# Study protocol

**Implementation, impact and costs of policies for safe staffing in acute trusts**

## Aims and objectives

This mixed methods study aims to identify the costs and consequences of implementing safe staffing policies following the Francis Inquiry, and uses a theory driven enquiry to explain what has shaped successful implementation. It focuses on two key elements of safe staffing policy:

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 aim to examine how safe staffing policies have been implemented, how implementation has varied, what changes in staffing levels are observed, and whether observed staffing changes are associated with changes in outcomes. The specific research objectives are to:

1. Describe how safe staffing policies have been implemented locally:

- describe processes in place and actions taken to plan staffing levels on wards and across hospitals (and associated costs)
- describe systems for monitoring and reporting staffing levels (and associated costs)
- determine how staffing levels have changed in response to guidance (and associated costs of hiring staff)
- determine how trusts assess, review and react to adequacy of staffing levels
- describe variation in implementation and action between organisations

2. Determine the associated costs of policy implementation at Trust level:

- Costs associated with processes and actions to plan staffing levels
- Costs associated with systems for monitoring and reporting staffing levels
- Costs associated with changes in staffing levels (eg. recruiting staff)
- 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:

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

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

- Reported barriers to implementing guidance (eg. local labour market)
- Trust views of safe staffing measures and changes needed to improve them.

Experienced researchers from University of Southampton and Bangor University were invited to propose a study, to build on recently commissioned HS&DR studies on safe staffing and nursing workforce planning tools. Bangor University bring considerable expertise in implementation processes and impacts, and offer a theoretical framework to understand policy implementation. Researchers at University of Southampton have decades of research experience examining the costs and effects of workforce change and deployment in healthcare, and this study builds on their work to examine nurse staffing in general, and the SNCT in particular.

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.

**Plain English summary**

**Aims:** This study aims to identify the costs and consequences of implementing safe staffing policies following the Francis Inquiry and describe factors that shape implementation.

**Background:** Having enough staff with the right skills is key to patient safety. Research demonstrates a clear link between nurse staffing levels and hospital related death. The Francis Inquiry highlighted the lack of evidence-based decisions on nurse staffing as a factor contributing to poor care and higher death rates at Mid-Staffordshire. He recommended that the research evidence be used to develop guidance on nurse staffing levels. NICE were asked to develop guidelines for different specialities, starting with acute hospital wards. They also endorsed a tool to help Trusts plan nurses staffing: the Safer Nursing Care Tool. A report from the Chief Nurse and National Quality Board set out ten expectations that Trusts

should meet to ensure adequate staffing is in place. However, we know little about the effectiveness or cost-effectiveness of approaches to plan, review and monitor staffing.

The NHS needs to know how safe staffing policies have been implemented, how this varies across the country, and the costs and consequences. Understanding what worked where and for who, can help inform future guidance provided to the NHS. In the current financial context, 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 consequences of implementing safe staffing policy is key to this.

**Design and methods:** A mixed methods study using: 1) national scoping survey; 2) analysis of existing national datasets 3) case studies using qualitative, quantitative and economic approaches assessment policy implementation and impact.

**Patient and public involvement:** at a stakeholder workshop in October involving 23 members of the public and patients, nurse staffing ranked first as a topic for research to improve care in hospitals. Two advisers to the study will be recruited from the many who expressed an interest in our consultation survey.

**Dissemination:** Findings will be disseminated to different audiences at key points during the study and on completion.

**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 own 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 impinge on the quality and safety of care provided [e.g.4, 5, 6].

The Government's response to the Francis Inquiry included several initiatives aimed at ensuring safe staffing in the NHS[7]. 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 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 [8]. 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 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 [9]. 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 are sufficient to meet patient needs safely. The guidance was accompanied by the endorsement of the Safer Nursing Care Tool (SNCT), to help Trusts review nurse staffing in adult inpatient care.

