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A study of the use of debriefing to improve cardiopulmonary resuscitation delivery at in-hospital adult cardiac arrest

Submission date
22/05/2013

Registration date
22/05/2013

Last Edited
16/01/2017

Recruitment status
No longer recruiting

Overall study status
Completed

Condition category
Circulatory System

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

Plain English summary of protocol
Background and study aims
Cardiac arrest is the sudden stopping of heart function. It affects about 35,000 patients in UK hospitals per year. Less than 20% of cardiac arrest victims survive to leave hospital. Survival requires the delivery of high-quality cardiopulmonary resuscitation (CPR). However, in practice, the delivery of high-quality CPR is not always achieved. Providing feedback (debriefing) to doctors and nurses about their performance at a cardiac arrest may be an effective way to improve the quality of CPR. The aim of this study is to compare the effectiveness of three different debriefing interventions.

Who can participate?
Patients aged 18 and above who have a cardiac arrest at one of the three hospitals which make up the Heart of England NHS Foundation Trust.

What does the study involve?
Following each cardiac arrest, staff are offered debriefing about the quality of CPR provided at the cardiac arrest. The type of debriefing is determined by the hospital site. At hospital one, staff receive written feedback. At hospital two, individuals receive spoken feedback. At hospital three, staff participate in monthly debriefing meetings. At each hospital, staff use defibrillators equipped with technology that measures the quality of CPR provided at the cardiac arrest. This technology consists of a small device that is placed on the patients chest during their cardiac arrest. The device also provides immediate feedback about the quality of CPR through audio (e. g. compress faster) and visual prompts. Patients who have a cardiac arrest receive CPR provided by teams who have received debriefing. The effectiveness of each debriefing intervention is determined by measuring and comparing CPR quality. Information collected during this study is compared with data collected during a previous study.

What are the possible benefits and risks of participating?
Patients taking part may benefit from receiving a higher quality of CPR during their cardiac arrest. This study may help to determine which is the most effective debriefing method. There are no anticipated risks associated with taking part.

Where is the study run from?
Heart of England NHS Foundation Trust (UK)

When is the study starting and how long is it expected to run for?
September 2013 to August 2014

Who is funding the study?
Resuscitation Council (UK)

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
14495

Study information

Scientific Title
A study of the use of debriefing to improve cardiopulmonary resuscitation delivery at in-hospital adult cardiac arrest: a non-randomised interventional process of care and treatment trial

Acronym
Cardiopulmonary Resuscitation Debriefing study (CODE study)

Study objectives

Cardiac arrest is the sudden cessation of heart function. It affects approximately 35,000 patients in UK hospitals per year and inevitably leads to death, unless the patient receives prompt defibrillation and high quality cardiopulmonary resuscitation (CPR). However, the quality of the delivery of the delivery of these key interventions is highly variable.

The use of debriefing can be effective way to change clinician behaviour, and thereby improve care delivery. Debriefing offers clinicians the opportunity to engage in a facilitated discussion about their performance, and identify strategies for improvement. The 2010 International resuscitation guidelines recommended the use of debriefing following cardiac arrest. However, despite some promising early results, cardiac arrest debriefing remains in its infancy and the best way to deliver it has not yet been determined. Based on results from our previous work (systematic review, questionnaires, semi-structured interviews), we have developed new debriefing interventions: individual/small group debriefing, and written feedback.

This study will implement these debriefing strategies within Heart of England NHS Foundation Trust hospitals. The effectiveness of these interventions will be evaluated by measuring CPR quality at in-hospital cardiac arrests, using data that is automatically recorded by Trust defibrillators. The study will use data from another study, as the control period for this study. The primary outcome will be chest compression depth. This is a process outcome, that is associated with defibrillation success and cardiac arrest survival.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Oxford C Research Ethics Committee, 13/08/2013, ref: 13/SC/0363

Study design
Non-randomised interventional process of care and treatment trial

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Topic: Generic Health Relevance and Cross Cutting Themes; Subtopic: Generic Health Relevance (all Subtopics); Disease: Critical Care

Interventions
Following each cardiac arrest, staff are offered debriefing about the quality of CPR provided at the cardiac arrest. The type of debriefing is determined by the hospital site. At hospital one, staff receive written feedback. At hospital two, individuals receive spoken feedback. At hospital three, staff participate in monthly debriefing meetings. At each hospital, staff use defibrillators equipped with technology that measures the quality of CPR provided at the cardiac arrest. This technology consists of a small device that is placed on the patients chest during their cardiac arrest. The device also provides immediate feedback about the quality of CPR through audio (e. g. compress faster) and visual prompts. Patients who have a cardiac arrest receive CPR provided

by teams who have received debriefing. The effectiveness of each debriefing intervention is determined by measuring and comparing CPR quality. Information collected during this study is compared with data collected during a previous study.

Intervention Type
Other

Phase
Not Applicable

Primary outcome(s)
Chest compression depth; timepoint(s): during cardiac arrest

Key secondary outcome(s))
Added 21/08/2013:
1. Process-based outcomes (all measured by the defibrillator during the cardiac arrest event):
1.1. Chest compression rate
1.2. No-flow time
1.3. Incidence of compression leaning
1.4. Peri-shock pause
1.5. Appropriateness of shocks
1.6. Time to first shock

2. Patient-based outcomes:
2.1. Return of spontaneous circulation, recorded at 20 minutes following the cardiac arrest event
2.2. Survival to hospital discharge, measured at hospital discharge
2.3. Neurological status at discharge, measured at hospital discharge using the cerebral performance category score

Completion date
15/08/2014

Eligibility

Key inclusion criteria
1. Male & female, lower age limit 18 years
2. Patients sustaining a cardiac arrest at Heart of England NHS Foundation Trust hospitals, which is attended by the hospital emergency team and where resuscitation is attempted

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Key exclusion criteria
Current exclusion criteria as of 21/08/2013:
1. Valid DNAR (Do Not Attempt Resuscitation) order

Previous exclusion criteria:
1. Valid DNAR (Do Not Attempt Resuscitation) order
2. Traumatic cardiac arrest

Date of first enrolment
02/09/2013

Date of final enrolment
15/08/2014

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Birmingham Heartlands Hospital
Birmingham
United Kingdom
B9 5SS

Sponsor information

Organisation
Heart of England NHS Foundation Trust (UK)

Funder(s)

Funder type
Research council

Funder Name
Resuscitation Council (UK)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/08/2016		Yes	No
HRA research summary			28/06/2023	No	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes