NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health and social care directorate

Quality standards and indicators

Briefing paper

Quality standard topic: Acute heart failure: diagnosis and management
Output: Prioritised quality improvement areas for development
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Contents

1 Introduction

This briefing paper presents a structured overview of potential quality improvement areas for acute heart failure. It provides the Committee with a basis for discussing and prioritising quality improvement areas for development into draft quality statements and measures for public consultation.

1.1 Structure

This briefing paper includes a brief description of the topic, a summary of each of the suggested quality improvement areas and supporting information.

If relevant, recommendations selected from the key development source below are included to help the Committee in considering potential statements and measures.

1.2 Development source

The key development source referenced in this briefing paper is:

Acute heart failure (2014) NICE guideline CG187.

2 Overview

2.1 Focus of quality standard

This quality standard will cover the care of adults (aged 18 years or older) who have a diagnosis of acute heart failure, have possible acute heart failure, or are being investigated for acute heart failure. The long-term management of chronic heart failure is not covered in the quality standard as it is covered by a separate clinical guideline and quality standard referral (QS9).

2.2 Definition

Acute heart failure is rapid onset of a clinical syndrome where the heart is unable to pump adequate blood to provide for the needs of the body. It is caused by dysfunction of the heart due to muscle damage (systolic or diastolic dysfunction), valvular dysfunction, arrhythmias or other rare causes. Acute heart failure can present as new-onset heart failure in people without known cardiac dysfunction, or as acute decompensation of chronic heart failure.

2.3 Incidence and prevalence

Acute heart failure is a common cause of admission to hospital (over 67,000 admissions in England and Wales per year) and is the leading cause of hospital admission in people 65 years or older in the UK.

2.4 Management

See appendix 1 for the associated care pathway of acute heart failure from NICE clinical guideline 187.

2.5 National Outcome Frameworks

Tables 1–2 show the outcomes, overarching indicators and improvement areas from the frameworks that the quality standard could contribute to achieving.

Table 1 NHS Outcomes Framework 2015–16

Domain	Overarching indicators and improvement areas
1 Preventing people from dying prematurely	***Overarching indicators*** 1a Potential Years of Life Lost (PYLL) from causes considered amenable to healthcare i Adults 1b Life expectancy at 75 i Males ii Females
3 Helping people to recover from ill-health or following injury	***Overarching indicator*** 3b Emergency readmissions within 30 days of discharge from hospital (PHOF 4.11*)
4 Ensuring that people have a positive experience of care	***Overarching indicators*** 4b Patient experience of hospital care 4c Friends and family test ***Improvement areas*** **Improving people's experience of outpatient care** 4.1 Patient experience of outpatient services **Improving hospitals' responsiveness to personal needs** 4.2 Responsiveness to in-patients' personal needs **Improving people's experience of accident and emergency services** 4.3 Patient experience of A&E services
5 Treating and caring for people in a safe environment and protecting them from avoidable harm	***Overarching indicators*** 5a *Deaths attributable to problems in healthcare* *5b Severe harm attributable to problems in healthcare* ***Improvement area*** **Improving the culture of safety reporting** 5.6 Patient safety incidents reported
Alignment with Public Health Outcomes Framework * Indicator shared ** Indicator complementary *Indicators in italics are in development*	

Table 2 Public health outcomes framework for England, 2013–2016

Domain	Objectives and indicators
4 Healthcare public health and preventing premature mortality	***Objective*** Reduced numbers of people living with preventable ill health and people dying prematurely, while reducing the gap between communities ***Indicators*** 4.11 Emergency readmissions within 30 days of discharge* from hospital (NHSOF 3b) 4.13 Health-related quality of life for older people
Alignment with NHS Outcomes Framework * Indicator shared	

3 Summary of suggestions

3.1 Responses

In total 8 stakeholders responded to the 2-week engagement exercise 08/01/2015-22/01/2015.

Stakeholders were asked to suggest up to 5 areas for quality improvement. Specialist committee members were also invited to provide suggestions. The responses have been merged and summarised in table 3 for further consideration by the Committee.

NHS England’s patient safety division did not submit any data for this topic.

Full details of all the suggestions provided are given in appendix 5 for information.