A focal point for both the NQB and NICE guidance is to ensure Trusts use a reliable system or tool to plan nurse staffing to meet patient needs, and to be able to compare achieved staffing with that planned using such systems. The SNCT is the only NICE-accredited tool, yet we know little about Trust adoption of it, or the use of alternatives. Our review for NICE found little evidence about the costs or consequences of tools used to determine staffing levels based on assessed patient need, or the extent to which different staffing policies, based on using the tools are affordable, effective or feasible [10, 11].

**Rationale**

The Francis Inquiry, Keogh Review and Berwick[1, 2, 12] reports heralded an unprecedented policy response to the challenges of ensuring safe staffing in the NHS. In their 2013 Labour Market Review, Buchan & Seccombe reported "*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"* [13].

The policies 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. The safe staffing policies were welcomed by bodies such as the Royal College of Nursing. However, the extent to which these policies have been effective is unknown.

A significant body of research has already highlighted the relationship between nurse staffing and patient safety [6, 11] – echoed in inquiry and care quality inspection reports –

but it tells us little about how best to achieve safe staffing. The review of literature we undertook for NICE found that there had no studies on the impact on patient safety and patient outcomes of using workforce planning tools such as the SNCT. The economic evidence is sparse[11]. Therefore this proposed research will address some of these gaps, examining both the costs and effects of staffing changes to inform future policy and practice.

We will address:

- the effects and costs of changing nurse staffing levels in response to recent policies
- whether using a workforce planning tool such as the SNCT lead to staffing levels that better match patient need
- describe any unintended 'knock-on' effects.

Equally important, 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. We will examine the catalysts and impediments to policy implementation of this sort, and address what has worked, for whom, and in what context? Attention to the processes and strategies for implementation have tended to neglect theory such that implementation research risks being an '*expensive version of trial and error*' [14]. In this study we will use theory to produce theoretically generalisable findings, and potentially develop theories about policy implementation.

The primary focus of the proposed research is on acute hospital NHS Trusts in England. Nevertheless the findings will have implications for safe staffing policy and practice that go beyond acute Trusts, to other organisations and care settings.

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, are effective and cost-effective mechanisms for ensuring safe staffing.

**Research plan**

This 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 will need 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.

This is a mixed methods study using: 1) national scoping survey; 2) analysis of national secondary datasets; 3) case studies involving in-depth qualitative study of implementation and quantitative economic assessment of impact.

The study focusses on NHS acute Trusts, examining adult in-patient settings in particular, as the setting to which NICE safe staffing guidance pertains. Nursing staff are the primary focus, but we will also explore how safe staffing policies have had an effect on other parts of the workforce, and on health services beyond acute inpatient hospital care.

**M1. National scoping survey (n=155)**

We will survey all 155 NHS Acute Trusts in England to gauge how policies on safe staffing have been implemented (objective 1) and to gain a 'top-line' assessment of national variation in staffing changes and implementation, and the attributed costs and consequences (objective 1, 2 and 3).

To minimise respondents' burden, data fields will be pre-populated using secondary data on features such as beds numbers, number of sites, teaching status, total WTE by staff group (e.g. via I-view). Trusts will be asked to confirm the data presented and only provide data on 'new' questions that cannot be addressed through other means. To maximise the response we will offer multiple participation routes for the survey (online, postal, and telephone). Follow-up contact and reminders will target non-respondents and we are aiming to achieve a 60% response rate. As well as providing a broad descriptive account of policy implementation, the survey will yield population characteristics, which we can use to review the characteristics of case study sites.

**M2. Review national data on nurse staffing**

Data on all NHS trusts that are published and available can provide a high-level overview of staffing changes and outcomes. For example:

- NHS Choices website – predicted staffing vs actual – how have the 'fill-rates' changed since first monitored (summer 2014)
- NHS Information Centre non-medical workforce statistics (WTE by staff group, vacancy rates, bank/agency spend)
- Staff satisfaction and morale from the annual staff survey

Examination of these data, may reveal longitudinal trends in number of posts, or vacancy levels, since the safe staffing policies were launched, and potentially offers a valuable context within which to examine the data collected from the survey of Trusts (M1) and from

the case studies (M3). It also allows us to look beyond wards in acute hospitals, to place the findings on safe staffing policy implementation into a broader NHS workforce context.

