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Trainee-led evaluation of the need for intershift recovery among emergency department doctors in the United Kingdom: the TIRED-UK study

Submission date
09/09/2019

Recruitment status
No longer recruiting

Registration date
07/11/2019

Overall study status
Completed

Last Edited
05/11/2020

Condition category
Other

[_] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
Emergency departments (ED) provide patient care 24 hours a day all year round. This requires staff to work long consecutive shifts that can result in fatigue. It is recognised that fatigue negatively impacts productivity, exacerbates the risk of human error, and could be associated with occupational burnout. From a patient perspective staff with excess fatigue could led to reduced experience of care and increased patient safety concerns. Fatigue may be measured by a variety of approaches including psychometric testing, assessment of reaction speeds, and personal diaries. However, these methods are impractical for providing rapid assessment within a working population and have limited validity. With rates of burnout as high as 60% in ED doctors there is a need for effective measurements of fatigue in order to produce evidence-based solutions.

The 'need for recovery' (NFR) scale is a validated questionnaire originally developed in the Netherlands, to assess how work demands affect inter-shift recovery. It features eleven items requiring a 'yes' or 'no' response, takes only a few minutes to complete, and shows high acceptability amongst surveyed populations. An online survey using the NFR has been trialled by this research group in a single centre ED and was shown to be an acceptable means of measuring staff fatigue.

This study is a survey aiming to answer the question 'What is the baseline need for recovery (NFR) score among ED doctors in the UK and which factors influence NFR?'. It will achieve this by conducting a national study to characterise the baseline NFR score in ED doctors across the UK and determine whether there are any associations and differences between NFR scores and demographic, occupational, personal wellbeing, rota characteristics, or geographical region variables. The survey will be open for the period of one month and will take participants approximately 15 minutes to complete.

Who can participate?
Doctors with full or provisional registration with the General Medical Council who have been employed in their main role as an ED doctor for the preceding month at the time of completion of the survey.

What does the study involve?
Participants will complete an online questionnaire

What are the possible benefits and risks of participating?
This study has the potential to aid patient safety by providing individuals and employers with an indication of who is most at risk of increased NFR score, whether disparities exist between different staff groups, departments, and localities, and whether increased need for recovery is a predictor of future occupational burnout.

Where is the study run from?

When is the study starting and how long is it expected to run for?
June 2018 to October 2019

Who is funding the study?
Royal College of Emergency Medicine

Who is the main contact?
Dr Laura Cottey,
laura.cottey@nhs.net

Study website
https://www.rcemlearning.co.uk/foamed/current-projects-tired/

Contact information

Type(s)
Scientific

Contact name
Dr Laura Cottey

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
41938

Study information

Scientific Title
Trainee-led evaluation of the need for Intershift Recovery among Emergency Department doctors in the United Kingdom

Acronym
TIRED-UK

Study objectives
What is the baseline need for recovery (NFR) score among Emergency Department (ED) doctors in the UK and which factors influence NFR?

Ethics approval required
Old ethics approval format

Ethics approval(s)
Not required. Research limited to involvement of staff as participants (no involvement of patients/service users as participants)

Study design
Observational; Design type: Cross-sectional

Primary study design
Observational

Secondary study design
Cross sectional study

Study setting(s)
Hospital

Study type(s)
Other

Participant information sheet

Not available in web format, please use the contact details below to request a patient information sheet

Health condition(s) or problem(s) studied
Fatigue and recovery in doctors

Interventions
This study is being conducted as part of the Trainee Emergency Research Network collaborative (TERN), an initiative by the Royal College of Emergency Medicine to widen access to research by ED doctors and specifically trainees.

The methodology for the survey has been designed with regard to the Checklist for Reporting Results of Internet Esurveys (CHERRIES).

The design is a cross-sectional online survey with additional ED demographic data collected by a local TERN representative. Each participant will complete the survey once. This design has been chosen for ease of access by participants and has been amended following PPI consultation where proposed questions were reviewed.

The 57-item cross sectional survey has been previously trialled during a feasibility study and was found to be acceptable to participants and to have good face validity. The survey will seek to gather information on demographic characteristics (6 items), operational/rota characteristics (25 items), NFR questionnaire (11 items), perceptions relating to burnout (2 items) and one free text item to seek participant's views on suggestions on recovery.

The survey has been designed to minimise respondent fatigue and can be completed in 10-15 minutes using a smart phone app, computer or laptop.

