Acute Heart Failure

Study protocol

Study Advisory Group

Lisa Anderson	Cardiologist	St Georges
Joanne Bateman	Lead pharmacist for cardiology	Countess of Chester
Paul Foley	Cardiologist	Swindon
Jane Greaves	Critical care/coronary care nursing	Northumbria
Nicholas Ioannou	Intensivist	Guy's and St Thomas'
Miriam Johnson	Palliative Care Prof	Hull York Medical School
Jason Kendall	Emergency Medicine	Bristol
Barry Murphy	London ambulance service	
Janet Reid	Lead HF Nurse	NHS Lothian
Sarah Quinton	Lead for Critical Care Outreach	Heart of England
Iain Squire	Professor of Cardiovascular Med	Leicester
Shiva Sreenivasan	Acute Medicine	Western Health and Social Care Trust

NCEPOD Lay Reps

Richard Carrington
Alice Joy
Ron Newall
Sharon North

NCEPOD Clinical Coordinators

Gemma Ellis
Mark Juniper
Simon McPherson
Vivek Srivastava

NCEPOD Non-clinical staff

Marisa Mason
Karen Protopapa
Neil Smith
Dee Koomson

Introduction

Heart failure (HF) is one of the most common long-term conditions. There have been major advances in the last 10 years in the treatment of chronic heart failure both in terms of medical therapies (ACE inhibitors, beta blockers, MRAs, ivabradine), device therapy and models of care that have resulted in a >50% improvement in survival. However, acute heart failure management has remained unchanged for over 25 years and lacks the established pathways of care that have led to better outcomes in stroke and myocardial infarction. Most episodes of decompensated heart failure are triggered by acute conditions such as infection, fast AF and acute coronary syndrome and many are potentially treatable.

In the UK, heart failure currently accounts for 5% of all emergency hospital admissions and utilises 2% of all NHS hospital bed days (BSH 2015). The National Heart failure Audit has shown better heart failure medication prescription and better survival for those patients treated in Cardiology and this survival benefit persists to 1 year post discharge. Access to cardiology is age and sex dependent, with males and younger patients more likely to be treated on a cardiology ward (BSH 2015).

Acute HF carries an in-patient mortality of 11% with a five-fold variation of in-patient mortality between Acute Trusts in England and Wales (lowest 6%, highest 26%). In the US, better outcomes for acute heart failure are found in hospitals with higher nurse to patient ratios and more ITU and HDU resources. The National Heart Failure Audit shows that care delivered in a specialist cardiology ward is associated with a 40% reduction in mortality, but the proportion of patients transferred to cardiology is highly variable and no direct admission pathways or specialist management units exist.

The majority of heart failure deaths in the first 48 hours are due to pulmonary oedema but <5% are admitted to a High Dependency Units despite exceeding required Level 2 criteria.

The National Heart Failure Audit does not specifically examine care within the first 48 hours of admission. For patients in pulmonary oedema with Type 1 or Type 2 respiratory failure at presentation, UK intubation rates are 50% lower than in the US and inpatient mortality is 60%-70% higher than in the US. Increased nurse to patient ratios and increased ITU resources have both been shown to be associated with improved mortality in acute heart failure (Romley et al 2014, Barnato et al 2010, Ong et al 2009, Boom et al 2012). The National Heart Failure Audit shows improved quality of care and outcomes when heart failure patients receive specialist care is shown in the and has also been reported in the US setting (Jong et al 2003, Kociol et al 2013, D'Silva 2015).

The study proposed aims to examine in detail the care of patients who have died within 48 hours of admission to help determine the care provision in a Critical Care setting, the proportion of patients ventilated and Cardiology input prior to death

Peer review will help to describe reasons for treatment failure, high mortality rates and to assess the overall quality of care where this cannot be assessed based on the national heart failure audit results.

Assessment of organisational arrangements will help to describe the overall process of care for this group of patients and to identify areas for improvement.

Aims and Objectives

Aim

To identify and explore avoidable and remediable factors in the process of care for patients admitted to hospital with acute heart failure.

.