**M3. Case studies (n=4)**

Case studies will be a key component of the research, covering the process of implementation and use of tools such as the SNCT, to explore the costs and consequences of resultant staffing changes more fully, and lessons learnt about policy implementation. The case studies will involve a mix of quantitative, economic and qualitative methods, using a theory-driven realistic evaluation of policy implementation approaches. Areas of enquiry cover three main domains: policy implementation (objective 1 and 4), staffing changes and associated costs (objective 2), outcomes and associated costs (objective 3).

The commissioned HS&DR study (14/194/21) on the SNCT provides us with access to staffing data in four NHS organisations, and allows us to develop in-depth comparative case studies of policy implementation and impact. The sample thus comprises four cases: 2 general hospitals (1 large, 1 medium), a large teaching hospital, and a specialist hospital.

**Realistic evaluation of policy implementation**

Qualitative research to explore the barriers and facilitators to implementing safe staffing policy will adopt a realistic evaluation approach (objective 4). Realistic evaluation [15] is particularly relevant as it aims to develop explanatory programme theory by acknowledging the importance of context in understanding why safe staffing policy implementation has worked, for whom, how, 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 changes.

Specifically the qualitative case studies will:

- 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
- evaluate both the intended and unintended consequences of safe staffing policy implementation.

Our case study work will reflect the complexities of implementation within health organisations. We will focus on how individuals and organisational units engage with safe staffing policy, and investigate 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,
- *symbolic use*: how policy may be used to legitimatise opposition or change[16].

The work is in three phases:

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

In phase 1, we will conduct 5 semi-structured, audio-recorded interviews in each case that explore the organisational response to safe staffing policies, with a purposive sample of nursing managers (N=20). We will conclude this phase with a within-case co-production workshop to generate a deeper understanding of the contexts of safe staffing and workforce planning for a defined specialty/service. A purposive sample of up to 20 participants identified by the NHS organisation from across stakeholder constituencies will be invited to each workshop. We will ensure that four clinical staff (sampled purposively from Agenda for Change Bands 3 to 6) and two patients/members of the public with experience of the case-study Trust are also invited to attend the co-production workshops to map relevant organisational context at each of the case study sites.

These will combine a range of discussion and practical activities to illuminate the complexity of systems in which safe staffing operates. We have used this approach successfully in 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 will be used to inform further data collection activities exploring safe staffing policy implementation, and to develop an initial programme theory.

Using our theoretical territory 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' will be developed with stakeholders phase 2. We will then hold a workshop (up to three representatives from each case) to check the credibility and representativeness of initial programme theory. These data will be analysed in the same way as other data

collected during this theory evaluation phase. This allows us to further refine hypotheses for this study.

Finally, in phase 3, we will evaluate the hypotheses developed against what has happened in reality within each case, i.e. what is working (direct, conceptual and political impacts) for whom, how, and in what circumstances. This will involve:

Interviews: with approximately 15-25 stakeholders (such as ward managers, matrons, workforce representatives, executive leads for nursing, workforce and finance) within each case (N=60-100). Interviews will focus on perceptions about what is influencing policy implementation efforts, the content of which will be informed by the initial programme theory. We will also explore stakeholder perceptions of both the intended and unintended consequences of policy implementation.

*Documentary evidence:* related to the both the implementation and the context of implementation (e.g. policies, minutes of meetings, local/national guidance, research/development/QI papers, newspaper stories, and reports). These will provide information to further contextualise findings, provide insight into influences of policy implementation and help explanation building.

Analysis will focus on developing and refining the relationships between mechanisms and context, and determining their impact on outcomes. Each case is regarded as a 'whole study' in which convergent evidence is sought and then considered across multiple cases. Pattern matching logic, based on explanation-building, will be used, to allow for an iterative process of analysis across sites and will enable an explanation about research implementation to emerge over time. Analysis will initially be conducted within sites and then to enable conclusions to be drawn for the study as a whole, findings will be summarised across the four cases.

