and wards to inform staffing decision making locally and hospital wide. Other Registered Nurses agreed that these developments were creating safe staffing data that was better than ever before, but they also questioned whether tools and technology were yet benefitting patients and staff by raising the following concerns.

There was widespread recognition that it was still early days in the development of safe staffing tools and technologies but Registered Nurses described various problems in their use. Nurse managers recognised that completing the electronic system based on the SNCT put considerable pressure on ward Registered Nurses when ultimately they want them caring for the patients, but they hoped that staff were beginning to see the benefits of completion via improved staffing levels and that staff 'buy-in' was improving. However some Registered Nurses remained unconvinced because they hadn't the time available. Registered Nurses repeatedly explained that they might not get near a computer all day, let alone have time to make data entries or send emails. This was also affecting areas like discharge planning, where discharge teams were writing records on the electronic system based on the SNCT but not speaking to staff who then missed the electronic record. Registered Nurses were well aware of the importance of electronic records for many reasons, but one nurse likened the time taken for data entry as a 'hidden cost' of safe staffing. Some ward managers were also not engaging with the electronic system based on the SNCT, including incomplete and unchecked data and an unwillingness to use this data to challenge Matrons about staffing levels. One nurse manager was unsure why, but she suspected they had concerns about the confidentiality and reliability of the electronic system based on the SNCT and some Registered Nurses expressed concerned that their ward managers were not well supported.

Another concern was that in contrast to their managers above, some Registered Nurses didn't think that the acuity and dependency data based on the SNCT yet captured ward activity, particularly when patients might be out of specialty and have greater nursing needs (e.g. spinal injury patient with bowel and blood pressure problems). Some Registered Nurses questioned whether these issues were leading staff to deliberately overstate patient acuity and dependency, but others explained their ongoing work with the IT Department and others (e.g. quality assurance) to improve the electronic system based on the SNCT. Early improvements included listing patients in bed order (rather than alphabetical order), but Registered Nurses were currently working on developing better 'comment' spaces to capture professional judgements.

In the electronic roster other problems remained, including that some systems don't talk to others. For example Case D was having problems booking bank shifts since NHS Professional's new system had been rolled out, such that once a shift had started that person couldn't be transferred until their timesheet had been authorised and this was causing delays in payment for bank staff. Unlike other systems, the transfers at Case D couldn't be made using the electronic roster and improvements were further delayed by the limited availability of software on which the systems were developed to run.

More broadly, there was widespread recognition that safe staffing tools and technology were still used in a largely reactive way (e.g. collect and review monthly acuity and dependency data and review establishment) and were distant from daily decision making. Nurse managers aspired to a "live figure", monitored by a senior nurse on duty 24 hours a day, to indicate whether a ward is running hot or cold (in acuity/dependency terms) thus enabling them to move resources to where they are needed. Informed by experiences with electronic systems in other services, Registered Nurses also aspired to future systems that made it easy to transfer information between hospitals and others (e.g. GP, social services). However, other Registered Nurses were not convinced this would happen due to the lack of a strong learning culture at Case D. They knew improvements were being made but the collaboration wasn't yet there and this was partly a problem of resources, particularly the lack of time available to collect evidence and share good practice.

Supervisory ward leader model
Case D has always had a system of supervisory 'management time' forward leaders. However due to staffing levels, staff were getting less of it. For example, if a ward was understaffed by more than two Registered Nurses, the first remedy would be to pull management time. Now previous 'management time' has been taken over by the supervisory nurse leader model as recommended in the Francis report and the NQB expectations (10,43). It changes the way shifts appear on the electronic roster rather than being a complete change in practice at ward level.

D2.3 Daily review of staffing levels and responding to shortfalls

Daily planning, reviewing and monitoring
Pre-Francis safe staffing management 'in hours', to deal with fluctuations in patient flow and census, was chaired by a lead Matron Monday to Friday, duty Matron 4pm-8pm and hospital at night 'out of hours' with a manual communication system. Accountability remained with each separate division who largely self-managed their staffing with daily staffing meetings.

Post Francis the safe staffing escalation processes in hours changed to include Nurse Director cover and bleep cover (in place of lead Matron) Monday to Friday 7.30am to 4pm. Hospital at night changed to use a real time electronic communication system. Relations with colleagues and managers were key to safe staffing. When asked who they would turn to if they needed help with safe staffing, Registered Nurses generally identified the next person in their operational hierarchy, the Lead Nurse for Workforce or the duty Matron (out of hours).

Daily safe staffing meetings were held on site with all divisions and provided constant oversight and review of staff planning for following shifts, attended by Heads of Nursing, Matrons, Duty Managers and others (e.g. discharge team). Agendas included monitoring demand (through front and back doors) and responding to problems (e.g. increased demand, short notice leave, staff sickness, discharge planning). Electronic roster, SNCT (red flags), safety thermometer and incident reporting data were used to inform strategies, particularly establishment, but SNCT data rarely used 'on the day'. Complications afforded to SNCT data included some wards describing themselves as 'too busy' and a feeling that few Matrons will challenge acuity data.

Daily RAG (Red/Amber/Green) review meetings provided continuous review of staffing on every ward and for all shifts (day/evening/night) to control temporary demand and maintain safety – chaired by divisional head of nursing and formed the basis for short term responses (e.g. moving staff around, agency requests etc.). In RAG for staffing Red constitutes for most wards 2 Registered Nurses under, or for smaller wards or night shifts one Registered Nurse under. Amber constitutes enhanced care observation patients, fewer care assistants and one Registered Nurse under if red is two Registered Nurses under. Green indicates a suitably staffed ward.

Thursday meetings were held with Lead Nurse for Workforce and others (Heads of Nursing, Matrons and ward leaders) to plan weekends and identify potential hotspots.

Monthly divisional performance meeting attended by Heads of Nursing, HR and others, always included review of staffing and wider issues and concerns.

Short term response to staff shortfalls
Short term response – internal escalation: The short-term internal responses were similar before and after Francis and included funding additional shifts i.e. over-time, requesting temporary staffing cover and temporary closure of beds. Consideration would also be given to factors including the elective take and discharge rate for the ward(s) that day, internal staff capacity, capability and skill mix and the availability of internal support from non-rostered staff (e.g. supernumerary new starters, students).

Short term response – external escalation: Where staff were unable to resolve unsafe staffing internally, the next step involved escalation beyond their own ward/division to the whole hospital and, where necessary, beyond to bank and agency. Again, Registered Nurses stressed that their many strategies sought to prevent wider escalation or make plans for it as early as possible but they admitted these responses were now an everyday occurrence. Wider escalation began by contacting the duty Matron/manager (out of hours) to explain situation and the internal review before considering the situation across the whole hospital picture and wider options to restore the safe staffing balance. The first option illustrated the 'whole hospital' approach to safe staffing and involved transferring staff from green areas in different divisions to amber/red areas. Staff vacancies meant there were fewer green areas, but divisions with lower vacancies were expected to move staff to higher vacancy areas for a certain amount of time, though such transfers were becoming an increasing source of tension between

Registered Nurses. Registered Nurses recognised the importance of trust and working as a 'whole hospital' but some considered it unfair when every day their plans were 'scuppered' and 'Peter was robbed to save Paul' (Phase 1 workshop p8). Registered Nurses feared that regularly transferred staff might walk.

The second option involved requests for the authorisation of staff from NHS Professionals bank and/or agency via senior nurse managers (e.g. Deputy Director of Nursing/duty Matron - out of hours). Shifts were normally cascaded to the bank and cheaper agencies first, until the shift vacancy becomes critical. Tier 3 high cost agencies, were considered a last resort by Registered Nurses but they admitted they were calling on their services constantly (D2 interview – p6). Registered Nurses observed that the temporary bank and agency staff often used to fill the gaps were being poorly treated and their use was not sustainable for the longer term because the core ward staff were so inexperienced (Phase 1 workshop p7). Agency use also impacted on ward budgets, some Registered Nurses feeling punished when their staff were transferred to other divisions but they were not paid for this, one nurse likening all these problems to the "vicious circle" of agency use (Phase 1 workshop p9).

Short term response - temporary closure of beds: When other responses had not worked, one division had recently resorted to the temporary closure of beds on one ward in response to the safe staffing concerns of one nurse manager:

> *"...on an elective ward recently we didn't have the staffing numbers and they cancelled the elective work. I said it wasn't safe so my Clinical Director and my Chief of Service supported me and we cancelled electives that day, it's a couple of times we've had to do it. We were three trained down and there's no way that was safe to carry on operating, so I do have the support. It's a decision I wouldn't take lightly, we're lucky I've got an elective ward I can do that with, other divisions haven't got that option have they... .I think we cancelled, well my elective ward is 36 beds, but at the moment we've got trauma on there, so it's 28 beds and I think I cancelled 7 for a couple of days because we had 15 coming into theatre... and it wasn't safe. That was agreed, I discussed it with my Senior Management Team and I said I'm getting to the point and I raised it with performance that if I think it's unsafe I would cancel elective and they supported me" (D4 interview-pp7-8)*

This was the first year in her 40 year nursing career this Head of Nursing had taken such action. Though she felt supported by her managers in making this decision and knew of elective operations that had also recently been cancelled due to shortages of theatre Registered Nurses, D4 also recognised that for many other services such action would not be possible (D4 interview-p8).