In addition to the individual doctor surveys, a nominated TERN representative will collect anonymous site-specific data from EDs which is collected locally and nationally. This methodology has been chosen as previous surveys have found when participants are asked questions which requires them to calculate shift lengths and maximum number of shifts based over a certain period this reduces responses. This data is the same for each group of doctors on a specific rota and therefore can be collected from the roster without burdening participants. The information collected will also include broader information on the characteristics of the ED, staffing, rota pattern, leave allocation, teaching &
training, consultant/ senior supervision, case-mix, specialist designation (e.g. Major Trauma Centre, Hyper- acute Stroke centre, etc.) which can then be associated with individuals' responses.

Intervention Type
Other

Primary outcome measure
Baseline Need for Recovery (NFR) score amongst ED doctors in the UK assessed by NFR questionnaire.

Secondary outcome measures

Assessed by 57-item survey:
1. Demographic characteristics
2. Occupational characteristics
3. Well-being characterisitics

Overall study start date
01/11/2018

Completion date
10/10/2019

Eligibility

Key inclusion criteria
1. Doctors with full or provisional registration with the General Medical Council who have been employed in their main role as an ED doctor for the preceding month at the time of completion of the survey
This includes; ED consultants, ED specialist training doctors, ED associate specialist and staff grades doctors, acute common care stem trainees, GP trainees, Foundation Year one and two doctors, clinical fellows and trust grade doctors.

Participant type(s)
Patient

Age group
Adult

Sex
Both

Target number of participants
Planned Sample Size: 3500; UK Sample Size: 3500

Total final enrolment
4247

Key exclusion criteria
1. Doctors whose main place of employment is outside of the ED. This includes speciality doctors employed in specialties other than Emergency Medicine. This will be identified in the demographic questions asked in the survey
2. EDs designated as Type 2, 3, or 4 by NHS England

Date of first enrolment
03/06/2019

Date of final enrolment
15/07/2019

Locations

Countries of recruitment
England

Northern Ireland

Scotland

United Kingdom

Wales

Study participating centre
NHS Greater Glasgow and Clyde
J B Russell House
Gartnavel Royal Hospital
1055 Great Western Road
Glasgow
United Kingdom
G12 0XH

Study participating centre
University Hospitals Coventry and Warwickshire NHS Trust
Clifford Bridge Road
Coventry
United Kingdom
CV2 2DX

Study participating centre
Frimley Health NHS Foundation Trust
Portsmouth Road
Camberley
United Kingdom
GU16 7UJ

Study participating centre
Cambridge University Hospitals NHS Foundation Trust
Addenbrookes Hospital
Hills Road
Cambridge
United Kingdom
CB2 0QQ

Study participating centre
Croydon Health Services NHS Trust
London Road
Thornton Heath
United Kingdom
CR7 7YE

Study participating centre
University Hospitals Of Derby And Burton NHS Foundation Trust
Royal Derby Hospital
Uttoxeter Road
Derby
United Kingdom
DE22 3NE

Study participating centre
East Kent Hospitals University NHS Foundation Trust
Kent & Canterbury Hospital
Ethelbert Road
Canterbury
United Kingdom
CT1 3NG

Study participating centre
Medway NHS Foundation Trust
Windmill Road
Gillingham
United Kingdom
ME7 5NY

Study participating centre
Northumbria Healthcare NHS Foundation Trust
Rake lane
North Shields
United Kingdom
NE29 8NH

Study participating centre
Royal Liverpool Hospital
Prescot Street

Liverpool
United Kingdom
L7 8XP

Study participating centre
Aintree University Hospital NHS Foundation Trust
Fazakerley Hospital
Lower Lane
Liverpool
United Kingdom
L7 9AL

Study participating centre
Great Western Hospital
Marlborough Road
Swindon
United Kingdom
SN3 6BB

Study participating centre
Royal Devon and Exeter NHS Foundation Trust
Barrack Road
Exeter
United Kingdom
EX2 5DW

Study participating centre
St Helens And Knowsley Hospital Services NHS Trust
Whiston Hospital
Warrington Road
Precot
United Kingdom
L35 5DR

Study participating centre
Northwick Park Hospital
Watford Road
Harrow
United Kingdom
HA1 3UJ

Study participating centre
Gloucester Royal Hospital
Gloucestershire Hospitals NHS Foundation Trust
Great Western Road
Gloucester
United Kingdom
GL1 3NN

Study participating centre
University Hospital Southampton NHS Foundation Trust
Southampton
United Kingdom
SO16 6YD

Study participating centre
Southport And Ormskirk Hospital NHS Trust
Southport
United Kingdom
PR8 6PN

Study participating centre
Imperial College Healthcare NHS Trust
London
United Kingdom
W2 1NY