**Quantitative and economic analysis of policy implementation**

We will develop a comprehensive description of the resource implications for each of the four Trusts in planning and providing safe nursing care. We will identify financial costs to the organisation in terms of the costs for additional staff requirement (as identified by the staffing tool), costs of administration and costs of technical support for implementation of the staff planning process. We will also examine the impact and costs of changes in patent and staff outcomes. We will collect ward and Trust level data to capture 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

**Action: using SNCT, monitoring and reporting staffing**

For each case study Trust, we will develop a detailed description of resource use associated with using the SNCT and the process of planning, reviewing and monitoring staffing.

This will include costing resources associated with collecting data required for the tool, but will also extend to consider all activities within the Trust that will be affected by the workforce planning cycle. Clear distinctions will be between one-off (associated with the initial implementation of the workforce planning program, which may include IT investments, additional clerical/ technical support or staff training) and on-going costs incurred throughout each planning cycle.

This will involve discussion with key informants within the Trust including: 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. We will use a mixture of self-report and direct observation to assess the time required for identified tasks (such as collecting dependency and patient-flow data). Where possible we will use prospective data collection for measuring resource use and on-going costs throughout the planning cycle, but may be dependent on recall and Trust documentation for costing the project initiation.

Much of the costing of the Trust-level implications of the safe staffing initiative will be assessed by 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. We will develop detailed resource use descriptions/ costings for a single instance of these report cycles and apply these to each instance.

A challenge is 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 adoption of safe staffing policy, we will use 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.

**Impact: Changes in staffing levels**

The University of Southampton HS&DR study provides a framework for data collation and analysis that allows us to examine the impact on staffing levels (predicted, and actual) of using SNCT in hospital Trusts. This enables the associated costs to be determined. We add to that by collecting a wider range of ward and Trust level data on workforce (including longer time series on ward staffing, skill-mix, staff sickness absence and quality indicators, such as the NHS Thermometer, for periods that pre-date the HS&DR project), 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 will 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)
- recruitment of staff

These data will be used to provide descriptive statistics on ward-level staffing and to explore variation over time, looking at trends throughout the year or variation by day of the week. We will also to generate measures of staffing change that can be examined in relation to observed changes in outcomes (described below).

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 will use the case study 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.

**Effect on patients and other outcomes & associated costs**

Three types of outcome measure will be examined:

- Patient outcomes such as falls, pressure ulcers, hospital acquired infections, catheter acquired urinary tract infections, deep vein thromboses, as reported in the ‘Safety Thermometer’ (examined at ward level)
- Staffing outcomes such as staff satisfaction (e.g. as identified through the staff attitude survey), sickness absence, staff turnover (at ward and Trust level)

- System/Trust changes – observable changes in net unit costs attributed to staffing changes (Trust level)

Quantitative analysis of changes in staffing levels over time will provide purely descriptive data (mean and median, with appropriate measures of variation) at identified points across the time series. These will be reported at both ward and Trust-level. Multivariate analyses, using linear mixed models to account for the hierarchical nature of the data (wards within Trusts) will be undertaken to asses long-term or secular trends in staffing levels, particularly related to shocks (such as the Francis Inquiry) or policy guidance. The relationship between changes in staffing level and quality indicators will be undertaken using similar techniques, estimating baseline values for indicators in wards with the highest staffing levels and deriving the differences observed between the baseline and those values observed in less well-staffed wards, over time.

## Patient and Public Involvement - summary

A workshop hosted by the researchers in October 2016, with patients & public (23) and NHS staff (16) identified nurse staffing levels as a priority for future research. The current study was commissioned following an invitation from the Department of Health, and did not have any patient or public involvement (PPI) in the design stage.