Table 3 Summary of suggested quality improvement areas

Suggested area for improvement	Stakeholders
Organisation of care • Specialist heart failure team based on a cardiology ward • Early and continual input from a dedicated specialist heart failure team • A follow-up clinical assessment within 2 weeks of discharge	BSHF, ML, RCPE, RDENHSFT, SCM
Diagnosis, assessment and monitoring • Single measurement of serum natriuretic peptides (B type natriuretic peptide [BNP] or N terminal pro B type natriuretic peptide [NT proBNP]) and specific thresholds • Transthoracic Doppler 2D echocardiography	BSHF, RCPE, RD, RDENHSFT, SCM
Initial non-pharmacological treatment • Non-invasive ventilation without delay	SCM
Treatment after stabilisation • Continual beta-blocker treatment • Starting and re-starting beta-blocker treatment during hospital admission • 3 drug therapy	BSHF, RCPE, RDENHSFT, SCM
Additional areas • Cardiac rehabilitation programmes • Disease management programmes including community specialist heart failure nurses • Remote monitoring programmes • Inpatient up-titration of ACEI or beta-blockers • Myocarditis • Standardisation of drug treatments • Screening and detection of heart failure • Assessment for cardiac resynchronisation and defibrillator implantation • Access to specialist palliative care • Participation of Acute Trusts in the National Heart Failure Audit	BCFHT, BSHF, RCPE, RDENHSFT, SCM

BCFHT, Barnet and Chase Farm Hospitals NHS Trust
BSHF, British Society for Heart Failure
RDENHSFT, Royal Devon and Exeter NHS Foundation Trust
ML, Medtronic Limited
NHSE, NHS England
RCN, Royal College of Nursing
RCPE, Royal College of Physicians Edinburgh
RD, Roche Diagnostics
SCM, Specialist Committee Member

4 Suggested improvement areas

4.1 Organisation of care

4.1.1 Summary of suggestions

Specialist heart failure team based on a cardiology ward

The need for all admitted acute heart failure cases to be managed by heart failure specialists on a cardiology ward was highlighted by stakeholders. The 2012-13 Annual National Heart Failure Audit Report[1] also supported this team based on a cardiology ward as being beneficial to patient outcomes with referrals to heart failure follow-up services increasing by two-fold. The provision of outreach services by specialist heart failure teams was also highlighted as important.

Early and continual input from a dedicated specialist heart failure team

Specialist management was supported by stakeholders to improve mortality and morbidity rates and quality of life with improved access to specialist follow-up on discharge, exercise programmes and palliative care services. A dedicated specialist heart failure team with early team involvement was also highlighted to enable easy access to cost-effective and continual care; positively contributing to rapid diagnosis and the implementation of life-saving and life enhancing care. Continual input will also ensure appropriate care with stability before discharge for example and noticeably longer lengths of stay.

A follow-up clinical assessment within 2 weeks of discharge

A stakeholder supported early specialist heart failure follow-up within a limit of 2 weeks of discharge to reduce early readmissions and achieve better long-term outcomes. However another stakeholder argued that 2 weeks may be too long for some patients. This period should be viewed as the limit rather than the target. This assessment should also be conducted by the most appropriate clinical team member.

4.1.2 Selected recommendations from development source

Table 4 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 4 to help inform the Committee's discussion.

[1] The 2012-13 Annual National Heart Failure Audit Report, National Institute for Cardiovascular Outcomes Research (NICOR) (2013)

Table 4 Specific areas for quality improvement

Suggested quality improvement area	Suggested source guidance recommendations
Organisation of care	**Specialist heart failure team based on a cardiology ward** NICE CG187 Recommendation 1.1.1 (KPI) **Early and continual input from a dedicated specialist heart failure team** NICE CG187 Recommendation 1.1.2 (KPI) **A follow-up clinical assessment within 2 weeks of discharge** NICE CG187 Recommendation 1.1.4

Specialist heart failure team based on a cardiology ward

NICE CG187 – Recommendation 1.1.1 (key priority for implementation)

All hospitals admitting people with suspected acute heart failure should provide a specialist heart failure team that is based on a cardiology ward and provides outreach services.

Early and continual input from a dedicated specialist heart failure team

NICE CG187 – Recommendation 1.1.2 (key priority for implementation)

Ensure that all people being admitted to hospital with suspected acute heart failure have early and continuing input from a dedicated specialist heart failure team.

A follow-up clinical assessment within 2 weeks of discharge

NICE CG187 – Recommendation 1.1.4

A follow-up clinical assessment should be undertaken by a member of the specialist heart failure team within 2 weeks of the person being discharged from hospital.

