Appendix 1 – Information sheet used to stratify the data

The information you give below will be used to stratify the data collected and to feed back to you in the future regarding the study if you so wish. Please take time to fill it in accurately. If you have any queries please ask. Your name/ward/email will NOT be used in the written dissertation – it is for the researcher's notes and for future contact. Thank you.

Name	
Ward	
Band	□2 □3 □4 □5 □6 □7 □8
Experience (years/months or year of registration)	
Gender	□Male □Female □Other (please specify) …… □Prefer not to say
Would you like to receive an abstract of the study upon its completion?	□Yes □No
Email	

Abstracts will be sent once the dissertation is submitted and feedback received. This will be during the summer months of 2014.

Appendix 2 – Email showing ethical approval from the School of Health Sciences have been gained

From: Johnson Stacy <ntzsdj@exmail.nottingham.ac.uk>
Date: 4 November 2013 07:48:13 GMT
To: Timmons Stephen <ntzst1@exmail.nottingham.ac.uk>
Subject: Re: Katie burns

Yes she can go ahead

----- Original Message -----
From: Timmons Stephen
Sent: Monday, November 04, 2013 07:14 AM GMT Standard Time
To: Johnson Stacy
Subject: Katie burns

Is her consent form and information sheet ok ?

Thanks

Appendix 3 – Letter of permission draft for ward managers and matrons

[Name of Directorate and NHS Trust]

Katie Jayne Burns

Student Nurse

University of Nottingham, School of Health Sciences

Dear Katie,

Re: Undergraduate Master's Degree research proposal

Thank you for the information pack regarding your proposed study "Why do nurses not escalate patients when the early warning score indicates to do so?"

I hereby give my consent for you to undertake this research within the *[name of directorate]*. I hope that the material you generate will be shared within the directorate to support good practice in the future.

Best wishes with this project,

Yours sincerely

[Name of Manager or Matron]

Appendix 4 – Ethical approval submitted

UNIVERSITY OF NOTTINGHAM

MEDICAL SCHOOL ETHICS COMMITTEE

In completing this form please refer to the attached Notes of Guidance

Application for approval of all studies involving **Healthy Human Volunteers only conducted by Staff and Students of the University of Nottingham**

Please complete in typewritten form one application form, consent form (template attached) and subject's information sheet (template attached), one detailed study proposal and supply 1 one signed hard copy and e-mail 1 copy of as attachments.

1 Title of Project:

"Why do nurses not escalate patients when the early warning score indicates to do so?"

2 Names, Position, Department, institution and Qualifications of Investigators:

Katie Burns – Student (MSc Nursing Science)

3 Type of Project: (Please tick appropriate box)

a) Classroom procedures: [x]	[ ]	b) Student project	
c) Development of technique:	[ ]	d) Assessment of new drug or formulation:*	[ ]
e) Pilot Study: [ ]	[ ]	f) Questionnaire-based study or community survey	
g) Commercially funded*	[ ]	h) Other	[ ]

**In line with charges being imposed by other Ethics Committees a charge of £250 will be imposed on all commercially funded projects. An additional charge of £100 may be imposed for resubmission or for re-assessing amendments to the original proposal where full committee approval is required and £50 where only chairman's approval is necessary. There shall be no charge for research funded by the NHS, by other government funding sources such as the Research Councils, by charities and by educational grant giving bodies.*

4a Summary of Experimental Protocol - Please give details below (no longer than this side of A4) under the following headings: - 1. Background. 2. Aims (to include hypothesis to be tested), 3. Experimental protocol and methods, 4. Measurable end points/statistical power of the study. 5. Key references. This section must be completed. This is in addition to a more detailed project proposal/protocol which should be attached to this application. Please use 10pt typeface.

Background

Suboptimal care regarding patients who require more intensive treatment is associated with poor outcome (McGloin et al 1999). This was part of the reasoning behind setting up critical care outreach teams and early warning score systems across the UK (Department of Health 2000). introduction of early warning score systems has been shown in some audits in other parts of the country to significantly improve patient outcomes (Moon et al 2011, McGinley and Pearse 2012).