This is a national, high-profile study and its findings will have implications across the NHS. The research looks at whether policies developed after the Francis Inquiry to try and ensure hospitals are staffed safely, have been implemented by acute Trusts in England. The research also looks at what factors have made a difference to how well policies have been implemented, as well as what effect the policies have had: on staffing levels, how hospitals plan their nurse staffing levels, and on costs and quality of care provided, and its impact on patients. The policies were introduced by the government in response to the organisation and system failures identified in the Francis Inquiry Report. The study will include patient input through focus groups run by the researchers in Bangor, as part of the evaluation into what has worked where, for whom, and in what context. It should not be under-estimated how important the theme of the research study will be to the general public. The Francis report was triggered by staff and patient whistleblowing and concern over safe practice at the Mid Staffordshire Hospitals Trust. The public will be keen to know that the hospitals are staffed safely and they and their loved ones are being looked after in a safe and caring manner.

Ruth Lutz is a nurse of considerable experience, who qualified in 2008 and worked for 5 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 currently is in charge of the Ward. Ruth has a particular interest in safe staffing and has worked with researchers on other research studies.

Francesca Lambert has experience of PPI in 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 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. She has also been a recent in-patient in an acute NHS Trust on several occasions, via A&E and GP referral. Francesca is currently Project Co-ordinator for the University of Southampton for a Masters in Clinical and Health Research and a Safer Nursing Care Tool research study. Francesca also guest lectures on several Masters Courses in Patient and Public Involvement in Research (and the NHS) at the University of Southampton.

Both our PPI representatives bring unique insights to the Study 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. Francesca and Ruth have links to patient groups and both will work on a dissemination plan with the Research Team, and the Funder to ensure the results of the Study are shared with the general public in a productive and lay friendly way.

**Coordination & Data Synthesis**

Coordination (described in Section10.) between the leads in each Trust, the researchers, and the work streams will be key to undertaking the research, synthesising the findings to provide an overall picture and dissemination. At the end of the first year researchers and Trusts leads will meet for a full-day Integrative Workshop.

