

# NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE

## SCOPE

### 1 Guideline title

Acute heart failure: diagnosis and management of adults with acute heart failure

#### 1.1 *Short title*

Acute heart failure

### 2 The remit

The Department of Health has asked NICE: 'To prepare a guideline on the diagnosis and management of acute heart failure'.

### 3 Clinical need for the guideline

#### 3.1 *Epidemiology*

- a) Acute heart failure can present as new-onset (de novo) heart failure in people without previously known cardiac dysfunction, or as acute decompensation of chronic heart failure.
- b) Acute heart failure can be grouped into the following categories: acute heart failure with pulmonary oedema, cardiogenic shock and acute right-sided heart failure.
- c) Acute heart failure is a common cause of admission to hospital, and is the leading cause of hospitalisation in people 65 years or older. The average age of people with acute heart failure is between 70 and 75 years. Men and women seem to be equally affected.

- d) In 2009/10, 67,158 people in England and Wales were discharged from hospital with a primary diagnosis of heart failure. European registry data show that nearly 50% of people admitted to hospital with acute heart failure are re-admitted within 12 months. The risk of re-admission or death within 60 days is 30–50%. The rate of hospitalisation because of acute heart failure is similar to that for acute coronary syndrome, but the mortality rate for acute heart failure is higher.
- e) Mortality from acute and chronic heart failure is high. The 2010/11 National Heart Failure Audit showed that about a third of people with acute heart failure die during their first hospitalisation or in the year after.

### **3.2 *Current practice***

- a) A range of methods are used to diagnose acute heart failure, such as clinical evaluation, electrocardiogram (ECG), chest X-ray and other imaging techniques, laboratory tests, and echocardiography. The availability of facilities and techniques for diagnosing acute heart failure varies. There is limited agreement between healthcare professionals on the best combination of methods to diagnose the condition.
- b) Concurrent with diagnostic procedures, monitoring commences as early as possible. Monitoring techniques may be non-invasive (for example, blood pressure, ECG and pulse oximeter techniques) and invasive (such as, arterial line, central venous pressure line and pulmonary artery catheter). Several factors influence which level and type of monitoring is most effective, such as the severity of the condition and response to initial treatment.
- c) There is a difference of opinion among healthcare professionals about the use of respiratory support, diuretics, vasodilators and inotropic agents in people with acute heart failure, particularly during the emergent phase of the syndrome.

- d) Different strategies are suitable for the management of acute heart failure associated with acute coronary syndrome, pulmonary congestion / oedema, hypotension, hypoperfusion or shock, as well as severe bradycardia or heart block as well as consideration for people with atrial fibrillation and a rapid ventricular rate. There is variation in who is treated in critical care settings and who is managed in a general medical ward.
- e) Preventing renal damage is an important consideration for people with acute heart failure. However, it is not clear what level of renal support should be offered in clinical practice.

## **4 The guideline**

The guideline development process is described in detail on the NICE website (see section 6, 'Further information').

This scope defines what the guideline will (and will not) examine, and what the guideline developers will consider. The scope is based on the referral from the Department of Health.

The areas that will be addressed by the guideline are described in the following sections.

### **4.1 Population**

#### **4.1.1 Groups that will be covered**

- a) Adults (aged 18 years or older) who are diagnosed with acute heart failure, or possible acute heart failure, or are being investigated for acute heart failure.
- b) Specific consideration is required for people with acute heart failure with pulmonary oedema, cardiogenic shock and acute right-sided heart failure.

#### **4.1.2 Groups that will not be covered**

- a) Children and young people under 18 years.

## **4.2      *Healthcare setting***

- a)       Hospital settings.
- b)       Pre-hospital emergency treatment.

## **4.3      *Clinical management***

### **4.3.1    Key clinical issues that will be covered**

#### **Diagnosis, assessment and monitoring**

- a)       Rapid diagnosis of suspected acute heart failure and its subtypes using ECG, chest X-ray and imaging techniques, laboratory tests (blood chemistry and full blood count) and echocardiography or natriuretic peptide (or both).
- b)       Types and level of monitoring of the person with acute heart failure with non-invasive (laboratory tests, blood pressure, heart rate, heart rhythm, pulse oximeter techniques) and invasive (arterial line, central venous pressure lines) techniques.

#### **Management of acute heart failure**

- c)       Settings for care, including the value of specialist management units.

#### **Initial treatment**

##### *Oxygen and ventilatory support*

- d)       Ways to maximise oxygen delivery to the tissues to prevent multiple organ failure using supplementary oxygen and non-invasive (CPAP and NIPPV) or invasive ventilation.

##### *Pharmacological therapy*

- e)       Acute management with drug therapy, including diuretics, opiates, vasodilators, inotropic agents and vasopressors.

##### *Renal support*

- f) Level, type and timing (initiation and duration) of renal support.

### **Mechanical cardiac support**

- g) Mechanical circulatory assistance with intra-aortic balloon counterpulsation or ventricular assist devices

### **Treatment after stabilisation**

#### *Pharmacological therapy*

- h) Drug therapy for new-onset acute heart failure with angiotensin converting enzyme (ACE)-inhibitors, beta-blockers, mineralocorticoid receptor antagonists (aldosterone).