Long term response to staff shortfalls

The long-term responses Post Francis included an ongoing electronic, integrated, monitoring and review process with daily site wide staffing review meetings. Pre and Post Francis responses comprised establishment setting and effective rostering at ward level taking into account contextual factors such as patient flow, ward layout and skill mix.

Balanced rosters relied on a link between staffing and financial budget, completed by ward Sisters, approved by Lead Nurse for Workforce and published 6 to 8 weeks in advance, then reviewed 4 weeks later (e.g. to review bank/agency needs). Roster clinics were offered by Lead Nurse for Workforce outside of each division, led by Lead Nurse for Workforce and colleagues to support ward Sisters and Matrons across Case D with rostering and related workforce issues and policies (e.g. escalation, definitions of red flags). There were tensions here with some nursing staff feeling 'on trial' and that the system lacked flexibility around child care and some ward sisters felt undermined by loss of rostering responsibility. Despite this it was acknowledged that the clinics were important as rostering was not yet working optimally, especially in the management of annual leave across the year.

Both short and long-term responses before and after Francis included professional judgement of all the nursing staff involved in the decision-making processes. Professional judgement remained vital, Registered Nurses often describing 'the feel of the wards', particularly how you can sense when things are not right.

D2.4 Reporting nurse staffing levels - internally and externally

Ward to board reporting

Pre-Francis patient flow of admissions and discharges were collated electronically and quality control of these data were completed by Matrons in each clinical division. Patient census on acuity and dependency were audited using AUKUH yearly for 3 weeks by three band 6's and 7's from each ward using paper data collection methods. These data were prepared and collated electronically by the auditors, the reports sent to the Lead Nurse for Workforce for review before dissemination electronically to the wider nursing directorate. Reports on these staffing data were prepared by the Lead Nurse for Workforce for distribution to Case D board bi-annually.

Post Francis the workforce data analyst prepared and distributed reports on CHPPD, planned versus actual nursing numbers and fill rates to the Lead Nurse for Workforce, Heads of Nursing, ward leaders and the National Data Repository monthly. After review by the Lead Nurse for Workforce these reports were sent to board monthly along with a summary of Case D SNCT data as prepared by the Lead Nurse for Workforce, Workforce Research Sister and division Heads of Nursing. Every 3 months the Lead Nurse for Workforce created a more detailed report of the SNCT data (the information service team assisted to pull this data). This data evidenced and informed the nurse establishment planning, this was useful for the board to view in order to understand staffing requirements.

The purpose of this regular reporting to identify nurse staffing trends and hotspots. A 6 monthly report on establishment review was prepared by the Lead Nurse for Workforce for the board.

Nurse staffing data made public

Monthly staffing 'planned versus actual' nurse staff numbers were published for patients and public on Case D website and sent to National Data Repository monthly. Daily 'planned versus actual' nursing staff numbers were published at the ward level.

Registered Nurses thought Case B was becoming more transparent with patients, families and carers about all their work but much more was needed here. Registered Nurses were asked how they were informing patients and their families/carers about safe nurse staffing and most described the 'hot boards' recently installed at ward entrances. These were meant to be updated daily with the planned and actual numbers of Registered Nurses on duty and other information, including the name of the nurse in charge and other quality metrics (e.g. monthly trends in falls, rates of infection). Balancing the need to be open with patients about staffing levels against not worrying them unnecessarily, particularly when staffing is 'challenging', was a recurring theme for Registered Nurses. Further, the perception amongst patients that Registered Nurses were 'always short staffed' was another complicating factor, often compounded by the media, though this was sometimes how they felt. Registered Nurses also thought that they could do much more (e.g. photos of all staff, wearing 'nurse in charge' badge) to communicate staffing to patients and others (e.g. administrators, doctors) but they added that maintaining their professionalism and behaving as if it's all fine, using your 'poker face' as one described it, was becoming increasingly difficult.

External networks

Registered Nurses recognised the importance of the Care Quality Commission (CQC) as an external regulator of their work but they had mixed views about its impacts on safe staffing at Case D. They admitted some recent CQC reviews had been disappointing, but the results also helped make improvements to staffing and other areas that might otherwise not have happened. One nurse manager didn't find the CQC's assessment of their staffing very consistent nor evidence based and was concerned about their tendency to sometimes "throw out" ratios (e.g. 8 patients:1 RN day, 10:1 at night) that suggested they didn't understand acuity and how the SNCT works (D2 interview – p6). However, the greatest concern amongst all Registered Nurses was the knock on effects of CQC enforcement notices.

Following a recent CQC inspection it was agreed that most wards could work at one trained nurse under, but since then one nurse manager reported that vacancies had increased such that some wards were now working two or three trained Registered Nurses under and putting even more pressure on their safe staffing strategies, including short term measures like employing more agency nursing support staff. Further, maintaining compliance with CQC notices stipulating minimum 'green' staffing on certain wards was causing anger and frustration amongst Registered Nurses on other wards who were losing their staff each day. One nurse likened this to a 'them and us' situation, others expressed concern that this undermined patient safety such that in these circumstances they couldn't see the point of the SNCT. They also feared that complaints would increase and the 'damage limitation' response from senior managers could result in a flood of unnecessary initiatives and training instead of a focus on getting the basics right.

The Lead Nurse for Workforce and Workforce Research Sister constantly worked with three trusts involved in two safe staffing related research projects and they considered this involvement an important driver of organisational safe staffing improvements. Beyond the technical advantages regarding systems, tools and technologies, nurse managers also benefited from the opportunities to share knowledge, experience and advice with study colleagues in similar situations. Other Registered Nurses weren't using any external networks to inform their daily safe staffing work.

D2.5 Indicators

Assuming there were no obvious crises, the first indicators of a safe ward was whether they met their establishment criteria across all shifts. Registered Nurses stressed that each ward establishment was informed by many criteria (informed by national and local guidelines, safe staffing data, professional judgement and budget) and subject to review every six months. The subsequent indicators focused on whether patient and staff needs were being met, particularly evidence of no harm being caused (e.g. falls, pressure sores) and that patients were safe and their needs met (e.g. hydrated, not in pain, call bells answered, family/carers not distressed, medicines given on time).

Red flags (as defined in 2014 NICE guidance (50)) were recorded on the electronic system based on the SNCT and the incident reporting system by Registered Nurses at ward level. From June 2016 CHPPD were recorded by ward staff electronically and reported to board monthly. CHPPD was used to benchmark wards against those in other hospitals using 'model hospital' by NHS Improvement. As yet CHPPD does not appear to have a key role in informing decision making, though lead Registered Nurses said it was a useful measure to compare progress in staffing levels with other similar NHS trusts. Data from the SNCT was mainly used on a reactive basis following analysis to inform longer term staff planning strategies, particularly the ward establishment, though staff hoped to use it more proactively in time.

D2.6 Overview of changes to approaches to nurse staffing

Box D1: Key changes in recent years, to achieving safe-staffing include:

- Collecting electronic SNCT acuity & dependency real-time data 2 or 3 times daily.
- Lead nurse for workforce creating monthly report for the board using data from the SNCT, CHPPD, planned vs actual nursing numbers, fill rates and red flags. Enabling trends and hotspots in nurse staffing to be evidenced and therefore actioned upon.
- Lead nurse for workforce creating every 3 months a more detailed report of the SNCT data (the information service team assisting to pull this data). This data evidences and informs the nurse establishment planning, useful for the board to view in order to understand staffing requirements.
- Workforce data analyst submitting CHPPD, fill rates and planned versus actual nursing numbers to a national repository
- Wards publishing planned versus actual nursing numbers daily. Publishing nursing planned versus actual nursing numbers monthly for patients and public on Case D website.
- Undertaking a 6 monthly full nurse establishment review informed by budget setting and functional integrated electronic staffing and patient data.
- Benchmarking CHPPD in contrast to other hospitals using 'model hospital' provided by NHS Improvement prompted by Lord Carter's work and 2016 NQB policy (63,65)
- Implementing lead nurse director cover 'in hours' where there used to be just Matron cover on the safe staffing escalation plan.
- Holding daily safe staffing meetings on site with all divisions rather than in separate divisions.
- Operating a real time electronic communication system over night as opposed to a manual paper and telephone version.