## Timeline

PRP Safe Staffing Project Plan

| X = milestone | 2016 | | | | | | | 2017 | | | | | | | | | | | 2018 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| **INFRASTRCUTURE** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Contract / ready to start* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Collaboration agreement* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ethical approval* | xxxx | xxxx | xxxx | xxxx | xxxx | ✓ | | | | | | | | | | | | | | | | | | | | |
| *HRA/ R&D approvals* | | xxxx | xxxx | xxxx | xxxx | xxxx | | | | | | | | | | | | | | | | | | | | |
| **START: 1st June (assuming contract in place)** | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| **Start up meting – 10th June** | | ✓ | | | | | | | | | | | | | | | | | | | | | | | | |
| **COMMUNICATIONS & MEETINGS** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Jane B & Jane/Hannah catch up – weekly* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *UoS Operational research team meetings - every two weeks* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *UoS & Bangor Operational research team meetings – monthly* | | X | | | | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | |
| *Strategic research meetings (key points approx. every 3 months)* | | X | | | | X | | X | | X | | X | | X | | | X | | | | | | | | | |
| *Project advisory group meetings (every 4-5 months)* | | | | | | X | | | | | X | | | | X | | | | X | | | | | X | | |
| **Cross cutting activity** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Policy mapping/timeline* | | | | | xxxx | xxxx | xxxx | xxx | | | | | | | | | | | | | | | | | | |
| Integrative Workshop – NOV 2017 | | | | | | | | | | | | | | | | | | | X | | | | | | | |
| **M1. National Survey of Trusts (n=155) [JEB]** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| *Design questionnaire* | | | | xxxx | xxxx | xxxx | | | | | | | | | | | | | | | | | | | | |
| *Initial design review/testing* | | | | | | X | xxxx | | | | | | | | | | | | | | | | | | | |
| *Formatting/online set-up* | | | | | | | x | xx | | | | | | | | | | | | | | | | | | |
| *Obtain sample (eg. Binely's and/or NHS Digital)* | | | | | | xx | xx | | | | | | | | | | | | | | | | | | | |
| *Pilot/Test -* | | | | | | | | xxxx | xxxx | | | | | | | | | | | | | | | | | |
| *Refine survey* | | | | | | | | | xx | | | | | | | | | | | | | | | | | |
| *Finalise online design/print layout* | | | | | | | | | xx | | | | | | | | | | | | | | | | | |
| *Email/letter to all DoNS – info about the study (pre-launch) late Jan* | | | | | | | | | x | | | | | | | | | | | | | | | | | |
| ***Survey launch (online first) – early Feb*** | | | | | | | | | | X | | | | | | | | | | | | | | | | |
| *Email reminders (x3)* | | | | | | | | | | xxx | | | | | | | | | | | | | | | | |
| ***Postal survey (3 – 4 weeks after launch)*** | | | | | | | | | | | X | | | | | | | | | | | | | | | |
| *Reminders ( x 3)* | | | | | | | | | | | xx | | | | | | | | | | | | | | | |
| *Telephone follow-ups/interviews (6-9 weeks after launch)* | | | | | | | | | | | | xxx | | | | | | | | | | | | | | |
| *Data preparation* | | | | | | | | | | xxxx | xxxx | xxxx | xxxx | | | | | | | | | | | | | |
| *Analysis* | | | | | | | | | | | | | xx | | | | | | | | | | | | | |
| *Write up/reporting* | | | | | | | | | | | | | xxx | xx | | | | | | | | | | | | |
| *Report findings to PRP/Advisory Group* | | | | | | | | | | | | | | | x | | | | | | | | | | | |
| *Review/revise* | | | | | | | | | | | | | | | xx | | | | | | | | | | | |
| *Wider dissemination of survey findings* | | | | | | | | | | | | | | | | | | xxxx | xx | | | | | | | |
| **M2. National secondary data [PG]** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| *Identify reports/data sources* | | | | xxxx | xxxx | | | | | | | | | | | | | | | | | | | | | |
| *Acquire data, create linked datasets (and update)* | | | | | | xxxx | xxxx | xxxx | | | | | | | | | xxxx | xxxx | | | | | | | | |
| *Analysis* | | | | | | | | xxxx | xxxx | xxxx | xxxx | | | | | | | | xxxx | xxxx | xxxx | | | | | |
| *Reporting (internally in year 1)* | | | | | | | | | | | | xxxx | | | | | | | | xxxx | xxxx | | | | | |
| **INTERIM REPORT – May 2017** | | | | | | | | | | | | | X | | | | | | | | | | | | | |
| **M3. Case studies (n= 4)** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| *Communication/engagement with Trusts [JEB]* | x | xxxx | xxxx | xxxx | x | | x | | x | | x | | x | | x | | x | | x | | x | | x | | x | |
| *Start up meetings with each Trust* | | | | | | xx | xx | x | x | | | | | | | | | | | | | | | | | |
| **a) Qualitative in-depth case study [CB]** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| *Liaise with Trust – preparation pre data collection* | | | | | | | xxxx | xxxx | | | | | | | | | | | | | | | | | | |
| *Phase 1: Interviews & co-production workshops* | | | | | | | | | xxxx | xxxx | xxxx | xxxx | | | | | | | | | | | | | | |
| *Phase 2: Programme theory development; cross-case event* | | | | | | | | | | | | xxxx | xxxx | xxxx | | | | | | | | | | | | |
| *Phase 3: Programme theory evaluation interviews* | | | | | | | | | | | | | | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | | | | | | |
| *Analysis* | | | | | | | | | | | | | | | | | | | xxxx | xxxx | xxxx | xxxx | xxxx | | | |
| *Knowledge mobilisation event* | | | | | | | | | | | | | | | | | | | | | | | | X | | |
| **b) Quantitative/Economic [JJ]** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| *Liaise with Trust – preparation pre data collection* | | | | | | | xxxx | xxxx | | | | | | | | | | | | | | | | | | |
| *Map implementation activity/policy response- interviews* | | | | | | | | | xxxx | xxxx | xxxx | xxxx | | | | | | | | | | | | | | |
| *Acquire data: HR, e-roster, SNCT, quality indicators, outcomes* | | | | | | | | | | | | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | | | | | | | | |
| *Analysis* | | | | | | | | | | | | | | | | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | | |
| **FINAL REPORT – 25th May 2018** | | | | | | | | | | | | | | | | | | | | | | | | | X | |