4.1.3 Current UK practice

Specialist input

The National Audit Report[2] concluded that over 50% of all admitted patients were seen by a cardiologist with over 20% seen by a heart failure nurse specialist, and 6% seen by another consultant with a specific remit for heart failure patients . Overall approximately 80% of patients were seen by a heart failure specialist in some capacity, both on first admission and on readmission. It was also noted that patients could be seen by more than one of the above heart failure specialists. The audit

[2] The 2012-13 Annual National Heart Failure Audit Report, National Institute for Cardiovascular Outcomes Research (NICOR) (2013)

concluded that better treatment and management of heart failure, including higher levels of specialist input reflects improved health outcomes.

A follow-up clinical assessment within 2 weeks of discharge

The National Audit Report[3] also concluded that over 50% of patients were referred for a follow-up appointment with the heart failure multidisciplinary team (MDT) on discharge, and only a third of these had their appointment planned for within 2 weeks of leaving hospital.

[3] The 2012-13 Annual National Heart Failure Audit Report, National Institute for Cardiovascular Outcomes Research (NICOR) (2013)

4.2 Diagnosis, assessment and monitoring

4.2.1 Summary of suggestions

Single measurement of serum natriuretic peptides (B-type natriuretic peptide [BNP] or N-terminal pro-B-type natriuretic peptide [NT-proBNP]) and specific thresholds

Heart failure diagnosis was highlighted as often challenging. Stakeholders positively supported serum natriuretic peptide testing and the use of natriuretic peptides to allow earlier identification and consequential early access to appropriate specialist care and management leading to potentially improved outcomes.

Early implementation of B-type natriuretic peptide (BNP) testing was also supported for its high sensitivity to positively rule out acute heart failure in patients presenting with acute breathlessness and suspected acute heart failure. BNP testing could also allow other diagnoses to be considered and appropriate treatments started. This testing was highlighted as cost-effective in comparison to the current standard diagnostic approach of history, examination and early investigation without BNP.

'Routine' measurement of pro-B-type natriuretic peptides where the diagnosis is already known was however discouraged as it was deemed unlikely to improve management.

Another stakeholder comment that they believed that this testing threshold has been set too low and will adversely affect the numbers of patients that specialist services or cardiologists are asked to see. Many of these patients will be elderly or have other co-morbidities such as atrial fibrillation or chronic kidney disease and not heart failure. Therefore this was felt to be a detrimental resource impact.

Transthoracic Doppler 2D echocardiography

Echocardiography was highlighted by a stakeholder as a key investigation in suspected heart failure allowing identification of cardiac structural and functional abnormalities to guide specialist management. Also this investigation was reported as essential to confirm or exclude an acute heart failure diagnosis and establish the likely cause of this which will determine the most effective treatment.

Another stakeholder emphasised that in view of the implications of acute heart failure diagnosis plus the seriousness of the condition the sooner this can be achieved the greater the likelihood of improved outcome. Rapid access to echocardiography will enable appropriate treatment, best outcome and efficient resource use. A stakeholder argued that performing the echocardiography should be earlier than the NICE CG187 recommendation of 48 hours to ensure best care from the outset.

4.2.2 Selected recommendations from development source

Table 5 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 5 to help inform the Committee's discussion.

Table 5 Specific areas for quality improvement

Suggested quality improvement area	Selected source guidance recommendations
Diagnosis, assessment and monitoring	**Single measurement of serum natriuretic peptides (B-type natriuretic peptide [BNP] or N-terminal pro-B-type natriuretic peptide [NT-proBNP]) and specific thresholds** NICE CG187 Recommendation 1.2.2 (KPI)
	Transthoracic Doppler 2D echocardiography NICE CG187 Recommendations 1.2.3 (KPI) and 1.2.4 (KPI)

Single measurement of serum natriuretic peptides (B-type natriuretic peptide [BNP] or N-terminal pro-B-type natriuretic peptide [NT-proBNP]) and specific thresholds

NICE CG187- Recommendation 1.2.2 (key priority for implementation)

In people presenting with new suspected acute heart failure, use a single measurement of serum natriuretic peptides (B-type natriuretic peptide [BNP] or N-terminal pro-B-type natriuretic peptide [NT-proBNP]) and the following thresholds to rule out the diagnosis of heart failure:

- BNP less than 100 ng/litre
- NT-proBNP less than 300 ng/litre.