Objectives

1) To examine organisational structures, processes, protocols and care pathways in hospitals from pre-admission through to discharge or death

2) To identify a cohort of adult patients admitted with a primary diagnosis of heart failure particularly looking at care in the first 48 hours

3) To identify avoidable and remediable factors in the management of patients admitted with a primary diagnosis of heart failure throughout the patient pathway from pre hospital care to discharge or death, focusing on the following areas of care:

    - Prompt recognition and diagnosis of heart failure and rapid initiation heart failure pathway
    - Appropriate documentation and management heart failure
    - Prompt senior review and follow-up throughout admission
    - Escalation of care decisions and planning including admission to critical care

- Assessing multidisciplinary team approach
- Assessing adequate communications with patient, families and carers
- Examining the management of the 'acute' end of life pathway and ceilings of treatment including appropriateness of interventions
- Equity of access for mechanical support / transplant centre and escalation decisions
- Organisational aspects of care delivery for heart failure patients on acute, general or cardiology wards to include aspects of staff training

Methodology

Population

All adult patients (aged 16 and older) that were admitted as an emergency between 1st January 2016 and 31st December 2016 inclusive and died in hospital with a primary diagnosis of Heart Failure (ICD10 codes: I11.0, I25.5, I42.0, I42.9 and I50.0, I50.1, I50.9).

Exclusions

None

Case identification/patients

Local Reporters will be asked to complete a predefined spreadsheet listing all patients that meet the inclusion criteria. Details of previous admissions, prior diagnosis of heart failure and details of the discharging clinician will also be collected.

Sample size

A sample size of approximately 1000 patients will be selected from the identified patients for clinician questionnaire dissemination and case note review. The number of cases included will be limited to a maximum of five per hospital.

Method of data collection

Spreadsheet

As above, cases will be identified using a data collection spreadsheet. This will identify all patients meeting the study inclusion criteria, and include the patient's NHS number, date of birth, date of admission, date of death, diagnosis codes (ICD10) and the name of the discharging consultant.

Clinical questionnaire

A questionnaire will be sent to the consultant who was responsible for the patient's care at the time of death. This will collect data around the objectives listed above.

Case notes

Photocopies of the case notes of each included patient will be requested at the time of questionnaire dissemination. A list detailing the required case note extracts will be included with each questionnaire.

Organisational questionnaire

An organisational questionnaire collecting information regarding facilities, equipment, policies and guidelines relevant to the management of patients with heart failure will be sent to the NCEPOD Local Reporter. We ask that the Local Reporter liaise with the relevant person(s) that can accurately complete the questionnaire.

Participating sites

Data will be collected from all hospitals in England, Scotland, Wales, Northern Ireland, the Channel Islands and the Isle of Man. Data will be collected from NHS and large independent sector hospital groups, as well as many of the smaller private hospitals.

Pilot Study

A pilot study will be undertaken to ensure the data collection methods and questionnaires are robust.

Review of cases and analysis

Case reviewers

A multidisciplinary group of healthcare workers will be recruited to review the data and to provide expert opinion on the process of care and management of patients who have been diagnosed with heart failure.

Assessment form

For each case included in the peer review the case reviewers will be asked to complete a questionnaire outlining details of the case and giving their opinion on the quality of care provided to the patient.

Analysis

Questionnaire data will be electronically scanned into a preset database. Data will be analysed quantitatively and qualitatively.