#### *Surgical or percutaneous treatment*

- i) The use of coronary revascularisation and valvular surgery where acute heart failure is a severe complication of other cardiac disorders.

#### *End-stage conservative management*

- j) The use of non-interventional treatment options (relief of distress, relief of pain).

### **Organisation of care**

- k) Transition from hospital to primary care after the acute phase.

#### **4.3.2 Clinical issues that will not be covered**

- a) The long-term management of underlying diseases and comorbidities of acute heart failure.
- b) The management of perioperative acute heart failure.
- c) The long-term management of pregnant women with acute heart failure.

- d) The long-term management of people with known congenital heart disease.

#### **4.4 *Main outcomes***

- a) Mortality.
- b) Major cardiovascular event (non-fatal myocardial infarction, stroke).
- c) Length of hospital stay and re-admission rates.
- d) Adverse events.
- e) Quality of life.

#### **4.5 *Economic aspects***

Developers will take into account both clinical and cost effectiveness when making recommendations involving a choice between alternative interventions. A review of the economic evidence will be conducted and analyses will be carried out as appropriate. The preferred unit of effectiveness is the quality-adjusted life year (QALY), and the costs considered will usually be only from an NHS and personal social services (PSS) perspective. Further detail on the methods can be found in 'The guidelines manual' (see 'Further information').

#### **4.6 *Status***

##### **4.6.1 *Scope***

This is the consultation draft of the scope. The consultation dates are 20 July to 17 August 2012.

##### **4.6.2 *Timing***

The development of the guideline recommendations will begin in October 2012.

## 5 Related NICE guidance

### 5.1 *Published guidance*

#### 5.1.1 NICE guidance to be updated

This is a new guideline.

#### 5.1.2 NICE guidance to be incorporated

There is no specific guidance to be incorporated.

#### 5.1.3 Other related NICE guidance

- [Patient experience in adult NHS services](#). NICE clinical guideline CG138 (2012).
- [Hypertension](#). NICE clinical guideline CG127 (2011).
- [Stable angina](#). NICE clinical guideline CG126 (2011).
- [Bivalirudin for the treatment of ST-segment elevation myocardial infarction \(STEMI\)](#). NICE technology appraisal guidance TA230 (2011).
- [Chronic heart failure](#). NICE clinical guideline CG108 (2010).
- [Chest pain of recent onset](#). NICE clinical guideline CG95 (2010).
- [Unstable angina and NSTEMI](#). NICE clinical guideline CG94 (2010).
- [Prasugrel for the treatment of acute coronary syndromes with percutaneous coronary intervention](#). NICE technology appraisal guidance TA182 (2009).
- [Type 2 diabetes - newer agents](#). NICE clinical guideline CG87 (2009).
- [Chronic kidney disease](#). NICE clinical guideline CG73 (2008).
- [Lipid modification](#). NICE clinical guideline CG67 (2008).
- [Smoking cessation services](#). NICE public health guidance PH10 (2008).
- [Varenicline for smoking cessation](#). NICE technology appraisal guidance TA123 (2007).
- [MI: secondary prevention](#). NICE clinical guideline CG48 (2007).
- [Cardiac resynchronisation therapy for the treatment of heart failure](#). NICE technology appraisal guidance TA120 (2007).

- [Short-term circulatory support with left ventricular assist devices as a bridge to cardiac transplantation or recovery](#). NICE interventional procedure guidance IPG177 (2006).
- [Atrial fibrillation](#). NICE clinical guideline CG36 (2006).
- [Brief interventions and referral for smoking cessation](#). NICE public health guidance PH1 (2006).
- [Coronary imaging: myocardial perfusion scintigraphy for the diagnosis and management of angina and myocardial infarction](#). NICE technology appraisal guidance TA73 (2003).

## **5.2 Guidance under development**

NICE is currently developing the following related guidance (details available from the NICE website):

- [Ivabradine for the treatment of chronic heart failure](#). NICE technology appraisal guidance. Publication expected December 2012.
- [Myocardial infarction with ST-segment-elevation](#). NICE clinical guideline. Publication expected July 2013.
- [MI – secondary prevention \(update\)](#). NICE clinical guideline. Publication expected July 2013.
- [Implantable cardioverter defibrillators for the treatment of arrhythmias and cardiac resynchronisation therapy for the treatment of heart failure \(review of TA95 and TA120\)](#). NICE technology appraisal guidance. Publication expected September 2013.
- [Lipid modification \(update\)](#). NICE clinical guideline. Publication date TBC.
- [Atrial fibrillation \(update\)](#). NICE clinical guideline. Publication date TBC.
- [Ticagrelor for the treatment of acute coronary syndromes \(ACS\)](#). NICE technology appraisal guidance. Publication date TBC.

## **6 Further information**

Information on the guideline development process is provided in the following documents, available from the NICE website:



- [‘How NICE clinical guidelines are developed: an overview for stakeholders the public and the NHS’](#)
- [‘The guidelines manual’](#).

Information on the progress of the guideline will also be available from the [NICE website](#).