It is not the case that early warning scores are always used appropriately to escalate when needed. In a recent audit of early warning score systems used in Nottingham University Hospitals it was found that overall, EWS escalation was only appropriate in 16.3% of cases (NUH 2013). What we do not know from this data is why compliance is so low.

Qualitative research looking at the reasons why nurses do not use the systems has been conducted, but the number of studies is small and they are often conducted in specialist hospitals or elsewhere other than the UK. Much evidence in this country shows that nurses are unsure when and how to act (Pattinson and Estham 2011, Franklin and Matthew 1994, Lee et al 1995, Daffurn et al 1994, Cioffi 2000).

Aims

- To gain knowledge on what nurses think about using EWS systems in NUH.
- To gain understanding of why nurses do not use early warning escalation systems appropriately.

Design/method

To understand why nurses do not escalate EWS scores effectively semi-structured interviews are an ideal choice of design. Participants will be nurses of all bands (including auxiliary nurses) so as to include all those staff who regularly take observations from patients and calculate an early warning score for them.

I will ask a broad opening question, proceeding onto other questions if the answer proves quite short and ask for elaboration on points made where I see fit. I would expect each interview to last around 30 minutes (based on a previous study by Pattinson and Eastham 2011).

Opening question:

- "Tell me about your experience of using early warning scores as a tool in NUH"

Following questions (if needed):

- "Do you find EWS useful in recognising deteriorating or critically ill patients?"
- "Do you find EWS useful to your work? (if so, why?, if not, why not?)"
- "How do you use the early warning system in relation to your other nursing skills?"

Measurable end points/statistical power

The audio data will be first be transcribed using the University of Nottingham transcription service. I will aim to make the transcription as accurate as possible, requesting that pauses, afflictions and filler words (such as “um”) be included. To analyse the data in as objective manner as possible, the transcript will be coded. Small parts of the transcript will each be assigned a code. These codes can then be grouped to form a diagram, grouping together themes and similar pieces of code.

References

Cioffi, J (2000) Nurses experiences of making decisions to call emergency assistance to their patients. **Journal of Advanced Nursing** 32: pp. 108-191

Daffurn, K., Lee, A., Hillman, K., Bishop, G. and Bauman, A (1994) Do nurses know when to summon emergency assistance? **Intensive and Critical Care nursing** 10: 115-120

Department of Health (DOH) (2000) **Comprehensive critical care- a review of adult critical care services.** London: DOH

Franklin, C and Mathew, J (1994) Developing strategies to prevent in hospital cardiac arrest: analysing responses of physicians and nurses in the hours before the event. **Critical care medicine** 22: pp. 244-247

Lee, A., Bishop, G., Hillman, K and Daffurn, K (1995) The medical emergency team. **Anaesthesia and intensive care** 23: pp. 183-186

McGinley, A. and Pearse, R (2012) A National early warning score for acutely ill patients. **British medical journal** 345: pp. Unknown

McGloin, H., Adam, S. and Singer, M. (1999) Unexpected deaths and referrals to intensive care of patients on general wards. Are some cases potentially avoidable? **Journal of the Royal College of Physicians of London** 33: pp. 255-259

Moon, A., Cosgrove, J., Lea, D., Fairs, A. and Cressey, D. (2011) An eight year audit before and after the introduction of modified early warning score (MEWS) charts, of patients admitted to a tertiary referral intensive care unit after CPR. **Resuscitation** 82: pp. 150-154

Nottingham University Hospitals (NUH) (2013) **EWS Audit Report Feb 13 Update**. Unpublished

Pattinson, N and Eastham, E. (2011) Critical care outreach referrals: a mixed method investigative study of outcomes and experiences**. Nursing in critical care** 17(2): pp. 71-82

4b Lay Summary of project (in lay words):(maximum 200 words) ***Summaries which include***

language which is too technical for lay members of the Committee will be rejected.