D3. Recruitment & retention

International recruitment

EU recruitment started several years ago and was introduced to try to resolve a severe nursing shortage due to an inability to recruit nationally. The numbers recruited reduced from 131 in 2015 to 53 in 2017 after the NMC in 2015 introduced IELTS (International English Language Test) as a requirement of issuing EU Registered Nurses with a pin to allow them to work as a registered nurse in the UK. Recruitment numbers reduced further following the Brexit vote and insecurity of EU Registered Nurses this created

This prompted the first international recruitment trip in March 2016 to the Philippines and then India and this now occurs bi-monthly swapping between the 2 countries with occasional EU trips alongside. Non-EU international recruits increased from 0 in 2015 to 22 in 2017. There has also been a move towards skype interviews in between trips to increase recruitment and these now occur at least weekly

Job descriptors

In contrast to 2010 nurse job descriptors in 2014 showed the band 7 Sister took a lead role in the recruitment and retention of the ward team. In 2017 this role was extended to the band 6's and the Matron linked to the ward. In 2017 the job descriptor added roles for encouraging staff development from the band 6's and the Matron, furthermore the experience and workload intensity of staff was deemed necessary for review by the band 7 Sister and Matron.

Recruitment and retention

Efforts to recruit and retain nursing staff were also critical to safe staffing and were operating on three different levels. Within Case D itself, a wide range of local and national recruitment strategies were ongoing and included rolling media adverts, open days and recruitment fayres that involved nursing staff from across the divisions. Local recruitment also focused on various internal 'grow your own' initiatives for existing staff, particularly to develop nursing support staff through part time nursing degrees for example. 'Listening in action' groups were also being formed with HR, ward managers and Matrons to work on making hard to recruit areas (e.g. medicine in Case D) more attractive. In response to UK nurse shortages, international recruitment was also increasing and targeting mainland Europe, despite Brexit (some EU Registered Nurses have already returned home or are going elsewhere during recruitment process e.g. Ireland), and the Philippines.

Improving retention was also a priority in the hope that by committing to staff, they will commit to us as one nurse manager put it. More work was also focused on better supporting staff in post, particularly making sure they're being listened to and mentored and are working in the areas for which they have been trained, though this was hard with ongoing pressures to transfer staff to fill in gaps and maintain safe staffing. Services were also constantly reviewing their work, particularly whether Nurse Prescribers or Specialist Registered Nurses for example could undertake some of the work of Doctors given the vacancies in medical teams too and to reduce the valuable time Registered Nurses spend chasing Doctors. Retention fees were also under consideration for some areas, particularly those with high vacancies, though Case D hadn't agreed to this yet.

More broadly, Registered Nurses were working with local Universities to recruit newly qualified Registered Nurses had noticed a decline in recent months. They hoped the recent start of a new nursing degree at the closest University might improve local recruitment, though there were some major emerging obstacles (e.g. recent withdrawal of University training bursaries in England). Others thought Universities should get more creative, by more proactively targeting men for example. For their profession, Registered Nurses thought there was a need to re-invigorate national campaigning to attract the public towards a nursing career, particularly by returning to its caring values, emphasising the many flexible ways of entering it such as apprenticeships or part time routes and the specialist routes available, though some nurse managers were also wary of this. Specialisation was good in some ways (e.g. recruiting, retaining & developing staff, better patient care) but Registered Nurses also feared specialist knowledge was not being shared whilst generalist nursing skills were being lost. One nurse feared a time when clinical nurse specialists directed unskilled staff to deliver care on wards when you need both roles.

Other concerns

To explore broader issues in safe staffing, Registered Nurses were asked to identify the greatest challenges in getting the right people with the right skills in the right place at the right time and these are summarised in **Table 1** below. These challenges were frequently interlinked, but surprisingly pay was not flagged as a challenge. To build on **Table 1** for the future, nurse managers were also asked what would happen to nurse staffing in the next five years. All agreed that things would probably get worse before they improved, particularly as factors including retirement, the loss of bursaries and Brexit were realised. Some feared

another Mid Staffs, but two were currently funding their children through nursing degrees and all admitted that they still loved their jobs and were optimistic that things would change for the better in time.

Table D1: Greatest safe staffing challenges in Case D

Challenge	Main issues for Registered Nurses
Shortages of Registered Nurses	→ Registered Nurses accepted they always moan about staff shortages, but vacancies in some areas were unprecedented, they were struggling to cope and were leaping from crisis to crisis.
Increased patient needs, local conditions & unrealistic expectations	→ Registered Nurses described patients becoming increasingly sick, complex and dependent patients in recent years. Emergency department attendances had also increased, whilst discharge was an ongoing concern due to local social care problems. → A local population affected by high levels of poverty and inequality. → Some patients had unrealistic expectations, influenced by social media, such that some Registered Nurses felt they were being set up to fail.
Registered Nurses tired & frustrated & unheard	→ Registered Nurses were concerned that covering vacancies was making them tired and sick, that their goodwill was running out and their concerns were not being heard.
Lack of time for staff development	→ Registered Nurses concerned about the lack of time for training, supervision, mentoring etc. during the working day and its impacts on their capability, competence and wider satisfaction. → As well as staff shortages, some blamed changing shift patterns, for example 12-hour shift patterns in some areas left little time for developmental work or other important work (e.g. cleaning, audits, complaints investigation).
Student Nurses	→ Are potential students being put off by bad press about Registered Nurses and NHS? → Impacts of recent withdrawal of University training bursaries in England.
High turnover of ward staff, impacts on experience, skill mix, leadership	→ Factors included the impacts of shortages, EU/international Registered Nurses (see below), lack of staff development, generational differences (e.g. end of 'train and stay' careers, more 'what's in it for me' attitudes), different career pathways (e.g. specialisation), increasing loss due to retirement → Implications = less experienced Registered Nurses (esp. bands 6 & 7), who (arguably) less able to maintain standards and skill mix, support, challenge and lead.
Bank and agency staff	→ Vital to maintaining ward nurse staffing, but sometimes not treated well. → Can compound problems of experience/skill mix and finance and create tensions with permanent staff, particularly when covering transfers.
EU & international Registered Nurses	→ These Registered Nurses often experienced, impacts on turnover (as above) → Brexit not happened yet, but some EU Registered Nurses already returning home or going elsewhere during recruitment process (e.g. Ireland) → International Registered Nurses failing IELTS examinations, despite significant support from Case B, Registered Nurses concerned that NMC are getting this policy wrong.
Specialist Registered Nurses	→ Specialisation was good in some ways (e.g. recruiting, retaining & developing staff, better patient care) but Registered Nurses also feared specialist knowledge was not being shared whilst generalist nursing skills were being lost. One nurse feared a time when clinical nurse specialists directed unskilled staff to deliver care on wards when you need both roles.

Appendix 7: Engagement Events

Patient & Public Engagement Event: Safe Staffing in the NHS

Event: Workshop hosted by University of Southampton, at Wide Lane.
Date: 1st May 2018 10:30 – 14:30

Participants: 8 invited participants, plus Francesca Lambert (lead PPI for study), Principal Investigator (Jane Ball), and Research Fellow (Chiara Dall'Ora). 4 men, 4 women, mix of ages, mix ethnicity, and mix of experience of health care services (as patients, carers, both).

Structure:

Introduction to the day
1.a) Presentation (15 mins): 'Safe staffing': in theory (what is it?), national policies and guidelines intended to make sure nurse staffing levels are safe (where did they come from?), why research nurse staffing?
1b) Discussion: A patient/carer perspective on 'safe-staffing' → What does it mean to you? Are you aware of it? → What does good nurse staffing levels look and feel like?
(What are the signs of success?) → Have you been aware of the nurse numbers on hospital wards? → What info provided re nursing numbers? → Are patients/carers aware/kept informed? → What would people want to know about nurse staffing? → Have things changed?
2a) PRESENTATION (20 mins): Findings from the research
2b) Discussion: Reaction/PPI perspective on research findings → Does it make sense? Anything unclear? → Which findings seem most important? → Are any of the findings a surprise? → So what? - What are the implications of the findings?
What should happen as a result of them?
2c) ALL: Pool responses re reaction to research findings
3) ALL: How should we share the findings at the end of the study? (25 min)
Close and thankyou/next steps.

Themes/issues surfaced

Safe staffing: means happy patients – who are satisfied that basic care needs are met with dignity, sufficient time to have proactive communicator and rapport, feel safe, and have confidence that higher level clinical needs are being considered and will be delivered, on time. That they are 'safe' to trust in the hospital/ward staff to look after all their needs – from the most personal to the most high-tech/clinical.

How do you know if staffing levels are sufficient? Assess it against the guideline/standard set. Half way through the workshop it became apparent that all eight of the participants had assumed that there was a nationally set standard for nurse staffing levels; assumed that some kind of bench mark, minimum, average or 'optimum' – would exist, and that this is what regulators and other assess staffing by. They expressed surprise: 'How can we have limits on the number of stewards needed at a football match or nursery nurses for childcare, but not regulate nurse staffing?'