Transthoracic Doppler 2D echocardiography

NICE CG187- Recommendation 1.2.3 (key priority for implementation)

In people presenting with new suspected acute heart failure with raised natriuretic peptide levels (see recommendation 1.2.2), perform transthoracic Doppler 2D echocardiography to establish the presence or absence of cardiac abnormalities.

NICE CG187- Recommendation 1.2.4 (key priority for implementation)

In people presenting with new suspected acute heart failure, consider performing transthoracic Doppler 2D echocardiography within 48 hours of admission to guide early specialist management.

4.2.3 Current UK practice

Single measurement of serum natriuretic peptides (B-type natriuretic peptide [BNP] or N-terminal pro-B-type natriuretic peptide [NT-proBNP]) and specific thresholds

Approximately 67,000 people with acute heart failure were admitted into hospital in England in 2012-13[4]. Of these people, 44%[5] (29,500 people) would be likely to have new suspected acute heart failure and be subject to B-type natriuretic peptide [BNP] or N-terminal pro-B-type natriuretic peptide [NT-proBNP] testing under this guideline

The NHS Atlas of Variation in Diagnostic Services[6] examined the estimated annual BNP testing rate per PCT. This testing rate ordered by GPs ranged from 0.05 to 14.4 per 1000 practice population (297-fold variation). When exclusions were applied the variation was still marked at 89-fold. One reason for the testing variation was reported differences in this pathway uptake by GPs and local cardiac services.

Transthoracic Doppler 2D echocardiography

A stakeholder highlighted that, based on their own knowledge, current echocardiography provision is oversubscribed and underfunded leading to inadequate service in many hospitals.

The NHS Atlas[7] also examined the rate of echocardiography activity undertaken in 2012-13 per weighted PCT population. A noticeable variation was reported with a 34-fold variation ranging from 1.2 to 42.0 per weighted population. However the degree of variation was only 3.7 fold when exclusions were applied. In conclusion, the availability of BNP tests has not reduced the demand for echocardiography for several reasons such as its specificity level means that it does not replace echocardiography.

[4] Hospital Episode Statistics for England. Inpatient statistics, 2012–13. The Health and Social Care Information Centre,
[5] Nicol ED, Fittall B, Roughton M et al. (2008) NHS heart failure survey: a survey of acute heart failure admissions in England, Wales and Northern Ireland. Heart 94: 172–7.
[6, 7] 2013 NHS Atlas of Variation in Diagnostic Services- Reducing unwarranted variation to increase value and improve quality, Public Health England (2013)

4.3 Initial non-pharmacological treatment

4.3.1 Summary of suggestions

Non-invasive ventilation without delay

Non-invasive ventilation is a potential replacement of invasive ventilation to assist some patients with respiratory distress. Patients with acute heart failure resulting in acute pulmonary oedema are frequently offered non-invasive ventilation. However, whether or not non-invasive ventilation impacts on patients' mortality, the need for invasive ventilation and the length of hospital stay is unclear and is investigated in NICE CG187 (full guideline).

A stakeholder supported the use of early non-invasive ventilation in people with acute heart failure, severe dyspnoea and acidaemia or in those whose condition has failed to respond to medical therapy.

4.3.2 Selected recommendations from development source

Table 6 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 6 to help inform the Committee's discussion.

Table 6 Specific areas for quality improvement

Suggested quality improvement area	Selected source guidance recommendations
Initial non-pharmacological treatment	**Non-invasive ventilation without delay** NICE CG187 Recommendation 1.4.2

Non-invasive ventilation without delay

NICE CG187- Recommendation 1.4.2

If a person has cardiogenic pulmonary oedema with severe dyspnoea and acidaemia consider starting non-invasive ventilation without delay:

- at acute presentation **or**
- as an adjunct to medical therapy if the person's condition has failed to respond.

4.3.3 Current UK practice

Non-invasive ventilation without delay

No published studies on current UK practice were highlighted for this suggested area for quality improvement; this area is based on stakeholder's knowledge and experience.

The Guideline Development Group of NICE CG187 (full guideline) however examined meta-analysis for patients receiving non-invasive ventilation. The analysis reported its association with lower mortality and intubation rates, without any increase in major cardiovascular adverse events, including myocardial infarction. There was no improvement in quality of life associated with use of non-invasive ventilation, or change in length of hospital stay, but one study (Kelly 2002) did report its association with shorter intensive and longer coronary unit care.