Early warning scores (EWS) are used nationwide as a way of identifying those patients who may have deteriorating health or be about to experience a cardiac or respiratory arrest. In Nottingham University Hospitals trust it should be reported to a doctor if a patient scores 3 or more points using this system. Scores are based on clinical observations such as temperature or blood pressure, if these observations are outside of normal limits a score will be given between 1 and 3 for each individual observation, these are then added up to give the final score.

Many studies have shown that even though these abnormal observations often precede a cardiac or respiratory arrest, many nurses (who are most likely to calculate a patient's score) do not escalate these patients to a doctor or the critical care outreach team. The aim of my study will be to find out why this might be by interviewing nursing staff (including auxiliary nurses and sisters as well as staff nurses). I will ask these nurses about their experiences of using EWS to hopefully gain some insight.

5 Duration of Study: 4 months

6 Location of study: University of Nottingham, School of Nursing

Proposed starting date: 01/09/2012 Proposed finishing date: 30/12/2013

7 Description and number of volunteers to be studied:

Nursing staff (all bands) working on acute admissions units in Nottingham university hospitals, 10-15 total.

8 Will written consent be obtained from all volunteers? **Yes/No**

Please give the name, status and relevant qualifications of the person who will give a verbal explanation and obtain consent.

Katie Burns – Student (MSc Nursing Science)

9 Will a disturbance allowance be offered? **Yes/No**

If Yes, give rate (*delete as appropriate)

*Per day: *Per Study:

*Per procedure: *Give the maximum allowance payable to a volunteer:

10 Will a medical supervisor be present: **Yes/No**

If Yes, give name and qualifications:

11a Does the study involve the exposure of the patient to radioactive materials? Yes/No

If your project involves the administration of radioisotopes your attention is drawn to note 10 a) in the attached notes of guidance.

Radiological Practitioner/ARSAC certificate holder

Name	Signature*	What is the total effective dose

*The Radiological Practitioner/ARSAC certificate holder must sign to accept responsibility for the radiological procedure listed above.

It is the responsibility of the investigator to ensure that the total exposure of a volunteer to ionising radiation will not exceed 5 mSv over any 12 month period.

The Radiation Protection Adviser (RPA) must sign below to confirm that the dose estimate is satisfactory and that the appropriate arrangements are in place for undertaking the procedure.

RPA Name Signature Date

11b Does the study involve the exposure of the patient to X-rays ? **Yes/No**

Type of procedure:

All research involving radiology must be submitted and approved by the Clinical Director for Radiology.

RPA Name ***Signature**** ***What is the total effective dose***

Clinical Director Name Signature Date

12 Will participant's General Practitioners be told about the study? This would be regarded as essential if the study includes consumption of drugs or novel chemical entities or if you are recommending that the volunteer should see their GP as a result of the study.

Yes/No

If no please justify

Not required for this qualitative study where the participants are nursing staff.

13a 1. If the procedure involves any intervention or treatment (blood sampling, biopsy , i.v injections, manipulation etc) does the practitioner

performing this intervention or treatment have personal profession

negligence insurance **Yes/No**
N/A

2. If the procedure involves new drug, formulation or device, will full insurance cover be provided by the sponsoring drug firm?

Yes/No N/A

If Yes, **See Guidelines Note 1: Insurance**

Proof of indemnity and a copy of the company's certificate of insurance should be forwarded

for consideration at the same time as the application and protocol.

13b FUNDING

Will there be any material benefits from the study for the Department or individual investigator? (E.g. equipment, research salaries, consumables etc)

Yes/No

If yes please specify in general terms what the benefits will be:

13c Trust R&D

Does the study involve any staff who hold a contract with the hospital trust?(This does not include investigators with an honorary contract with the NHS but does include staff whose salary is provided by the NHS eg Nurse, radiographer, physiotherapist)

Yes/No

Will the study use any space/facilities/ resources belonging to the hospital trust? (eg Xray, pathology, blood tests other than those used to screen volunteers).