Patient/carer perspective on planning staffing – what ideas of 'enough staff' are based on: way hospitals/systems work out how many staff are needed are very rooted in assumptions – about 'getting average stuff done for an average patient' – but don't take account of patient perspectives on what is priority and what are goals of care, nor do they consider the stuff beyond provision of 'basic' physical care' – time to talk, to communicate, to jointly assess and plan care, to coordinate and communicate with other staff etc.

Right staff "wrong" patients? The staffing plans assume a certain mix of patients – but patients are not placed where they 'should' be; end up on 'wrong' wards. Being the 'wrong type' of patient on a ward means level of care required may be predicated on wrong patient mix relative to reality. Any given shift may be very different than planned. Too much moving about of patients ("like being on a conveyor belt") putting them on wrong wards – not efficient use of resources and very disruptive for care (so recovery slowed, time to discharge increased).

Enough time from nurses with sufficient skills: 'Safe staffing' as a term seems to be mean little – but "Enough nursing time to..." Is what participants see as what patients want. They expect to be able to trust that the system is set up to have enough staff with right level of skill to keep patients safe. Staffing for safety is expected as a bare minimum. Want sufficient staffing to allow enough time - so that patients don't have to feel like an 'inconvenience' and that they have contact with the named nurse throughout the shift, and feel able to raise concerns, ask for information etc. Identified the need for sufficient 'properly trained staff' – enough of the higher trained nurses with higher level skills to be able to cope with needs of patients in that speciality.

Need to change way we think about how many nurses needed – take account of patient view point in planning staffing to meet needs. Both theoretically (in developing tools) and day to day – in assessing individual' needs and planned care per shift. Need to be ready to deal with the 'pinch-points' – critical moments that need quick access to RNs/highly trained staff. **"If this was the private sector it wouldn't be run this way"** argued one participant. Services would need to ensure care delivered promptly and have enough staff to do that, to ensure customer satisfaction and reputation are intact.

Being a ward patient can be 'dehumanising': Being a patient makes you feel like a 'second class citizen' – a dehumanising experience that strips away dignity. Told "there is no dignity in hospital".

Compromise and complicity: Participants challenged the apparent tolerance of low standards, of compromise, of not enough time, or not enough staff or policies not being delivered on, of shortage of RNs. Those who have been in hospital as patients or watched elderly relatives not receiving basic care they need (because they are 'blind' for example, and no 'spare' in the system to cope with someone with additional needs). They are outraged at these things – and cannot understand why nurses, NHS providers, policy makers and us, as researchers, do not share that outrage. The 'system' – including those researching it - seem to have accepted compromised poor care and insufficient staffing as the norm. Patient/public have not: they see having enough nurses present to meet patients' needs as essential, and express surprise that the NHS strives to have 'safe staffing;' this should be an assured minimum not a goal. They think the public should know more about challenges around nurse staffing, and degree of compromise expected.

Average staffing doesn't deal with pinch points: staffing may be ok when things are average, and HCAs can do much of the basic care. One man saw that having plenty of HCAs had been good and generally enhanced care during his stay; basic care got done speedily without having to wait. However, group discussion also raised point that problem of staffing to the average situation, is that if a few people need higher level skill at same time – for cannulation, catheter, expert opinion, controlled drugs – there are not enough of them to cope. There are too few of the higher skilled nurses to be able to respond

to these emerging situations promptly. For example, the same person who generally was happy with the input and skill-mix – cited an example when everything got 'held up', because there wasn't an RN available to sort out the particular issue. Another participant described incidents when things had gone wrong, and gave two specific examples. The major problem in both was that problems were not picked up quickly – e.g. arm swelled up as lines had put back in wrong place after a bed bath – no one responded or listened to her worry about it, until a sister came around at the change of shift. This mistake, and lack of detection of the ensuing complications, led to a major problem requiring medical intervention. If there had been higher level trained nurses around, and checking more often, the original mistake might never have happened, or the consequences of the error might have been detected sooner.

Specific points

How do we know we got staffing right/wrong; what is safe-staffing?

- Not being able to see continuity and to build relationships with nurses.
- Feeling like you are not wanting to bother staff because they're too busy.
- Comparing current ward to previous wards: nurses were more attentive there.
- Level of complaints.
- CCG/SFO giving enough money to staff the ward.
- Basic needs are fulfilled.
- Good quality of communication (e.g. monitor through the use of Quality Interaction Schedule - QUIS).
- Nurses have enough time to check into people.
- Having access to your named nurse and having sufficient time to speak with them.
- Happy patients + basic needs met. If patients' basic needs are not met, care could become unsafe, and hospital stay could get longer. If non-clinical needs are met, your level of confidence increases.
- Reputation – word of mouth, a sort of TripAdvisor for hospitals/wards.
- Patients recognise that staffing levels and mix of staff depend on type of ward – high dependency/high acuity wards will need more Registered Nurses.
- Not having enough trained staff to do the job, and to undertake particular tasks. It is unsafe and increases uncertainty (e.g. episode of patient who had to wait to have their catheter removed because no catheter trained staff was available).
- Not just about numbers, why not involve patients in planning staffing, working out what is needed? A qualitative approach could ensure these details of what good care is (in the eyes of patients) are included when planning staffing levels.

Strategies for busy staff on busy wards:

- Spend 5 minutes with patients when they are admitted and give them a tick-list of different steps to be taken before surgery, including what they should expect. People need their basic needs fulfilled: give better information to patients they are admitted
- Get the patients to know the ward they will be moved to after surgery – they can be disorientated and care can get fragmented
- A ward can be well staffed by HCAs, skill mix made a difference because HCAs dealt with my immediate needs

Comments on PRP study results:

- All participants were surprised that there is no minimum threshold for staffing levels: had assumed there were national standards that hospitals have to meet (one likened it to class room sizes or child care regulations).
- Is patient feedback informing policy around staffing levels? Feedback – must be meaningful. Use of patient complaints data to reshape care.
- Demand for investigations in hospital: should hospital be made to close when running an unsafe ward?
- Are staffing data transparent enough? It should be also on NHS choices
- Is meaningful feedback being asked for from patients at discharge? A patient feedback form should be asking meaningful questions and co-designed with patients
- It is sad that quality of care is low, and it is what patients and staff expect.
- The ultimate test to know if Francis changed something is if patient experience has improved
- Results of this study should be shared with nursing discussion boards + members of the public should know, too. Pay attention not to make results too scary, though. Also, think about creating 2-page summaries.
- Results should be shared with local providers, the CCGs and national media.
- Can you please bring our comments to CNOs and policy makers and ask them how useful they were?

Engagement Event – Nursing staff

Event: Workshop held at RCN Congress, Fringe event
Date: 16th May 2018

Participants: cross section of nurses (estimated 25) attending the RCN Congress

Structure: short presentation of findings from the research study (entitled 'Safe-staffing: from plans to reality') followed by discussion. Participants were invited to attend in order to:

a) Hear emerging findings from a national research study on how policies developed following the Francis inquiries to support 'safe-staffing' have been implemented. The study looked at what has happened, how staffing levels changed, the costs and consequences, and factors that affect how policies have been implemented locally.

b) Engage with the researchers to give their 'take' on the findings. Aim was to bring the findings of this study to the attention of nurses and hear their reactions at Congress.

Themes/questions/issues emerging

- **Recruitment & retention issues important:** Trusts need to be able to make their appeal more explicit 'why it's good to come and work for us'
- **Discussion on usefulness of staffing ratios:** viewed necessary to push for a minimum ratio of 1:7 in acute settings. Discussion as to the difference between minimum and optimum levels, and danger of understaffing. There were views of minimum being aspirational rather than 'warning level' and reference made to 'normative ranges' used in Northern Ireland.
- **Perceived reduction in variation in staffing levels:** Less fully 'red' and 'green' wards/shifts, more amber. Concerns that 'green' wards feel 'punished' for having better staffing levels. Concerns that imposing minimum staffing levels may mean risking losing staff from well-resourced to less well-resourced areas.
- **Awareness of nurse staffing levels informing bed closures:** Whilst funded establishments have improved in some places there's still issues with nurse vacancy levels. Alongside greater awareness of safe staffing levels is an understanding of 'this is how much staff we have so this is how much care can be provided'. In light of this there was discussion around the potential for more bed closures until staffing levels are appropriate.
- **Minimum staff levels mandate may empower nurses to action safe staffing levels:** Further discussion on insufficient staffing for safety revealed concerns of lacking ability to limit service provision to match available staffing (in contrast to places where minimum mandated: beds that are not staffed are shut).
- **Question:** Is need for staffing based on a measure of acuity and dependency? Discussed NICE endorsement of the SNCT in addition to referring to 1:8 ratio as a warning. Idea was to use this in conjunction with good planning, taking into account acuity and dependency also and other factors.
- **The RCN has a commitment to safe staffing:** RCN has recently published 'staffing for safe and effective care nursing on the brink'. It endorses accountability throughout the system.
- **Further research is necessary:** This research needs to carry on, as staffing is likely to get worse in the years to come, so we need to continue this research. Lack of joined up thinking and commitment is key issue.
- **Impact on students:** Students are choosing to work in trusts where they feel safest. Nurses and students vote with their feet.
- **Question:** Mental health, are these numbers included? Has staffing of the acute been at the expense of other areas i.e. mental health, learning difficulties and community?