Study participating centre
NHS Blackburn With Darwen CCG
Blackburn
United Kingdom
BB1 2FD

Study participating centre
NHS Fife
Cupar
United Kingdom
KY15 5UP

Study participating centre
Lewisham And Greenwich NHS Trust
London
United Kingdom
SE13 6LH

Study participating centre
University Hospitals Plymouth NHS Trust
Plymouth
United Kingdom
PL6 8DH

Study participating centre
Torbay And South Devon NHS Foundation Trust
Torquay
United Kingdom
TQ2 7AA

Study participating centre
University Hospitals of Leicester NHS Trust
Leicester
United Kingdom
LE1 5WW

Study participating centre
Manchester University NHS Foundation Trust
Manchester
United Kingdom
M13 9WL

Study participating centre
Mid Cheshire Hospitals NHS Foundation Trust
Crewe
United Kingdom
CW1 4QJ

Study participating centre

Southern Health & Social Care Trust
Craigavon Area Hospital
68 lurgan Road
Portadown
United Kingdom
BT63 5QQ

Study participating centre
University Hospitals Birmingham NHS Foundation Trust
Birmingham
United Kingdom
B15 2TH

Study participating centre
Cardiff & Vale University LHB
Cardiff
United Kingdom
CF14 4XW

Study participating centre
South Eastern Health & Social Care
Dundonald
United Kingdom
BT16 1RH

Study participating centre
Taunton And Somerset NHS Foundation Trust
Taunton
United Kingdom
TA1 5DA

Study participating centre
South Tees Hospitals NHS Foundation Trust
Middlesborough
United Kingdom
TS4 3BW

Study participating centre

University Hospitals Bristol Nhs Foundation Trust
Bristol
United Kingdom
BS1 3NU

Study participating centre
NHS Lothian
Edinburgh
United Kingdom
EH1 3EG

Study participating centre
The Newcastle Upon Tyne Hospitals Nhs Foundation Trust
Newcastle
United Kingdom
NE7 7DN

Study participating centre
Belfast Health & Social Care Trust
Belfast
United Kingdom
BT9 7AB

Study participating centre
Pennine Acute Hospitals NHS Trust
Manchester
United Kingdom
M8 5RB

Study participating centre
Guy's And St Thomas' Nhs Foundation Trust
London
United Kingdom
SE1 9RT

Study participating centre

Portsmouth Hospitals Nhs Trust
Portsmouth
United Kingdom
PO6 3LY

Study participating centre
Chelsea And Westminster Hospital Nhs Foundation Trust
London
United Kingdom
SW10 9NH

Study participating centre
St George's University Hospitals Nhs Foundation Trust
London
United Kingdom
SW17 0QT

Study participating centre
James Paget University Hospitals Nhs Foundation Trust
Great Yarmouth
United Kingdom
NR31 6LA

Study participating centre
East Suffolk And North Essex Nhs Foundation Trust
Colchester
United Kingdom
CO4 5JL

Study participating centre
West Hertfordshire Hospitals Nhs Trust
Watford
United Kingdom
WD18 0HB

Study participating centre

West Suffolk Nhs Foundation Trust
Bury St. Edmunds
United Kingdom
IP33 2QZ

Study participating centre
NHS Grampian
Aberdeen
United Kingdom
AB15 6RE

Study participating centre
Homerton University Hospital Nhs Foundation Trust
London
United Kingdom
E9 6SR

Study participating centre
Airedale Nhs Foundation Trust
Keighley
United Kingdom
BD20 6TD

Study participating centre
Barts Health Nhs Trust
London
United Kingdom
E1 1BB

Study participating centre
North Middlesex University Hospital Nhs Trust
London
United Kingdom
N18 1QX

Study participating centre

Royal Berkshire Nhs Foundation Trust
Reading
United Kingdom
RG1 5AN

Study participating centre
Lancashire Teaching Hospitals Nhs Foundation Trust
Preston
United Kingdom
PR2 9HT

Study participating centre
Bedford Hospital Nhs Trust
Bedford
United Kingdom
MK42 9DJ

Study participating centre
Maidstone And Tunbridge Wells Nhs Trust
Maidstone
United Kingdom
ME16 9QQ

Study participating centre
East And North Hertfordshire Nhs Trust
Stevenage
United Kingdom
SG1 4AB

Study participating centre
Lewisham And Greenwich Nhs Trust
London
United Kingdom
SE13 6LH

Study participating centre

NHS Lanarkshire
Hamilton
United Kingdom
ML3 0TA

Study participating centre
Leeds Teaching Hospitals Nhs Trust
Leeds
United Kingdom
LS9 7TF