Yes/No

If you answer yes to both of the above questions please complete and submit the online [UK-based Hospital Trust] Trust R&D form

14a Drugs or other substances to be administered (including placebo and comparators)

Drug name:

Generic Name:

Proprietary Name:

Formulation:

Dose:

Frequency:

Route:

Possible complications (append details if necessary)

Please tick where appropriate

CSM status ☐ Product Licence (PL)
☐ Clinical Trials Authorisation (CTA) ☐

- For drugs with a product licence please append a copy of the relevant data sheet.
- For drugs with a CTA, please append a statement detailing present knowledge of the drug action, adverse effects, long and short-term safety.
- The number of the PL, CTA MUST be included.

If a new drug formulation is being studied an explicit statement as to the UK licensing status of the product is required. For unlicensed products then information should be given as to its licensing status in other countries and appropriate safety data should be submitted.

Arrangements for the supply, storage and dispensing of trial drugs must be discussed with the Senior Pharmacist at the relevant hospital who must sign below.

14b Will any drug used be stored in the Pharmacy and dispensed to a prescription written in red?

Yes/No ◯

N/A

If No, please explain why:

Signature of Pharmacist ……..

Printed Name ……

NB THIS MUST BE OBTAINED

15 Does the project involve painful/dangerous or invasive procedures on volunteers ?

Yes/No (N/A)

Please outline risks and degree of discomfort

16 Will blood samples or other specimens be required? **Yes (No) N/A**

If so, will written informed consent be obtained?

What volume will be required and over what duration?*

*Studies involving venepuncture only, where the information generated is of no prognostic significance, will be approved by Chairman's action provided no more than a total of 500mls of blood is taken over a 6 month period and no more than 200mls is taken on a single occasion. Applicants need to submit 1 copy of this form and other documentation with a covering letter to the Chairman.

17 How will the subjects be chosen? Please specify what criteria will be used and which groups you wish to target.

Purposeful sampling will be used; ward sisters of 5 designated wards will be contacted and asked to put forth information about the study to those nurses that would be suitable and interested.

18 Describe how possible participants will be approached? Please refer to note 9 in the Guidelines. Please specify whether posters will be used and where they will be placed.

Through their ward sisters/managers.

****** If your study is community-based or epidemiological study please answer the following questions (19-21)**

19 What sources of information will be included? (tick any that apply)

Personal interview	[ ]
Postal questionnaire**	[ ]
Hospital records	[ ]
GP records	[ ]
Occupational records	[ ]

Other, describe _____

**** Please submit a copy of your proposed questionnaire if you are a student please make sure your supervisor has reviewed and approved it.**

20 Whose permission will be sought to access this information (eg GP, consultant)?

21 For interview surveys only:

Please indicate who will do interviews (eg Students, research nurses etc)

Please submit an interview schedule including an outline of questions or topics to be discussed.

22 What ethical problems do you foresee in this project?

There is the possibility that participants may use examples of patient care in interviews. Patient confidentiality will be maintained in the write up of the report, and care taken when handling audio files. Once the report has been approved all audio data will be destroyed but transcribed data will be kept for the appropriate amount of time. Care will also be taken keeping the identities of participants private. I do not foresee any harm coming to participants or those in their care.

Any other relevant information?

DECLARATION: I will inform the Medical School Ethics Committee as soon as I hear the outcome of any application for funding for the proposed project and/or if there are any significant changes to this proposal. I have read the notes to the investigators and clearly understand my obligations as to the rights, welfare and dignity of the subjects to be studied, particularly with regard to the giving of information and the obtaining of consent.

Signature of Lead Investigator: **Date:**

***Nb If you are student your supervisor must sign this form otherwise it will be rejected*

Appendix 5 – Information sheet used for interviews

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

University of Nottingham, Faculty of Medicine and Health Sciences, Division of Nursing

Healthy Volunteer's Information Sheet

You have been invited to take part in a research study. Before you decide whether to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with friends and relatives if you wish to. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part or not. Thank you for reading this.

Background

The study is part of the investigators undergraduate Masters dissertation at the University of Nottingham.

The early warning system has been used in Nottingham University Hospitals Trust (NUH) for many years, the basis of which is to help nurses recognise and escalate deteriorating patients under their care. Ongoing audits at NUH started in 2012 show that escalation rates are poor.