- **Community model is different from inpatient model, it needs to be optimal to be safe:** In the community the inpatient model keeps being put into outpatient settings, but it's not suitable. The dialogue about what's safe and what's optimal doesn't make sense. It needs to be optimal to be safe. Clinics are cancelled if optimal numbers are not achieved.
- **Question:** What research has been carried out in nursing home settings?
- **Question:** What impact have low staffing levels had on sickness, stress and anxiety – has research looked at this?
- **Tools require rigour:** Standards/benchmarks can be powerful tools but they need to be calibrated carefully updated and reviewed.

Policy Engagement Event

Event: Policy Briefing, at Department of Health & Social Care, Victoria St, London.
Date: 12th April 2018 14:00 – 15:00

Participants: 12 leads invited from national policy bodies (such as NHS Improvement, DHSC, NICE, NHS England, RCN, NHS Providers), plus advisory group PPI members.

Structure: participants were invited to a one-hour policy briefing at which we shared emerging findings from the study and sought their views on the implications of the research, and how best to disseminate the findings beyond the end of the study.

- 14:00-14:20 Presentation of key findings (by PI of research study, Jane Ball)
- 14:20 – 15:00 Questions & Discussion

Themes/issues surfaced

- Change and variation in staffing levels (as opposed to whole Trust or national level): discussion of the opportunity to explore/identify ward level, shift level staffing (and how changed), e.g. through the data collected in the SNCT study. What changes in bed numbers? Is the perception that there is less variation at ward level in staffing levels now than previously, supported by data?
- Staff transfers: Do staff move around more than they did, to support safe staffing? What is knock on effect of this?
- Clarification on the detail of estimated costs of safe staffing implementation: do they include on-costs, agency and bank staff usage?
- Response: more detail in report.
- Patient outcome measures e.g. falls, medication errors to consider 'impact': What measures exist beyond NHS safety thermometer data? What opportunity to examine outcome measures in relation to staffing data in order to consider 'impact'.
- Response: Limited in the current study (as requires more detailed data to allow case-mix adjustment etc.), but the relationships have been explored in other studies, including the current HS&DR funded 'Missed care study' undertaken by University of Southampton.
- Questions about live systems data: is data accessible to enable monitoring over time, identify changes, allow retrospective audit/review? How much time spent in entering data? Could it be simplified?
- Labour market context: To what extent does the labour market issue 'blow everything out of the water'? Are there aspects of how policy has been implemented in contexts at different Trusts that may mitigate against the impact of the nursing shortage? Discussion as to the extent to which the labour market context has impinged on delivery of safe staffing objectives.
- Policy alignment: There is need for greater alignment between policies, to ensure guidance on issues such as safe staffing are feasible. Discussion of how this is being addressed going forward – Resource and Implementation Panel (gRIP) formed to anticipate workforce and resource implications of policy and practice changes in NHS.
- Skill-mix findings: What has been Trust response in terms of skill-mix, and efficient use of staffing? What are skill mix and efficiency implications of the study?
  Response: Not a lot to show what the skill mix should be. There is information on harms of reducing RNs, ways these risks can be mitigated require further research. Nursing associate role introduced to 'bridge the gap' – but lack of research to date on potential impact. Skill mix still a gap in knowledge.
- Recruitment/retention: Importance of socioeconomic context. Primary and secondary education promoting nursing as a career.
- Dissemination ideas: Safe staffing symposium (potentially supported by NIHR); event to showcase research findings from across different NIHR/PRP funded studies, related to workforce, to stimulate engagement with policy, practice and research.

Appendix 8: Guidance & expectations in relation to safe staffing

Specific aspect	Source of guidance	Expectation of Trusts
1. Planning posts needed (Establishment setting)		
How	Keogh 2013 Berwick 2013 NICE 2014 NQB 2016ab NQB 2018	→ Evidence based system/tool used (to assess demand and resourcing requirement)
	NQB 2016ab	→ System used without local modifications
	NQB 2013 NQB 2016 NQB 2018	→ Appropriate systems training
	NICE NQB 2016a	→ Systematic approach
	NICE	→ Use of NICE endorsed SNCT
	NICE 2014 NQB 2016ab NQB 2018	→ Use of Professional judgement
	NQB 2016ab	→ 'Triangulation' (evidence-based tools, professional judgment and comparison with peers)
	NICE 2014	→ Routinely measure average nursing hours required per patient
	NQB 2013 NQB 2016ab NQB 2018	→ Multi-professional approach
	NQB 2016ab	→ Use of lower skilled roles
	NICE 2014	→ Bed utilisation (no. pts per 24 hours period) is known and used to predict nursing hours needed
	NQB 2016a NQB 2018	→ Care Hours Per Patient Day based on midnight census
	NQB 2018	→ Balance staffing and productivity
	NQB 2016a NQB 2018	→ Efficient deployment
	NQB 2016a	→ Minimise Agency use

Specific aspect	Source of guidance	Expectation of Trusts
	NQB 2013 NICE 2014 NQB 2016b NQB 2018	→ Appropriate uplift
	NQB2013	→ Commissioners specifying in contracts the outcomes and quality standards they require and actively seek to assure themselves that providers have sufficient nursing, midwifery and care staffing capacity and capability to meet these.
	NQB2016a	→ Commissioners, regulators and other stakeholders should be involved in supporting NHS providers to deliver the right staff, with the right skills, in the right place at the right time
When	NICE NQB 2013	→ Formally review establishment at least every 6 months at least
	NQB 2016a NQB 2018	→ Formally review establishment at least annually → 6 monthly comprehensive staffing report to the board
Who involved	NICE 2014	→ Front line RNs
	NQB 2013 NICE	→ Led and approved by Directors of Nursing
	NICE	→ Senior Nurse Managers involved
	NQB 2013	→ Sisters, Charge Nurses Team leaders involved
	NQB 2013	→ Board sign off (and on any changes/reviews)
		→ 'Multi-professional approach'
Sufficient to...	Keogh 2013 Berwick 2013 CIP 2012 NQB 2013 NICE 2014 NQB 2016ab NQB 2018	→ Provide safe nursing care to each patient at all times of the day and night
	NQB 2013	→ Cover predicted absence (leave, sickness, other absence)
	NQB 2013	→ Allow time for CPD for RNs and all care staff
	NQB 2016a	→ Enable mandatory training, development and education
	NQB 2013 NICE	→ Allow time for supervision

Specific aspect	Source of guidance	Expectation of Trusts
	NQB 2013 NICE	→ Allow time for mentoring
	Francis 2013 NQB 2013 NQB 2016b	→ Enable Ward sisters to be 'supervisory'
	NICE 2014	→ To cover 'specialling' needs
	NQB 2016b	→ To cover fluctuations in workload (minimise need for temporary staffing)
	NQB 2016b	→ To deal with unplanned events (responsiveness time)
Skill-mix	NICE 2014	→ Professional informed judgement to determine skill-mix needed
2. Planning per shift (rostering/scheduling)		
System used	NQB 2013 NICE2014 NQB 2016 ab NQB 2018	→ E-Rostering policies in place
		→ Senior nurse Managers accountable for rosters
3. Review staffing on each shift (on the day)		
Review/reassess	NICE 2014 NQB 2016a	→ Shift by shift review of dependency and other factors to review total staffing level needed per shift
	NICE 2014 NQB 2016a	→ Review skills required on the shift
	NICE 2014	→ Assess need for specialling
Identify short-falls	NICE 2014 NQB 2016a	→ Measure difference between required and available
	NICE 2014 NQB 2016ab	→ Professional judgement used per shift
	NICE 2013 NQB 2016a	→ Flexible deployment
Respond to shortfall/skill deficit	NQB 2013 NQB 2016b	→ Clear escalation policies and process → Review skill-mix
	NICE 2014	→ Immediate escalation of red flag events