In conclusion, the GDG highlighted that the majority of patients in the UK presenting with acute heart failure will have an acute decompensation of chronic heart failure. Therefore the patient members emphasised that it is important, in common with all intensive and potentially harmful treatments, that non-invasive ventilation should only be commenced if this is in accordance with any advanced treatments the patients may be taking.

4.4 Treatment after stabilisation

4.4.1 Summary of suggestions

Continual beta-blocker treatment

A stakeholder emphasised the importance of continual beta-blocker treatment in appropriate patients as they reported that this treatment is often discontinued when people present with acute heart failure due to concern that this treatment may exacerbate cardiac failure during acute presentation. A stakeholder emphasised that it is vital that this practice is changed as per recommendation 1.5.1 in NICE clinical guideline 187.

Starting and re-starting beta-blocker treatment during hospital admission

Starting or re-starting beta-blocker treatment, when appropriate, was reported as having a potential beneficial effect on heart failure outcome. A stakeholder supported nurse intervention as it has been demonstrated to improve outcomes by reducing readmissions. Also cardiac rehabilitation was highlighted to improve patient quality of life and cardiovascular risk factors.

The prescription of beta-blockers in these patients was also encouraged to improve consistency in practice and also lead to an overall increase in appropriate beta-blocker usage.

3 drug therapy (beta-blockers, angiotensin converting enzyme inhibitors, and aldosterone antagonists)

The introduction (or reintroduction) of three disease modifying drugs was supported as important by a stakeholder for admitted patients, once stabilised, with acute heart failure due to left ventricular systolic dysfunction (LVSD) .They were also reported as beneficial to reduce premature mortality, readmissions and improve wellbeing.

4.4.2 Selected recommendations from development source

Table 7 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 7 to help inform the Committee’s discussion.

Table 7 Specific areas for quality improvement

Suggested quality improvement area	Selected source guidance recommendations
Treatment after stabilisation	**Continual beta-blocker treatment** NICE CG187 Recommendation 1.5.1(KPI)
	Starting and re-starting beta-blocker treatment during hospital admission NICE CG187 Recommendations 1.5.2 (KPI) and 1.5.3 (KPI)
	3 drug therapy NICE CG187 Recommendation 1.5.4 (KPI)

Continual beta-blocker treatment

NICE CG187- Recommendation 1.5.1(key priority for implementation)

In a person presenting with acute heart failure who is already taking beta-blockers, continue the beta-blocker treatment unless they have a heart rate less than 50 beats per minute, second or third degree atrioventricular block, or shock.

Starting and re-starting beta-blocker treatment during hospital admission

NICE CG187- Recommendation 1.5.2 (key priority for implementation)

Start or restart beta-blocker treatment during hospital admission in people with acute heart failure due to left ventricular systolic dysfunction, once their condition has been stabilised – for example, when intravenous diuretics are no longer needed.

NICE CG187- Recommendation 1.5.3 (key priority for implementation)

Ensure that the person's condition is stable for typically 48 hours after starting or restarting beta-blockers and before discharging from hospital.

3 drug therapy

NICE CG187- Recommendation 1.5.4 (key priority for implementation

Offer an angiotensin-converting enzyme inhibitor (or angiotensin receptor blocker if there are intolerable side effects) and an aldosterone antagonist during hospital admission to people with acute heart failure and reduced left ventricular ejection fraction. If the angiotensin-converting enzyme inhibitor (or angiotensin receptor blocker) is not tolerated an aldosterone antagonist should still be offered.

4.4.3 Current UK practice

Continual beta-blocker treatment

No published studies on current UK practice were highlighted for this suggested area for quality improvement; this area is based on stakeholder's knowledge and experience.

Starting and re-starting beta-blocker treatment during hospital admission

The National Audit Report[8] concluded that 85% of patients with LSVD, and without a stated contraindication, were prescribed an ACE inhibitor or an ARB and 82% were prescribed a beta-blocker. Prescription rates for ACE inhibitors and beta-blockers were all found to be higher when patients were admitted to cardiology wards or seen by the heart failure team. However it was argued that although prescription rates are fairly high, they do not include patients for whom the therapies are contraindicated; thus prescription rates for ACE inhibitor and beta-blocker should be at or near 100%.

3 drug therapy

The National Audit Report[9] consistently noted variation in the usage of these specific drugs between hospitals with age also being a factor. It was highlighted that these drugs improve prognosis, reduce risk for readmission and have better outcomes following discharge than those discharged on other trio combinations.