This study will use short interviews with both qualified and auxillary nurses to understand their use of the system and why compliance rate with escalation procedures may be poor. The results of the study may be used to improve services in the future.

What does the study involve?

If you choose to take part in the study you will be invited to attend a short interview, this could be anything from 5 to 30 minutes in length. The interview will take place in the School of Nursing at the Queens Medical Center and will be audio recorded for later transcription.

Why have you been chosen?

You have been offered a place on this study based on your area of work and your job role in that area. All participants are chosen from acute admission wards in NUH and are either qualified or auxillary nurses by profession.

Do you have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason.

What do I have to do?

Each participant will be required to attend for an interview and answer the questions from the investigator as honestly as possible. No other form of contact or action by you is necessary. If you do wish to contact the investigator before or afterward, contact details are at the bottom of this sheet.

Will my taking part in this study be kept confidential?

All information which is collected about you during the course of the research will be kept on a password protected database and is strictly confidential. When the study is written up, each participant will be referred to by a number and never by name.

What will happen to the results of the research study?

This study will be used as part of the investigators undergraduate Masters dissertation. It is possible that the study will be submitted for publication.

Who has reviewed the study?

This study has been reviewed and approved by the University of Nottingham Medical School Ethics Committee.

Contact for Further Information

If you have any further inquiries you can contact the investigator by emailing ntykb@nottingham.ac.uk

Appendix 6 – Consent sheet used for interviews

University of Nottingham, Faculty of Medicine and Health Sciences, Division of Nursing

"Why do nurses not escalate patients when the early warning score indicates to do so?"
Undergraduate Masters in Nursing Science dissertation study by Katie Burns

Healthy Volunteer's Consent Form

Please read this form and sign it once the above named or their designated representative, has explained fully the aims and procedures of the study to you

- I voluntarily agree to take part in this study.
- I confirm that I have been given a full explanation by the above named and that I have read and understand the information sheet given to me which is attached.
- I have been given the opportunity to ask questions and discuss the study with one of the above investigators or their deputies on all aspects of the study and have understood the advice and information given as a result.
- I agree to comply with the reasonable instructions of the supervising investigator and will notify her immediately of any problems I have experienced as a result of the study.
- I authorise the investigators to disclose the results of my participation in the study but not my name.
- I understand that information about me recorded during the study will be kept in a secure database. If data is transferred to others it will be made anonymous. Data will be kept for 7 years after the results of this study have been published.
- I understand that I can ask for further instructions or explanations at any time.
- I understand that I am free to withdraw from the study at any time, without having to give a reason for withdrawing.

Name:……

……

Address:……

……

…… Telephone

number:……

Signature:……Date:……

……

I confirm that I have fully explained the purpose of the study and what is involved to the above named person.

I have given the above named a copy of this form together with the information sheet.

Investigators Signature:……Date:
……

Investigators Name:
…… …… ……

Study Volunteer Number:

Appendix 7 – Overview of the study disseminated to ward managers and matrons

MNursSci 2014 dissertation study – Katie Burns

The proposed study

Background

The study is part of the investigators undergraduate Masters dissertation at the University of Nottingham.

The early warning system has been used in this Trust for many years, the basis of which is to help nurses recognise and escalate deteriorating patients under their care. Ongoing audits at this Trust started in 2012 show that escalation rates are poor.

This study will use short interviews with both qualified and auxillary nurses to understand their use of the system and why compliance rate with escalation procedures may be poor. The results of the study may be used to improve services in the future.

Aims

To gain knowledge on what nurses think about using EWS systems in this Trust.

- To gain understanding of why nurses do not use early warning escalation systems appropriately.
- To investigate barriers to the use of EWS.

Design/method

The best way to find out why something happens is to use a qualitative method of investigation (Topping 2010). To understand why nurses do not escalate EWS scores effectively semi-structured interviews are an ideal choice of design. Questionnaires could also be used but would not acquire as much depth; during an interview the interviewer may ask for elaboration on some points to gain a greater depth of understanding.