Specific aspect	Source of guidance	Expectation of Trusts
	NQB 2016a	→ - Commissioners, regulators and other stakeholders involved in decisions to close a care environment or suspend services due to safe staffing concerns
4. Measure & report		
General	NQB 2016a	→ Trusts using the NQB recommendations for monitoring the impact of staffing on quality in acute hospital inpatient settings → Monthly Board review of workforce metrics, indicators of quality and outcomes and measures of productivity
	NQB 2014	→ Monthly board updates providing details of the actual staff available on a shift-to-shift basis versus planned staffing levels
Staffing numbers	NICE 2014	→ Display number of RNs and support workers on duty on every ward on every shift
	NICE 2014	→ Measure 'fill rates' (and reasons for gaps, impact and actions taken) and report to board
	NQB 2016a	→ CHPPD as the principal measure of nursing, midwifery and healthcare support worker deployment
Indicators – patient related	NICE 2014	→ An indicator of safe nurse staffing should be used
	NICE 2014 NQB 2016a	→ Use of outcome measures sensitive to nurse staffing
	NQB 2016a NQB 2018	→ Patient outcome measures
Red flags	NQB 2016b NQB 2018	→ Red flags reported by staff on shift
	NICE 2014	→ Policies for responding to red flags
	NICE 2014	→ Response to red flags
Staffing level indicators	NICE 2014	→ Missed breaks
	NICE 2014	→ Overtime worked (paid, unpaid)
	NQB 2016b NQB2018	→ When more than 8 patients per RN providing care
Workforce metrics	NICE 2014 NQB 2016ab NQB 2018	→ Use of temporary staffing
	NICE 2014 NQB 2016ab NQB 2018	→ Vacancies

Specific aspect	Source of guidance	Expectation of Trusts
	NICE 2014 NQB 2016ab NQB 2018	→ Sickness absence
	NICE 2014 NQB 2016ab NQB 2018	→ Staff turnover
Staffing incidents	NQB 2018	→ Investigation, action and feedback
	NQB 2016a	→ Treat reported staffing incidents as patient safety incidents and upload to the National Reporting and Learning System
Benchmarking	NQB 2016ab NQB 2018	→ Comparison with peers
	NQB 2016a NQB 2018	→ Local dashboards
External review	NQB 2013	→ CQC safe staffing inspections
	NQB 2016a	→ Boards review workforce metrics, indicators of quality and outcomes, and measures of productivity on a monthly basis
	NQB 2016a	→ Report monthly CHPPD data to NHS Improvement.
	NQB 2016a	→ Review staffing with peers
	NQB 2016a	→ Economic assessment on staffing
5. Review (across Trust, over time)		
Use of metrics	NICE 2014	→ Red flags monitored
		→ Number of red flags monitored across Trust and referred to in staffing review
		→ Fill-rate data used to inform staffing review
6. Culture & accountability		
Supportive environment for staff	NQB 2013 NQB 2016a NQB 2013 NQB 2016ab	→ Right culture, leadership and skills → Whistle-blowers policy
Shared accountability	NQB 2013	→ Providers & commissioners working together
	NQB 2013	→ Board sign-off for establishments
	NQB 2013	→ Commissioners monitoring quality and outcomes closely and intervening when necessary

Specific aspect	Source of guidance	Expectation of Trusts
	NQB 2013	→ Chief Executive ensure workforce plans are clinically and financially viable
	NQB 2016b	→ Provider boards demonstrating individual and collective accountability for staffing
	NQB 2016a	→ Boards should ensure there is sufficient and sustainable staffing capacity and capability to provide safe and effective care to patients at all times, across all care settings in NHS provider organisations.
7. Future workforce		
Recruitment and retention	NQB 2016ab NQB 2018	→ Action plans to address recruitment and retention
	NICE 2014 NQB 2018	→ Flexible employment options
	NQB 2013	→ Chief Executives informing education commissioning processes
	NQB 2016b	→ Rosters designed to reduce fatigue

Appendix 9: Table of data sources

Reports using NHS Workforce data, reporting time trends and distribution of staff between sectors

Publication	Data sources	Conclusions
Buchan, Seccombe. A decisive decade. The UK nursing labour market review (2011) (12)	NHS Staff - 2000-2010, Non-medical	**2000 to 2010:** 26% increase in FTE QN, MW & HV over period, but rate reduced after 2005 (20% 2000-05, 0% 2005-07, 4.7% 2007-10). Auxiliary FTE increased 6.8% 2000-05 and fell -20.5% 2005-10. HCA FTE increased over the whole period (more than doubled from 20,415 [2000] to 43,212 [2010])
Buchan, Seccombe, O'May. Safe staffing levels – a national imperative. The UK nursing labour market review (2013) (137)	NHS Workforce Statistics in England (2002-2012), NHS Workforce Statistics in England: Non-medical staff (2002-2012),	**2002 to 2012:** 13.7% increase in FTE QN, MW & HV. 10% increase 2002 to 2005; plateau 2005 to 2007; 4.4% increase 2007 to 2009; slight reduction (1.3%) from 2010. No growth in Community Services workforce; decline in district nurse and health visitor FTE. Activity growth greater than growth in workforce; FCEs grew by 36% while mean LOS reduced (suggesting higher acuity?). **03/2010 to 03/2013:** overall decline in QN, MW & HV (headcount) -1.8%. Clear cyclical variation; growth Sept-Dec (0.3 – 0.7%) and decline March-Jun (0.5 – 0.6).
RCN. An uncertain future. The UK nursing labour market review (2014) (138)	NHS Workforce Statistics in England (2003-2013), Monthly NHS Hospital and Community Health Service (HCHS) Workforce Statistics (May 2010-April 2014)	**2003 to 2013:** 10.7% increase in FTE QN & MW - dips 2006-07 and 2010-11; 5% decline in NA/A FTE. **2010 to 2013:** FTE decline for QN, MW & HV except paediatric and neonatal nursing. **08/2013 to 03/2014:** 3.6% increase QN, MW & HV in AEG; 2.8% increase in FTE community services (after 6% reduction from 06/2010) - possible response to Francis Report **05/2010 to 03/2014:** 1.3% increase in FTE QN, MW & HV but dip to 304,566 (-2%) in Aug 2012
RCN. A workforce in crisis? The UK nursing labour market review (2015) (139)	NHS Workforce Statistics in England (2004-2014), Monthly NHS Hospital and Community Health Service (HCHS) Workforce Statistics (May 2010-Feb 2015)	**2004 to 2014:** 9.3% increase in FTE QN & MW - dips 2006-07 and 2010-11. 4.3% decline in HCA/ HCSW FTE over whole period, but growth (≈5%) from 2012-14 **05/2010 to 02/2015:** 2.5% increase in FTE QN, MW & HV over while period; covers decline of 2.0% 05/2010 to 08/2012 followed by increase of 4.4%. **08/2013 to 02/2015:** 5.0% increase QN, MW & HV in AEG; 6.5% increase in FTE QN, MW & HV in community services (after 6% reduction from 06/2010)

Publication	Data sources	Conclusions
Buchan. Nursing workforce sustainability: the international perspective. (2015) (140)	OECD Health Indicators – spending on health (percent of GDP and public as percent of total. Nurse & physician density (head count per 1,000 population)	Summarises evidence from Francis (2013) and Keogh (2013) reviews (concluding positive correlation between inpatient to staff ratio and mortality, high nurse vacancy, low staffing at nights and weekends) and emphasis on determining safe/ appropriate staffing (referring to NICE Safe Staffing in adult inpatient wards in acute hospitals 2014). Summarises evidence from Buchan *et al* (2013) (2) and Imison *et al* (6) indicating concern for security of supply, with reduction of internationally recruited nurses. Concerns over safe staffing lead to increases in funding for pre-registration nurse education (reference to HEE 2013 Workforce plan), but overall economic environment (reduced investment in continuing education, wage freezes and general financial constraints on NHS) suggest continuing staffing shortfalls
Marangozov, Williams, Buchan. The labour market for nurses in the UK and its relationship to the demand for, and supply of, international nurses in the NHS. (2016) (91)	OECD Health Indicators; NMC Register; NHS Improvement Analysis (141); Health Education England Commissioning and Investment Plan; NHS Workforce Statistics in England	Lack of strategic plan for nursing workforce supply has lead to cyclical pattern of shortage – international recruitment has become policy solution. Generalised shortfall due to demand & supply-side factors: safe staffing (increasing demand); inadequate student commissions, poor retention and ageing workforce (contracting supply). No specific characteristics (other than NHS trust type [Acute] and region [London and South East]) were associated with non-EEA recruitment.
Buchan, Seccombe, Charlesworth. Staffing matters: funding counts. (2016) (142)	NHS Workforce Statistics in England (2004-2014)	Repeat 2004 – 2014 analysis reported in RCN (2015) (139) Small reduction in nurse:population and small increase in doctor:population ratio (reflecting consistent growth in medical staffing and smaller, less consistent growth in nurses). Ageing nurse and nursing support staff workforce
Imison, Castle-Clarke, Watson. Reshaping the workforce to deliver the care patients need. (2016) (143)	NHS Workforce Statistics, October 2015, Provisional. NHS Workforce Statistics, September 2015, Experimental.	Breakdown of NHS Workforce – distribution of qualified clinical staff, support to clinical staff and infrastructure/ support. Distribution of non-medical across Agenda for Change pay bands.
Health Foundation. Fit for purpose? Workforce policy in the English NHS (2016) (144)	NHS Workforce: summary of staff in the NHS 2014	Argues workforce policy (developed and negotiated nationally) reduces flexibility. Predominant policy focus on incentives to improve performance and productivity without paying attention to staff engagement, work-life balance, stress morale and supportive management. Argue the role of these factors in recruitment and retention have been undervalued. Recommend creation of National Workforce Strategy Board convened by Department of Health, but need to pass control to regional and local leaders.

