

# Using the Safer Nursing Care Tool to identify nurse staffing requirements in hospitals

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<b>Registration date</b> 08/06/2016	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 04/07/2024	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Guidance on "safe staffing for nursing in adult inpatient wards in acute hospitals" from the National Institute for Health and Care Excellence (NICE) (the organisation that issues standards for the NHS), recommends a systematic approach to determining the staffing requirements of hospital wards. The recommended approach to setting the number of nurses employed in order to meet patient needs 24 hours per day, seven days per week, is based on one toolkit endorsed by NICE used to assess average patient needs on a particular ward: the Safer Nursing Care Tool (SNCT). This tool is widely used within the NHS. In this study on acute medical wards in 4 hospitals the aim is to determine the feasibility, likely costs and consequences of using the SNCT to set safe nurse staff levels.

### Who can participate?

Wards providing inpatient care for 7 days per week

### What does the study involve?

The SNCT tool is used to assess daily staffing requirements for all patients in each ward over a period of 1 year. In a sub-sample multiple daily observations are undertaken periodically in order to assess variation throughout the day. For each shift the nurse in charge is asked to complete a brief report of perceived staffing adequacy, reports of significant delayed or missed care, estimated staffing requirement (professional judgment), and reasons for any mismatch between available and required staffing. These nurse-reported assessments of staffing adequacy provide a way to assess the SNCT accuracy. In order to assess the validity of SNCT staffing predictions, the perception of staffing adequacy is measured using a 'micro survey' for the nurse in charge on each shift. The nurse in charge reports staffing adequacy based on three items: ("on this shift, do you have enough nurses to provide quality patient care"); reports of significant delayed or missed care ("on this shift was necessary nursing care left undone because staff lacked time to complete it"); and estimated staffing requirement (estimated number of RNs and HCSW required).

### What are the possible benefits and risks of participating?

As this study only involves the use of data there are no risks to individuals from changes in care. Daily SNCT assessments on patients are undertaken by nurses in charge of the shift. Using the

supporting material developed for the SNCT, all nurses making assessments are trained in the use of the tool. All data gathered (SNCT and staffing adequacy assessments) is anonymous and no personal nurse or patient identifiers are transferred to the research team.

Where is the study run from?

1. Poole Hospital NHS Foundation Trust (UK)
2. Portsmouth Hospitals NHS Trust (UK)
3. Royal Marsden NHS Foundation Trust (UK)
4. University Hospital Southampton NHS Foundation Trust (UK)

When is the study starting and how long is it expected to run for?  
May 2016 to October 2018

Who is funding the study?  
Health Services and Delivery Research Programme (UK)

Who is the main contact?  
Prof. Peter Griffiths  
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## Contact information

**Type(s)**  
Scientific

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## Additional identifiers

**Protocol serial number**  
HS&DR 14/194/21

## Study information

**Scientific Title**

Identifying nurse staffing requirements using the Safer Nursing Care Tool: modelling the costs and consequences of real world application to address variation in patient need on hospital wards

## **Acronym**

INSTRUMENT (Identifying Nurse STaffing ReqUIreMENTS in hospiTals)

## **Study objectives**

NICE guidance “safe staffing for nursing in adult inpatient wards in acute hospitals” recommends a systematic approach to determining the staffing requirements of hospital wards. The recommended approach to setting the number of nurses employed in order to meet patient needs 24 hours per day, seven days per week, is based on the use of an endorsed toolkit to assess average patient needs on a particular ward. The only toolkit currently endorsed by NICE, which is widely used within the NHS, is the Safer Nursing Care Tool (SNCT). In this study we aim to determine the feasibility, likely costs and consequences of using the SNCT to setting safe nurse staff levels.

Translating patient dependency and acuity into staffing requirements, the SNCT sets the ward establishment based upon staff required to meet the average care requirements, with allowances for sick leave, holidays and study leave. However, we do not know whether this approach gives an efficient or effective solution to ward staffing, given fluctuations in patient need. It is unclear how often the average staffing levels match daily requirements or how often wards are over or under staffed when these averages are used to plan staffing. Modelling studies suggest that staffing based on average requirements can lead to critical shortfalls in the face of variable need. International studies indicate considerable daily variation in workload intensity for nurses and empirical evidence suggests that substantial mismatches between workload and available staff are common even where formal staffing methodologies are in use. However, we have no equivalent data from the UK to determine the efficiency or efficacy of the SNCT tool to set the ward establishment based on patient need.

## **Ethics approval required**

Old ethics approval format

## **Ethics approval(s)**

University of Southampton Ethics Committee, 18/04/2016, ethics ID:18809

## **Study design**

Observational study

## **Primary study design**

Observational

## **Study type(s)**

Other

## **Health condition(s) or problem(s) studied**

Adult inpatient general wards in four acute care NHS hospital trusts

## **Interventions**

In this study we will use the SNCT tool to assess acuity/dependency for all patients in each ward daily, over a period of 1 year. In a sub-sample we will undertake multiple daily observations periodically in order to assess variation throughout the day. For each shift we will also ask the nurse in charge to complete a brief report of perceived staffing adequacy based on a single item from our RN4CAST survey, reports of significant delayed or missed care, estimated staffing requirement (professional judgement), and reasons for any mismatch between available and required staffing. These nurse-reported assessments of staffing adequacy provide an external criteria for assessing SNCT accuracy and have been validated by relationships with patient care outcomes.

SNCT scores are designed to identify the required nursing establishment (employed workforce in WTE). From this, the daily staffing requirement can be inferred in nursing hours per day (NHPD). We will compare the establishment and daily NHPD as predicted using the SNCT scores with the actual establishment and staffing deployed on the ward. In order to assess whether the tool accurately predicts required staffing we will assess associations between deviations from planned staffing and measures of staffing adequacy. Using mathematical models we will attempt to identify if there is an optimal approach to planning ward staffing using the tool and whether this varies across settings.

Using a range of criteria, we will determine the proportion of days that wards are critically under/over staffed if staffing/establishment were based on a range of policies for using the SNCT results. The policies to be considered will include:

1. Setting staffing to meet the mean patient acuity/dependency determined from 20 days observation (the SNCT standard approach)
2. Staffing to meet the maximum commonly observed acuity/dependency observed during baseline observation (maximum staffing approach)
3. A flexible staffing approach with ward establishments set to meet the minimum commonly observed dependency from baseline (and deficits filled by temporary staffing)
4. Other staffing policies, as determined by an expert/patient and public reference group

We will assess the extent to which adding allowances for factors not incorporated into the tool (e.g. variability in admissions/discharge rates) changes daily staffing requirements.

Critical understaffing will be defined as 25% or 8 nursing hours per shift below the required level or a patient to nurse ratio exceeding 8:1 (whichever is reached first), as described in NICE safe staffing guidance.

Using evidence on potential adverse outcomes associated with understaffing derived from robust observational studies, we will create dynamic models of the costs and consequences of the staffing policies for meeting the fluctuations in demand considering:

1. Establishment costs
2. Availability and costs of bank/agency staff to be employed to fill critical staffing deficits
3. Opportunities to redeploy staff from overstaffed wards to understaffed wards
4. Relative efficiency of permanent vs temporary staff
5. Adverse outcomes associated with residual staffing variation

In a sub-sample we will undertake multiple daily observations (three times per day over one week) in order to assess within day variation measures.

In order to assess the validity of SNCT staffing predictions, we will measure the perception of staffing adequacy using a 'micro survey' for the nurse in charge on each shift to assess professional judgement. Professional judgement remains a leading alternative approach to determining nurse staffing requirements and is seen as an essential adjunct to measurement systems, as recognised by NICE. The nurse in charge will report staffing adequacy, based on a single item of the RN4CAST survey ("on this shift, do you have enough nurses to provide quality

patient care"); reports of significant delayed or missed care ("on this shift was necessary nursing care left undone because staff lacked time to complete it"); and estimated staffing requirement (estimated number of RNs and HCSW required). These nurse-reported assessments of staffing adequacy provide an external criteria for assessing SNCT accuracy and have been validated by relationships with patient care outcomes.

### **Intervention Type**

Other

### **Primary outcome(s)**

1. Associations between deviations from required staffing (measured by the SNCT) and measures of staffing adequacy (nurse-reported)

### **Key secondary outcome(s)**

1. Perception of staffing adequacy  
2. Proportion of days that wards are critically under/over staffed based on 4 policies for using SNCT results (SNCT standard approach; maximum staffing approach; flexible staffing approach; policies established by expert patient/public reference groups)

### **Completion date**

01/10/2018

## **Eligibility**

### **Key inclusion criteria**

1. Wards providing inpatient care for 7 days per week  
2. Adult somatic health population/medical or surgical  
3. Appropriate for SNCT according to the SNCT resource pack

### **Participant type(s)**

Other

### **Healthy volunteers allowed**

No

### **Age group**

Adult

### **Sex**

All

### **Total final enrolment**

81

### **Key exclusion criteria**

1. Wards that are assessed as providing highly specialised services (e.g. maternity, paediatric units) with atypical staffing requirements (as determined by local chief investigator, with documented reason)  
2. Day case, weekday wards  
3. ICU

**Date of first enrolment**

01/01/2017

**Date of final enrolment**

31/12/2017

## **Locations**

**Countries of recruitment**

United Kingdom

England

**Study participating centre****Poole Hospital NHS Foundation Trust**

Longfleet Road

Poole, Dorset

United Kingdom

BH15 2JB

**Study participating centre****Portsmouth Hospitals NHS Trust**

Southwick Hill Road

Cosham

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PO6 3LY

**Study participating centre****Royal Marsden NHS Foundation Trust**

Fulham Road

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**Study participating centre****University Hospital Southampton NHS Foundation Trust**

Tremona Road

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United Kingdom

SO16 6YD

# Sponsor information

## Organisation

The University of Southampton (UK)

## ROR

<https://ror.org/01ryk1543>

# Funder(s)

## Funder type

Government

## Funder Name

Health Services and Delivery Research Programme

## Alternative Name(s)

Health Services and Delivery Research (HS&DR) Programme, NIHR Health Services and Delivery Research (HS&DR) Programme, NIHR Health Services and Delivery Research Programme, HS&DR Programme, HS&DR

## Funding Body Type

Government organisation

## Funding Body Subtype

National government

## Location

United Kingdom

# Results and Publications

## Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are not expected to be made available

## IPD sharing plan summary

Not expected to be made available

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	17/05/2020	22/06/2020	Yes	No

<a href="#">Results article</a>	results	30/06/2020	06/07/2020	Yes	No
<a href="#">Results article</a>	results	01/12/2020	28/07/2020	Yes	No
<a href="#">Results article</a>		15/05/2020	04/07/2024	Yes	No
<a href="#">Basic results</a>		02/10/2019	03/10/2019	No	No
<a href="#">Other publications</a>	literature review	01/09/2019	03/10/2019	Yes	No
<a href="#">Other publications</a>	simulation and economic modelling results	11/02/2021	08/03/2021	Yes	No
<a href="#">Protocol file</a>	version 1	13/01/2016	12/08/2022	No	No