Participants

The participants for this research question will be nurses of all bands (including auxiliary nurses) who have experience of the EWS system used in the Trust, and caring for an acutely unwell patient. The participants will be gathered from acute admission wards in this Trust. For this study, due to the experience and time available to the researcher, a maximum of 15 nurses will be chosen for participation.

Before recruiting participants, I will gain the permission of the matrons for that directorate, and the specific ward managers. Once consent is gained I will put posters up in the

staff room, and leave a few copies of my information sheet. My email address will be attached to both of these, and hopefully people will volunteer. As the study is completely voluntary, this way of selecting a sample will hopefully prove useful. Problems I foresee are: not enough people volunteering, and that this selection style may give a bias sample, as particular personality types may not volunteer.

Procedure

Prior to the study taking place a pilot interview will be conducted, with the participant having been recruited in the same manner but attending interview earlier. From this the proceedings can be altered to gain better results and be conducted more fluidly. For the pilot interview the below procedure will be carried out.

Pre-interview

Using the contact information gathered a suitable date and time for an interview will be arranged with each individual participant. A room at the preferred hospital site will be booked for this time and day in advance to ensure the booking. The participant will be contacted in the week before the interview to ensure the interview will still go ahead.

Before the arrival of the participant, I will prepare the room. This will involve making sure that there are chairs and a table available. I would need to set up the Dictaphone and ensure that it is working. If the Dictaphone is not working an alternative will be used (as stated above).

Upon meeting the participant at the designated place at the designated time, I will introduce myself and again fully explain the study, making sure that the participant still gives full consent for the interview to take place. I will allow time for the participant to read the written summary of the study again if they so wish. I would also like to allow time for a small questionnaire before the interview takes place, but as part of the audio recording so as interviews and participant information do not become disordered. This questionnaire would be to gather information on the person's job, role, rank and experience. This information will be used to stratify the data.

I will be the sole interviewer. Due to my inexperience as a researcher, after each interview I will feedback to my supervisor and reflect on how each interview went and how to improve my interviewing skills.

Interview questions

The interviews will be semi structured. I will ask a broad opening question, proceeding onto other questions if the answer proves quite short and ask for elaboration on points made where I see fit. I would expect each interview to last around 30 minutes (based on a previous study by Pattinson and Eastham 2011).

Opening Question:

- Tell me about your experience of using early warning scores as a tool in this Trust

Other Questions:

- Do you find EWS useful in recognising deteriorating or critically ill patients?
- Do you find EWS useful to your work? (if so, why?, if not, why not?)
- How do you use the early warning system in relation to your other nursing skills?
- Tell me about your experiences of caring for acutely unwell patients
- What kind of help was available to you when you cared for acutely unwell patients?

Transcription

Transcription of the data will be done using the University transcription service. I will aim to make the transcription as accurate as possible by requesting the inclusion of pauses, afflictions and filler words (such as "um").

Analysis

Once all the data has been transcribed it will then need to be analysed. To do this in as objective manner as possible, the transcript will be coded. Small parts of the transcript will each be assigned a code. These codes can then be grouped to form a diagram, grouping together themes and similar pieces of code. One downside of analysing qualitative data is that, even though the analysis is structured, the results can appear subjective. However, the data being looked at is also subjective as it will hopefully show opinions of a small group of nurses.

Ethical Consideration

Full ethical approval has been gained from the School of Health Sciences at Nottingham University. Permission from Matrons and ward managers is to be gained.

If a participant reviews an emotion event, I have planned to advise them that the Trust has a self-referral counselling service – this may help participants who have struggled with caring for the acutely ill patient. I have information regarding this service in my possession that is available on the Trust website, and so before each interview I will print up to date information in preparation.