Publication	Data sources	Conclusions
HS Improvement/ Monitor. Evidence from NHS Improvement on clinical staff shortages. A workforce analysis: February 2016 (141)	HEE Workforce Plan for England 2015/16; NHS Workforce Statistics Provisional Statistics (Sep 2009 – Mar 2015); Hospital Episode Statistics	Forecast demand for nurses growing since 2012 (HEE predicted demand for adult acute nurses at 165,000 in 2012, 180,000 in 2013 and 189,000 in 2014). HEE workforce plan quoted in report indicated demand for nurses exceeding supply – reflected in 6.5% vacancy rate in all adult nursing (data from 1/4/2014 quoted in 2015/16 workforce plan). Increase in demand for adult acute nurses ascribed to: increase in inpatient activity; increased acuity of admitted patients; safe staffing policy (Post-Francis Report 2013 and NICE guidance as well as NQB 2013 recommendations and impact of CQC inspections in relation to safe staffing). Analysis of nurse staffing (FTE) indicated a 4.6% increase from Jan 2013 to Jan 2015. Accounting for change in workload (patient quantity and length of stay, not acuity) a measure of staffing level (nurse-to-patient-bed-day ratio) increased (i.e. more nurse hours per patient bed day) by 4% from Jan 2013 to Jan 2015 (end of period for which data were available at time of publication) having fallen in the period Dec 2011 to Jan 2013. The report identified three distinct phases of change in nurse-to-patient-bed-day ratio: **up to December 2011:** nurse-to-patient-bed-day ratio increased, with nurse staffing remaining stable but patient bed-days reducing (admissions stable but average length of stay reducing); **December 2011 – January 2013:** nurse-to-patient-bed-day ratio reducing, with nurse staffing remaining stable but patient bed-days increasing (average length of stay stable, but admissions increasing); **January 2013 - January 2015:** nurse-to-patient-bed-day ratio increased, with nurse staffing increasing while patient bed-days remain stable (increases in admissions offset by reducing length of stay). Shortfall in staff appears to have been met by increasing use of agency nurses (proportion of NHS staff 7% in 2014/15 up from 3.4% in 2011/12). Consultant numbers increased more rapidly than activity, although some specialties experience particular recruitment difficulties.

Publication	Data sources	Conclusions
National Audit Office. Managing the supply of NHS clinical staff in England. (2016) (121)	NHS Workforce Census; Health Education England; PSSRU Unit Costs of Health and Social Care; NHS Professionals; NMC Register	Focus on inflows to NHS workforce, assuming system is not in balance (staffing shortfall approx. 5.9%, equivalent to 50,000 clinical staff, in 2014). Argue for long-term national workforce plan and discuss efficient response to shortfalls. Concerns over NHS Trusts workforce plans due to: pressure to meet "efficiency" targets; predicting change in service delivery; uncertainty over demand arising from safe and quality care (post-Francis/ NICE). Concerns over commissioning training places (lack of data), competing priorities and emerging pressures. Concerns over use of temporary staff versus alternative approaches to meet shortfalls (international recruitment and return-to-practice initiatives).
Dunn, McKenna, Murray. Deficits in the NHS 2016. (2016) (145)	Appleby *et al* 2014 (36); National Audit Office (2015) (146); National Audit Office (2016) (121) NHS Improvement/ Monitor (2016) (141); NHS England (147); Public Account Committee (148)	Deficit across NHS suggests overspending not attributable to mismanagement at individual organisations, but that funding has not kept pace with increasing demands, Pressures exacerbated by pressure to recruit and improve quality following Francis Report. Note staff costs account for approximately half total NHS spending and are 70% of typical hospital total costs. NAO indicate staff costs for acute trusts rose by 8.1% from 2011/12 to 2014/15. Underlying deficit means that cuts in staff and reduction in quality of care are inevitable, within current financial constraints.
Buchan, Seccombe, Gershlick, Charlesworth. In short supply: pay policy and nurse numbers – workforce profile and trends in the English NHS. (2017) (149)		Documents shift in staff-mix 2010-2015 – consultants increase 22%, HCHS doctors 9%, midwives 10% and nurses & health visitors 1% - associated with declining productivity in acute hospitals. (150) Suggests higher proportion of nurses at hospital is associated with higher consultant productivity. Context for limited growth in nurse workforce is limited supply. National shortfall of 22,000 adult nurses (approx. 10% workforce) in 2015 (projected to "optimistic" 5.5% or "pessimistic 15% by 2020) with Brexit increasing uncertainty. Concludes national guidance on safe staffing required, to support local decisions. They note that NHS pay is projected to decline by at least 12% between 2010/11 and 2020/21 and argue that preparation will needed for the end of the freeze period (consider options for determining complete reward package). Assess effects on recruitment, retention and engagement of staff. Report reiterates need for coordinated workforce policy in NHS – especially since pay restraint and reductions in headcount have been important for financial balancing, but may conflict with other system aims.

Publication	Data sources	Conclusions
Nursing and Midwifery Council (NMC). The NMC register 2012/13 - 2016/17 (2017) (151)	NMC Register	Register increased each year March 2013 to March 2016 (approximate annual increase of 0.6%), but declined to March 2017 – decrease of 0.3%. Proportion on register first registered in UK declined from 87.4% (2013) to 84.7% (2016) – overseas remained roughly constant (10.1 to 9.7) while EU proportion doubled (2.5 to 5.5). Number of initial joiners to register has fluctuated (overall increase from approx. 25,000 (2012/13) to approx. 30,000 (2015/16 & 2016/17). UK fluctuated around 20,000 to 23,000. EU increased from 3,436 (2012/13) to 9,389 (2015/16), then declined to 6,382 (2016/17). Overseas increased from 869 (2012/13) to 2,403 (2016/17). Numbers leaving register increased 23,087 (2012/13) to 34,941 (2016/17). Increase most apparent for UK (19,819 to 29,434) and EU (1,173 to 3,081). Net impact that more are leaving register than joining (20% between 2016 and 2017) – most notable for UK registrants. Leaving register below retirement age increasing (average leaving age, when retirement not stated as reason, reduced from 55 (2013) to 51 (2017)).
Nursing and Midwifery Council (NMC). The NMC register (2017) (151)	NMC Register	Register increased each year September 2013 to September 2016 (approximate annual increase of 0.7%), but declined to September 2017 – decrease of 0.24%. Proportion on register first registered in UK declined from 87.2% (2013) to 84.9% (2016) – overseas remained roughly constant (10.0 to 9.8) while EU proportion doubled (2.7 to 5.3). Number of EU registrants (total) fell 2,733 (7%) 2016 to 2017 while new EEA registrants fell from 10,178 to 1,107. Overseas registrants remained roughly constant. Proportions leaving the register Oct 16 to Sep 17 increased (up to approx. 4% for overseas and 5% for UK registrants). Proportion of EU registrants leaving the register increased to approx. 11% (compared with 6% Oct 15 to Sep 16). Overall 27% more left (35,363) the register than joined (27,786) in Oct 16 to Sep 17. Register had 1,678 fewer nurses and midwives than September 2016.

Publication	Data sources	Conclusions
Buchan, Charlesworth, Gershlick, Seccombe. Rising pressure: the NHS workforce challenge. (2017) (152)	NHS HCHS Monthly Workforce Statistics – provisional statistics and bespoke extract; General and personal medical services in England – September 2016 UCAS statistical releases Bespoke data release from Nursing and Midwifery Council (NMC)	Focus on changes since Buchan *et al* (2016) (142). Argue that NHS still lacks a coherent and comprehensive national workforce strategy – plans too often fail due to unrealistic timescales and uncoordinated implementation. Report notes uneven growth in NHS workforce – greatest growth in managers/ senior managers (4.3%), medical consultants (3.5%) and support to clinical staff (2.5%). At the same time nurses and health visitors, mental health nurses and community nursing declined (0.2%, 0.5% and 2.9% respectively). FTE GPs also declined. Compared with OECD UK has fewer doctors and nurses per head – although doctors in training per head is greater than OECD average. Nurses in training per head (29 per 100,000 population) is below OECD average (45 per 100,000) UK ≈1/3 Australia (79 per 100,000). Removing training bursary for nursing and AHP saw 23% reduction in applications, compared with 4% overall fall in applications to university (although applications still exceed places). Analysis in report indicates fall in applications in England is greatest in those aged 25 & over. In context of 29,000 FTE staff shortfall in 2016 and projected loss of 84,000 nurses prior to retirement (over 2016-2021) reports indicates that workforce stability in NHS trusts (percentage of staff staying at Trust in a given year) fell from median of 89% in 2010/11 to 85% in 2016/17 – variation between trusts also increased. Report reiterates need for coordinated workforce policy in NHS.