[8,9] The 2012-13 Annual National Heart Failure Audit Report, National Institute for Cardiovascular Outcomes Research (NICOR) (2013)

4.5 Additional areas

4.5.1 Summary of suggestions

The improvement areas below were suggested as part of the stakeholder engagement exercise however were felt either to be outside the remit of the quality standard referral and the development source (NICE guidance) or require further discussion by the Committee to establish potential for statement development.

There will be an opportunity for the QSAC to discuss these areas at the end of the session on 3 March 2015.

- **Cardiac rehabilitation programmes**

Two stakeholders reported a need for cardiac rehabilitation programmes which was recommended in the 2010 Chronic Heart Failure NICE Clinical Guideline 108, and was felt to be applicable to the acute heart failure population once stable. Ideally, the programme will provide exercise alongside other initiatives such as psychological and holistic support to address the process of change for these patients and their families. These programmes may also importantly provide the basis for subsequent self-management. It was reported that older patients and women are less likely to be offered exercise rehabilitation.

- **Disease management programmes including community specialist heart failure nurses**

A stakeholder highlighted the importance of disease management programmes with also the involvement of community heart failure specialist nurses as an integral part of heart failure management in the vast majority of UK areas.

- **Remote monitoring programmes**

A stakeholder highlighted the importance of remote monitoring programmes to be cost-effective and reduce admission rates and mortality. However the stakeholder also reported a lack of standardisation across the NHS with more development work needed in this area.

- **Inpatient up-titration of ACEI or beta-blockers**

A stakeholder highlighted that despite the scope of the Acute Heart Failure NICE Clinical Guideline 187 not including inpatient up-titration of ACEI or beta-blockers this is however good practice and could be considered.

- **Myocarditis**

A stakeholder highlighted that there is need for greater emphasis on considering the aetiology of acute heart failure, particularly in those aged under 50 years. Rather than treating symptoms it is vital to ensure that the cause, for example genetic or myocarditis, is identified with appropriate referral.

- **Standardisation of drug treatments**

A stakeholder highlighted the importance of standardising drug treatments as it has enabled a positive change in the treatment and management of heart failure.

- **Screening and detection of heart failure**

A stakeholder emphasised how acute heart failure is common, particularly in high risk groups for example post Myocardial Infarction, hypertension, renal impairment and Atrial Fibrillation. Therefore early detection and treatment can reduce the risk of major adverse cardiovascular events.

- **Assessment for cardiac resynchronisation and defibrillator implantation**

A stakeholder raised the importance of cardiac resynchronisation and defibrillator implantation in appropriate patients as this can improve symptoms and overall quality of life plus reduce hospitalisations and mortality.