If a participant reveals anything that breaks the NMC code of conduct, I would inform the appropriate ward manager. I would ask each ward manager prior to starting interviews if this is what they would like to happen

Appendix 8 – Recruitment Poster

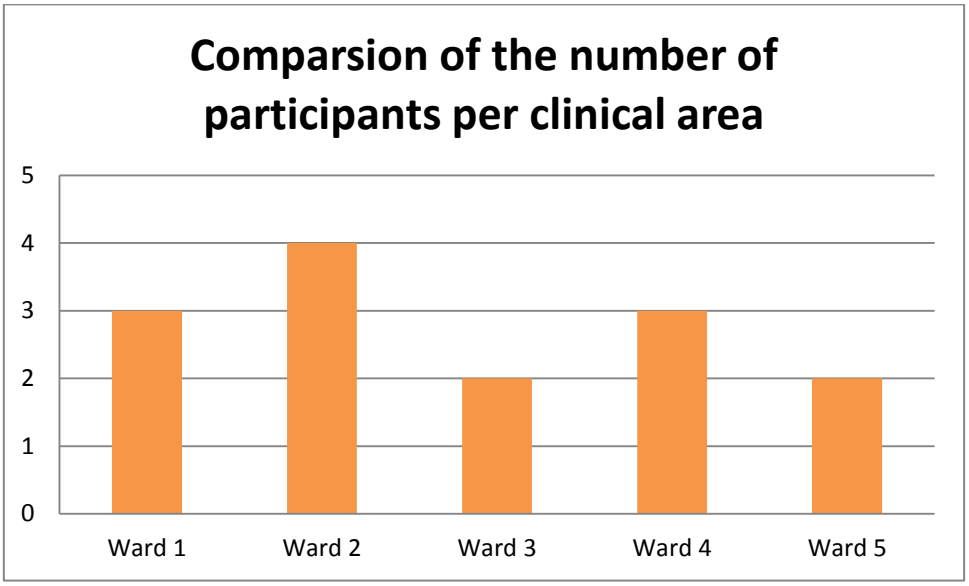
How do you find using the Trust EWS tool?

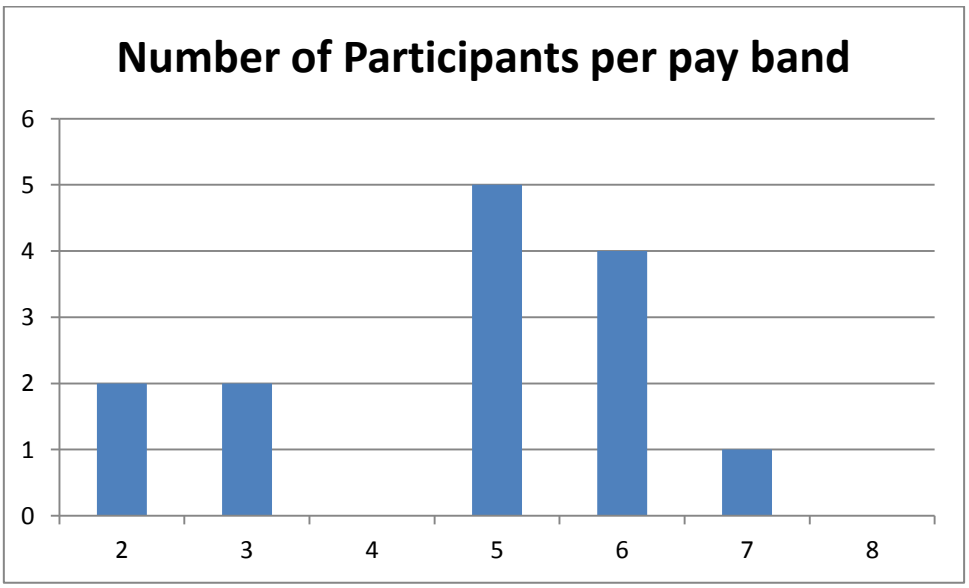
I am studying nurse's and health care assistant's views of using EWS when caring for acutely unwell patients. This is part of my undergraduate nursing dissertation, and I would very much appreciate volunteers for short interviews. For more information, please contact me at ntykb@nottingham.ac.uk.