Study participating centre
York Teaching Hospital Nhs Foundation Trust
York
United Kingdom
YO31 8HE

Study participating centre
Betsi Cadwaladr University LHB
Bangor
United Kingdom
LL57 2PW

Study participating centre
Hull And East Yorkshire Hospitals Nhs Trust
Hull
United Kingdom
HU3 2JZ

Study participating centre
University College London Hospitals Nhs Foundation Trust
London
United Kingdom
NW1 2PG

Study participating centre

Harrogate And District Nhs Foundation Trust
Harrogate
United Kingdom
HG2 7SX

Study participating centre
Salford Royal Nhs Foundation Trust
Salford
United Kingdom
M6 8HD

Study participating centre
Sheffield Teaching Hospitals Nhs Foundation Trust
Sheffield
United Kingdom
S5 9AU

Study participating centre
Surrey And Sussex Healthcare Nhs Trust
Redhill
United Kingdom
RH1 5RH

Study participating centre
Western Sussex Hospitals Nhs Foundation Trust
Worthing
United Kingdom
BN11 2DH

Study participating centre
Aneurin Bevan University LHB
Newport
United Kingdom
NP18 3XQ

Study participating centre

Hampshire Hospitals Nhs Foundation Trust
Basingstoke
United Kingdom
RG24 9NA

Study participating centre
University Hospitals Of North Midlands Nhs Trust
Stoke-on-Trent
United Kingdom
ST4 6QG

Study participating centre
Doncaster And Bassetlaw Teaching Hospitals Nhs Foundation Trust
Doncaster
United Kingdom
DN2 5LT

Study participating centre
NHS Ayrshire and Arran
Ayr
United Kingdom
KA7 1QJ

Study participating centre
Warrington and Halton Hospitals Nhs Foundation Trust
Warrington
United Kingdom
WA5 1QG

Study participating centre
Epsom and St Helier University Hospitals Nhs Trust
Carshalton
United Kingdom
SM5 1AA

Study participating centre

Bolton Nhs Foundation Trust
Bolton
United Kingdom
BL4 0JR

Study participating centre
Bradford Teaching Hospitals Nhs Foundation Trust
Bradford
United Kingdom
BD9 6RJ

Study participating centre
Brighton And Sussex University Hospitals Nhs Trust
Brighton
United Kingdom
BN2 5BE

Study participating centre
Oxford University Hospitals Nhs Foundation Trust
Oxford
United Kingdom
OX3 9DU

Study participating centre
Milton Keynes University Hospital Nhs Foundation Trust
Milton Keynes
United Kingdom
MK6 5LD

Study participating centre
Royal Cornwall Hospitals Nhs Trust
Truro
United Kingdom
TR1 3LJ

Study participating centre

Shrewsbury and Telford Hospital Nhs Trust
Shrewsbury
United Kingdom
SY3 8XQ

Study participating centre
Royal Surrey County Hospital Nhs Foundation Trust
Guildford
United Kingdom
GU2 7XX

Study participating centre
Royal United Hospitals Bath Nhs Foundation Trust
Bath
United Kingdom
BA1 3NG

Study participating centre
Sheffield Children's Nhs Foundation Trust
Sheffield
United Kingdom
S10 2TH

Study participating centre
Mid Cheshire Hospitals Nhs Foundation Trust
Crewe
United Kingdom
CW1 4QJ

Study participating centre
Yeovil District Hospital Nhs Foundation Trust
Yeovil
United Kingdom
BA21 4AT

Study participating centre

NHS Forth Valley
Stirling
United Kingdom
FK8 1DX

Sponsor information

Organisation
University Hospitals Plymouth NHS Trust

Sponsor details
Derriford Hospital
Derriford Road
Plymouth
England
United Kingdom
PL6 8DH
+44 (0)1752 431045
crollinson@nhs.net

Sponsor type
Hospital/treatment centre

ROR
https://ror.org/05x3jck08

Funder(s)

Funder type
Research organisation

Funder Name
Royal College of Emergency Medicine; Grant Codes: GR222017

Results and Publications

Publication and dissemination plan
Planned publication in a high-impact peer-reviewed journal.

Intention to publish date
14/10/2020

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request from Dr Tom Roberts, TERN@rcem.ac.uk. Anonymised data to both individual and site will be available for one year after the study. This will be available to principal investigators. Others may request the data and such requests will be dealt with on a case by case basis.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol file		20/02/2019	07/11/2019	No	No
Results article	results	02/11/2020	05/11/2020	Yes	No