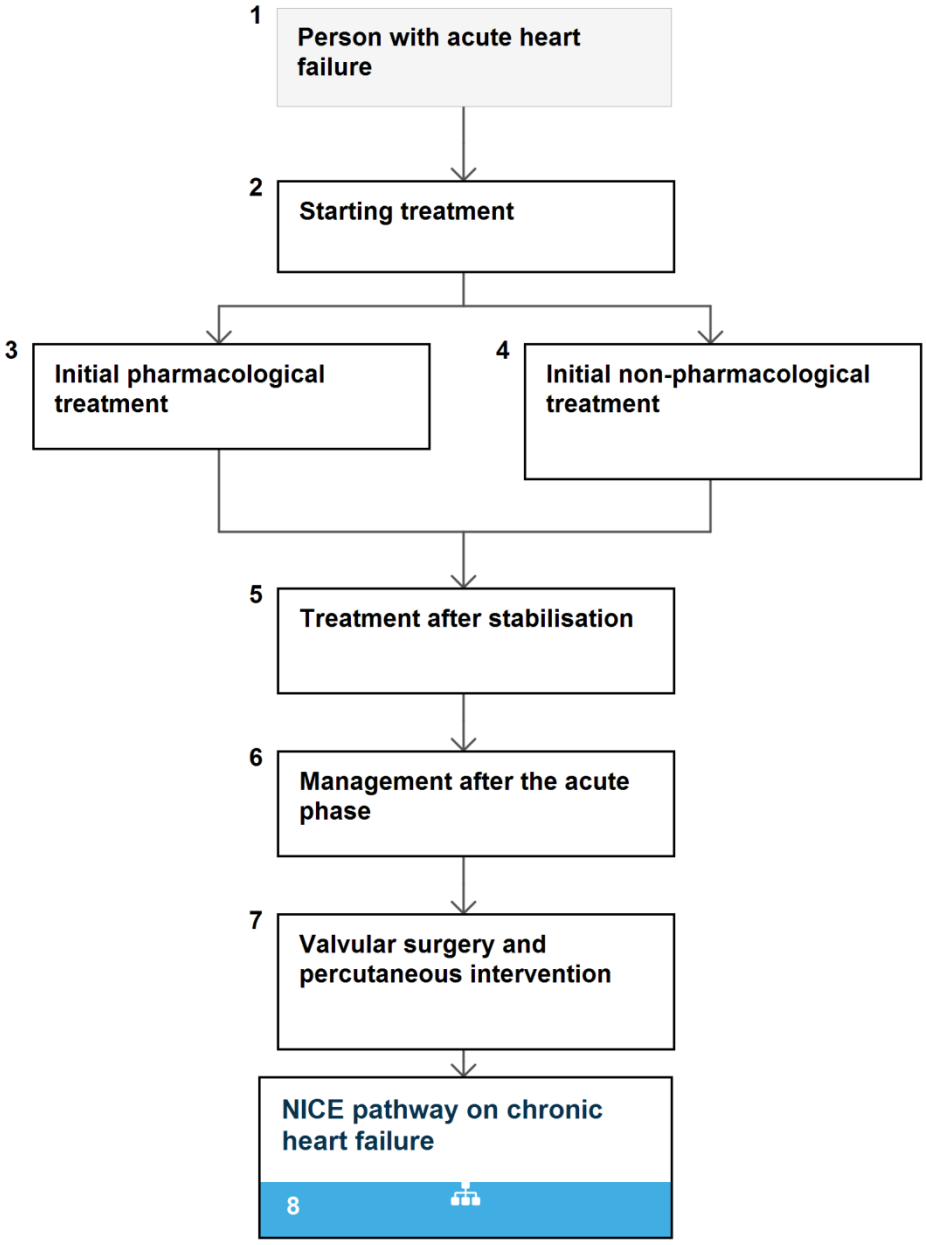
- **Access to specialist palliative care**

Two stakeholders supported access to a specialist palliative care physician with an interest in heart failure to provide additional leadership; improving standards and patient care from onset with access to specialist palliative care services. This access is concluded as poor, albeit improving, in the National Audit of Heart Failure report.

- **Participation of Acute Trusts in the National Heart Failure Audit**

A stakeholder raised the importance of Acute Trusts participation in the National Heart Failure Audit as this is mandatory and affects the practice tariff. This Audit also allows Acute Trusts to compare performance data.

Appendix 1: Care pathway of acute heart failure (NICE clinical guideline CG187)



Appendix 2: Additional information

2011 Chronic Heart Failure Quality Standard (QS9) Statements

Statement 1. People presenting in primary care with suspected heart failure and previous myocardial infarction are referred urgently, to have specialist assessment including echocardiography within 2 weeks.

Statement 2. People presenting in primary care with suspected heart failure without previous myocardial infarction have their serum natriuretic peptides measured.

Statement 3. People referred for specialist assessment including echocardiography, either because of suspected heart failure and previous myocardial infarction or suspected heart failure and high serum natriuretic peptide levels, are seen by a specialist and have an echocardiogram within 2 weeks of referral.

Statement 4. People referred for specialist assessment including echocardiography because of suspected heart failure and intermediate serum natriuretic peptide levels are seen by a specialist and have an echocardiogram within 6 weeks of referral.

Statement 5. People with chronic heart failure are offered personalised information, education, support and opportunities for discussion throughout their care to help them understand their condition and be involved in its management, if they wish.

Statement 6. People with chronic heart failure are cared for by a multidisciplinary heart failure team led by a specialist and consisting of professionals with appropriate competencies from primary and secondary care, and are given a single point of contact for the team.

Statement 7. People with chronic heart failure due to left ventricular systolic dysfunction are offered angiotensin-converting enzyme inhibitors (or angiotensin II receptor antagonists licensed for heart failure if there are intolerable side effects with angiotensin-converting enzyme inhibitors) and beta-blockers licensed for heart failure, which are gradually increased up to the optimal tolerated or target dose with monitoring after each increase.

Statement 8. People with stable chronic heart failure and no precluding condition or device are offered a supervised group exercise-based cardiac rehabilitation programme that includes education and psychological support.