**Research Management**

The ***Project Management Group*** comprising the Chief Investigator, co-investigators and research fellow, and two PPI representatives, will be responsible for managing the project, and meeting milestones. This group will be chaired by JB and will meet via teleconference monthly to review progress against milestones, plan work, discuss methods/analyses, keep a risk register and anticipate/resolve any problems. A ***Project Advisory Group*** will meet every six months to advise on policy and organisational engagement, the development and progress of research plans, dissemination and implementation.

**Projected outputs and dissemination**

We will use a range of dissemination approaches to target different audiences. We will produce a final research report detailing all the work undertaken and including supporting technical appendices, an abstract and an executive summary focused on results/findings and suitable for use separately from the report as a briefing for NHS managers and policy makers.

We will also prepare a set of 10 PowerPoint slides covering the main findings from the research, which can be used by the research team or others. The slides will be made publicly available alongside the report, accompanied where possible by other publications/outputs.

We will submit abstracts for oral presentation for at least one national conference and one international conference focussing on nursing workforce / patient safety. We will disseminate summaries of findings and implications via health and nursing journals such as the HSJ, Nursing Standard and Nursing Times, and via the NIHR dissemination centre and NHS employers and via networks of key stakeholders. If there is interest, we could also present findings to the Parliamentary and Scientific Committee (which recently discussed Patient Safety). Our PPI and service representatives on the project steering group will guide us in developing a dissemination strategy for these audiences as findings emerge. We will work closely with the media team and ensure that members of the project team are given full support and training in dealing with media enquiries.

We will prepare at least two academic papers and publish these with ‘open access’ in high impact journals. The focus of these will be on 1) The costs and consequences of policies aimed at ensuring safe staffing 2) Lessons learnt on implementation of policy in the NHS.

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

**Relevant expertise and experience**

The team combines strengths in health services research, workforce, NHS workforce management and health economics and implementation, and provides the expertise to deliver this project, which draws on a unique opportunity of linking to two funded studies on safe staffing in the NHS.

Researchers at University of Southampton have decades of research experience examining the costs and effects of workforce change and deployment in healthcare, and this work builds on their work to examine nurse staffing in general, and the SNCT in particular. Co-PI JEB is an expert on nurse staffing and large scale workforce surveys. She will provide day-to-day leadership and oversight of the project. The other Co-PI (PG) has extensive experience of managing large research teams undertaking complex secondary data analysis (including multi-level modelling) in the field of nurse staffing. PG and JEB were leads in the "RN4CAST" study, one of the largest nursing workforce studies ever undertaken and are working on the HS&DR funded study of nurse staffing and missed vital signs observations, which brings new methods to the field. JJ is an experienced senior health economist with considerable experience in undertaking economic modelling for NICE technology appraisals. This core Southampton team recently undertook evidence reviews for the NICE safe staffing guidance.

University of Bangor offer a theoretical framework to understand how workforce-planning tools are used and how this is happening in practice, and have the skills required to deliver detailed qualitative case study research on policy implementation.
CB has experience of realist theory evaluation, is the PI in the NIHR HS&DR 14/194/20 study on nursing workforce planning tools. JRM and CB are research programme directors and have worked together successfully for a number of years including on projects related to realist enquiry.

JRM is an internationally recognised health services and implementation researcher having conducted theory development research, trials and process evaluations, including realist evaluation (funded by NIHR, EUFP7 and CIHR). She has successfully delivered numerous projects on time and within budget.

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