Confidentiality and data protection

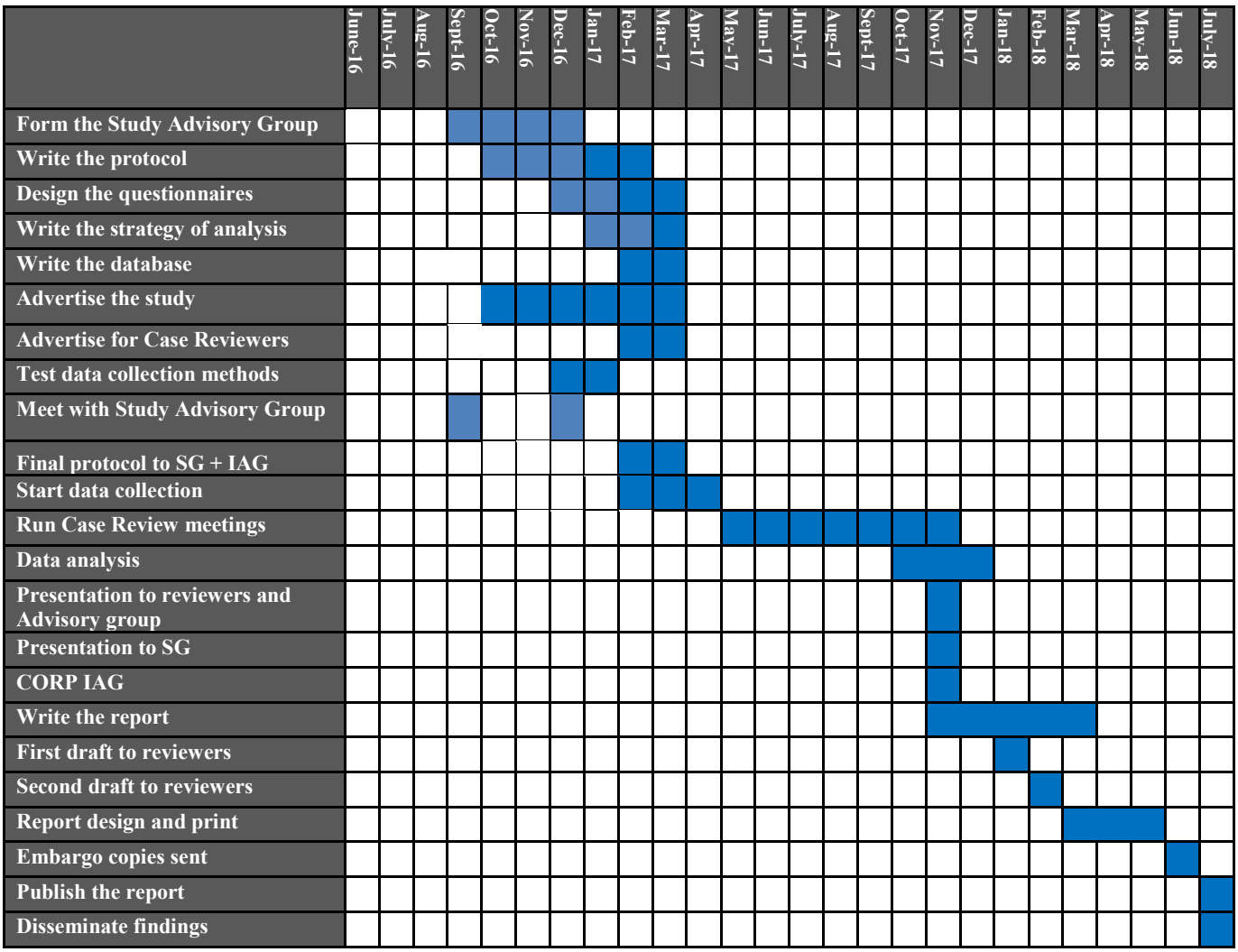
Once the data have been extracted by the NCEPOD researchers, the questionnaires and casenotes will be anonymised to remove patient identifiers prior to review by the Advisory Group.

All electronic data are held in password protected files and all paper documents in locked filing cabinets. As soon as possible after receipt of data NCEPOD will encrypt electronic identifiers and anonymise paper documents.

Dissemination

On completion of this study a report will be published and widely disseminated.

Timescale


June-16
July-16
Aug-16
Sept-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
July-17
Aug-17
Sept-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Mar-18
Apr-18
May-18
Jun-18
July-18
Form the Study Advisory Group
Write the protocol
Design the questionnaires
Write the strategy of analysis
Write the database
Advertise the study
Advertise for Case Reviewers
Test data collection methods
Meet with Study Advisory Group
Final protocol to SG + IAG
Start data collection
Run Case Review meetings
Data analysis
Presentation to reviewers and Advisory group
Presentation to SG
CORP IAG
Write the report
First draft to reviewers
Second draft to reviewers
Report design and print
Embargo copies sent
Publish the report
Disseminate findings