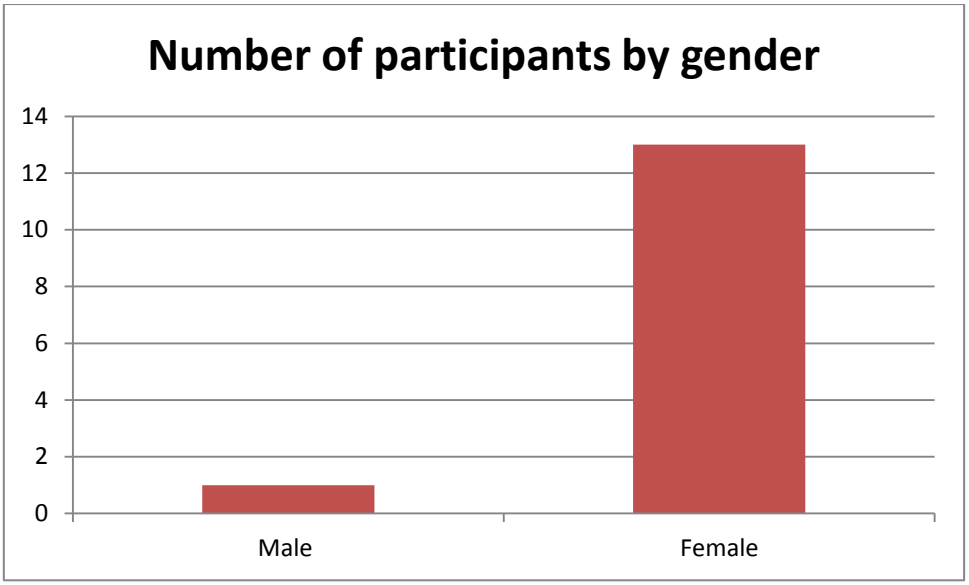
If you are worried about not having time for an interview, they will be very short and I will arrange them at YOUR convenience.

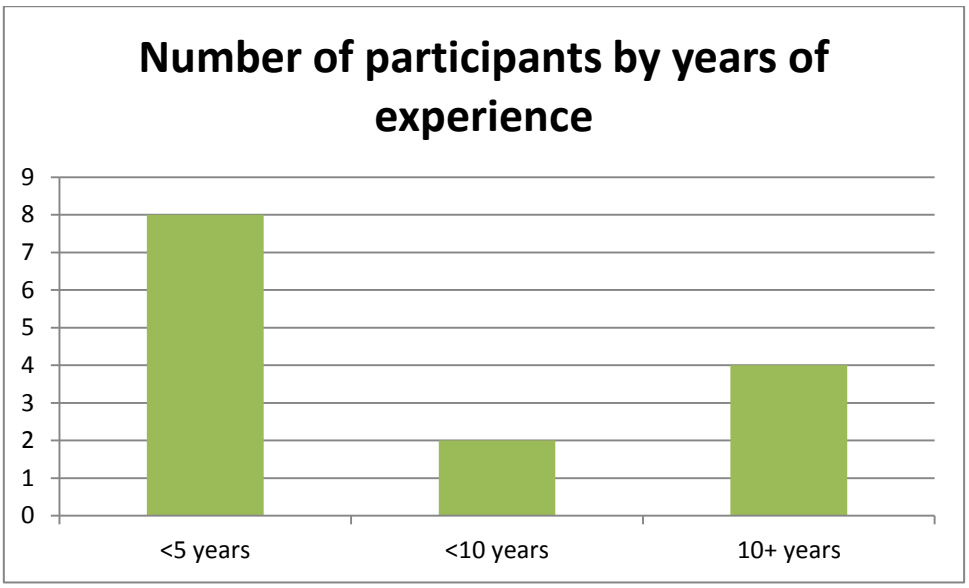
All information gathered will go towards improving systems already in use. All information is confidential.

Appendix 9 – Graphs depicting participant information used to stratify the data






Number of participants by gender
14
12
10
8
6
4
2
0
Male
Female


Number of participants by years of experience
9
8
7
6
5
4
3
2
1
0
<5 years
<10 years
10+ years