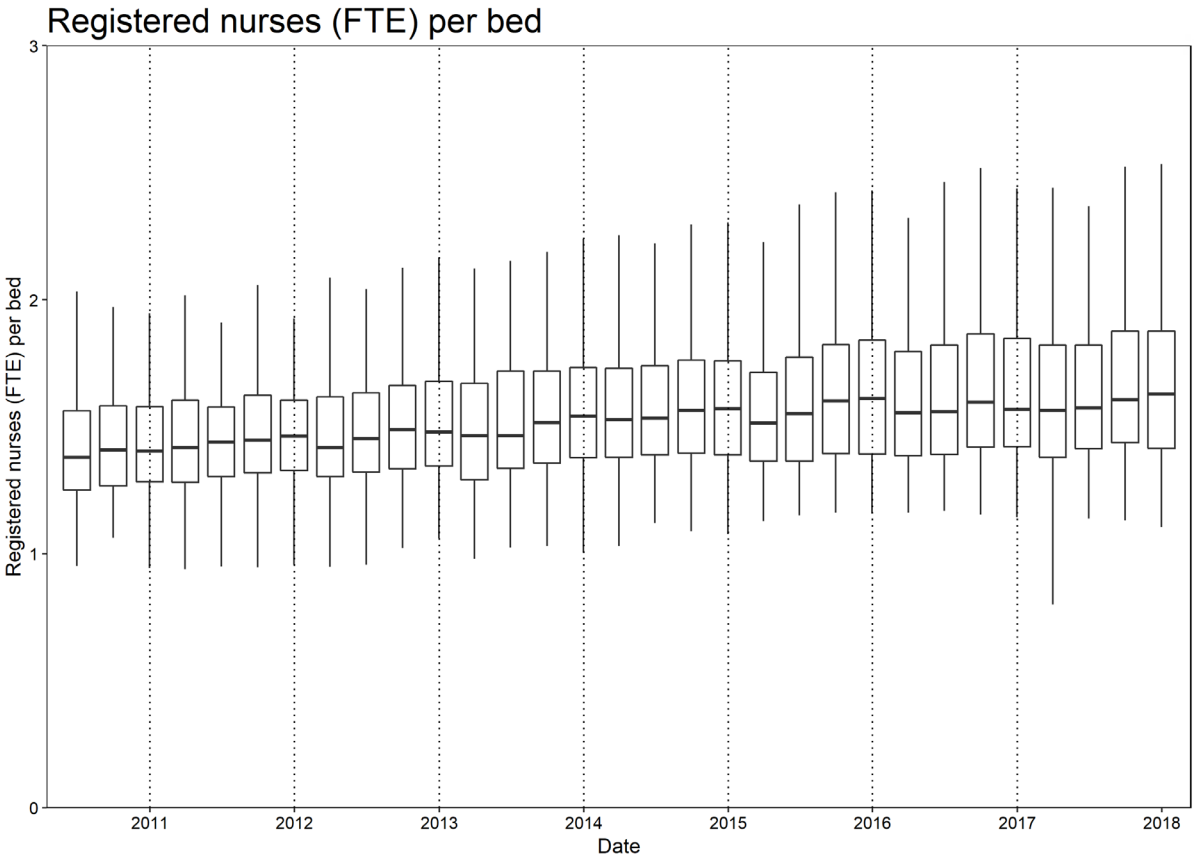
Notes:

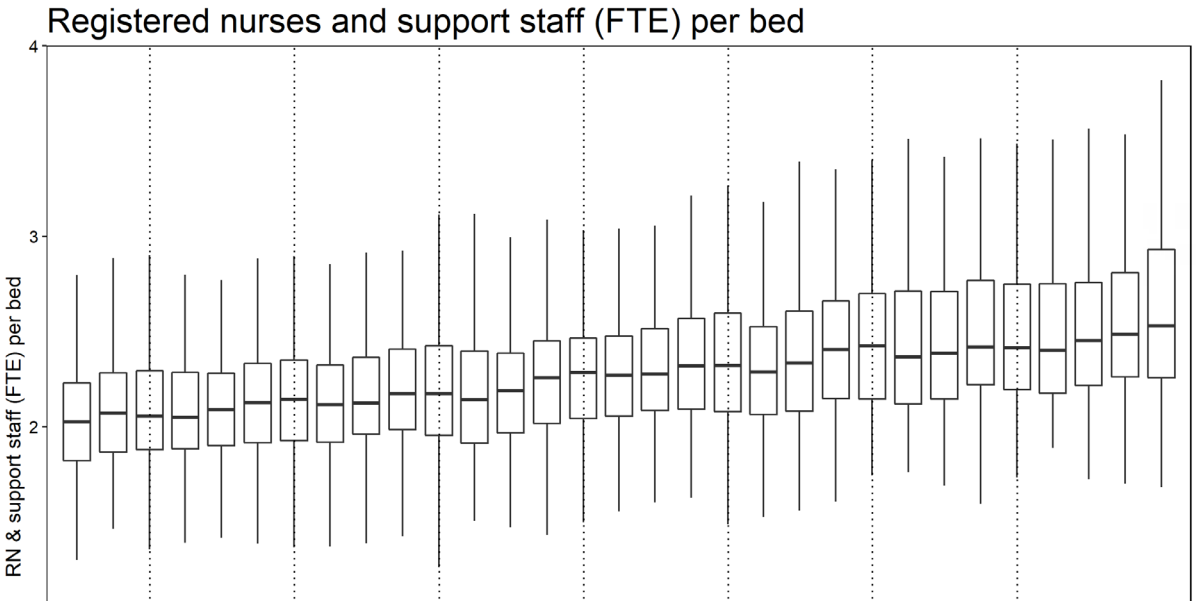
QN, MW & HV = qualified nursing, midwifery and health visiting

AEG – Acute, elderly and general settings

Appendix 10: Variation in nurse staffing

Date	Registered nurses per bed		Registered nurses &support staff per bed	
	Mean	(St Dev)	Mean	(St Dev)
Jun-2010	1.49	(0.40)	2.11	(0.46)
Sep-2010	1.52	(0.43)	2.16	(0.50)
Dec-2010	1.53	(0.44)	2.16	(0.50)
Mar-2011	1.53	(0.43)	2.17	(0.49)
Jun-2011	1.53	(0.42)	2.17	(0.49)
Sep-2011	1.56	(0.41)	2.22	(0.48)
Dec-2011	1.57	(0.43)	2.23	(0.50)
Mar-2012	1.55	(0.43)	2.21	(0.49)
Jun-2012	1.57	(0.44)	2.24	(0.50)
Sep-2012	1.58	(0.44)	2.27	(0.52)
Dec-2012	1.59	(0.45)	2.28	(0.53)
Mar-2013	1.57	(0.44)	2.25	(0.51)
Jun-2013	1.60	(0.45)	2.30	(0.53)
Sep-2013	1.63	(0.47)	2.36	(0.55)
Dec-2013	1.65	(0.46)	2.37	(0.54)
Mar-2014	1.64	(0.48)	2.38	(0.57)
Jun-2014	1.65	(0.48)	2.40	(0.58)
Sep-2014	1.66	(0.46)	2.43	(0.57)
Dec-2014	1.68	(0.49)	2.45	(0.61)
Mar-2015	1.65	(0.48)	2.42	(0.59)
Jun-2015	1.67	(0.49)	2.46	(0.59)
Sep-2015	1.69	(0.48)	2.51	(0.58)
Dec-2015	1.71	(0.49)	2.54	(0.60)
Mar-2016	1.70	(0.51)	2.52	(0.60)
Jun-2016	1.70	(0.48)	2.54	(0.58)
Sep-2016	1.72	(0.48)	2.58	(0.58)
Dec-2016	1.72	(0.52)	2.58	(0.63)
Mar-2017	1.70	(0.52)	2.56	(0.63)
Jun-2017	1.72	(0.52)	2.61	(0.64)
Sep-2017	1.75	(0.55)	2.67	(0.71)
Dec-2017	1.77	(0.60)	2.68	(0.75)


Registered nurses (FTE) per bed
Registered nurses (FTE) per bed
0
1
2
3
2011
2012
2013
2014
2015
2016
2017
2018
Date


Registered nurses and support staff (FTE) per bed
RN & support staff (FTE) per bed
2
3
4