Statement 9. People with stable chronic heart failure receive a clinical assessment at least every 6 months, including a review of medication and measurement of renal function.

Statement 10. People admitted to hospital because of heart failure have a personalised management plan that is shared with them, their carer(s) and their GP.

Statement 11. People admitted to hospital because of heart failure receive input to their management plan from a multidisciplinary heart failure team.

Statement 12. People admitted to hospital because of heart failure are discharged only when stable and receive a clinical assessment from a member of the multidisciplinary heart failure team within 2 weeks of discharge.

Statement 13. People with moderate to severe chronic heart failure, and their carer(s), have access to a specialist in heart failure and a palliative care service.

Appendix 3: Key priorities for implementation (CG187)

Recommendations that are key priorities for implementation in the source guideline and that have been referred to in the main body of this report are highlighted in grey.

Organisation of care

All hospitals admitting people with suspected acute heart failure should provide a specialist heart failure team that is based on a cardiology ward and provides outreach services. [recommendation 1.1.1]

Ensure that all people being admitted to hospital with suspected acute heart failure have early and continuing input from a dedicated specialist heart failure team. [recommendation 1.1.2]

Diagnosis, assessment and monitoring

In people presenting with new suspected acute heart failure, use a single measurement of serum natriuretic peptides (B-type natriuretic peptide [BNP] or N-terminal pro-B-type natriuretic peptide [NT-proBNP]) and the following thresholds to rule out the diagnosis of heart failure.

- BNP less than 100 ng/litre
- NT-proBNP less than 300 ng/litre. [recommendation 1.2.2]

In people presenting with new suspected acute heart failure with raised natriuretic peptide levels (see recommendation 1.2.2), perform transthoracic Doppler 2D echocardiography to establish the presence or absence of cardiac abnormalities. [recommendation 1.2.3]

In people presenting with new suspected acute heart failure, consider performing transthoracic Doppler 2D echocardiography within 48 hours of admission to guide early specialist management. [recommendation 1.2.4]

Treatment after stabilisation

In a person presenting with acute heart failure who is already taking beta-blockers, continue the beta-blocker treatment unless they have a heart rate less than 50 beats per minute, second or third degree atrioventricular block, or shock.

[recommendation 1.5.1]

Start or restart beta-blocker treatment during hospital admission in people with acute heart failure due to left ventricular systolic dysfunction, once their condition has been stabilised – for example, when intravenous diuretics are no longer needed. [recommendation 1.5.2]

Ensure that the person's condition is stable for typically 48 hours after starting or restarting beta-blockers and before discharging from hospital.

[recommendation 1.5.3]

3 drug therapy

Offer an angiotensin-converting enzyme inhibitor (or angiotensin receptor blocker if there are intolerable side effects) and an aldosterone antagonist during hospital admission to people with acute heart failure and reduced left ventricular ejection fraction. If the angiotensin-converting enzyme inhibitor (or angiotensin receptor blocker) is not tolerated an aldosterone antagonist should still be offered. [recommendation 1.5.4]

Appendix 4: Glossary

Angiotensin II receptor antagonist/ angiotensin receptor blocker A group of drugs usually prescribed for those patients who are intolerant of ACE inhibitors. Rather than lowering levels of angiotensin II, they instead prevent the chemical from having any effect on blood vessels.

Angiotensin-converting enzyme inhibitor A group of drugs used primarily for the treatment of high blood pressure and heart failure. They stop the body's ability to produce angiotensin II, a hormone which causes blood vessels to contract, thus dilating blood vessels and increasing the supply of blood and oxygen to the heart.

Beta-blocker A group of drugs which slow the heart rate, decrease cardiac output and lessen the force of heart muscle and blood vessel contractions. Used to treat abnormal or irregular heart rhythms, and abnormally fast heart rates.

Echocardiography A diagnostic test which uses ultrasound to create two dimensional images of the heart. This allows clinicians to examine the size of the chambers of the heart and its pumping function in detail, as well as examine valves and the myocardium (heart muscle).

Left ventricular systolic dysfunction Any functional impairment of the left ventricle of the heart

Appendix 5: Suggestions from stakeholder engagement exercise

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
Organisation of care					
01	SCM1	The provision of a dedicated specialist heart failure team to manage patients admitted with AHF.	Specialist management is associated with lower mortality and is cost-effective when compared to standard care (NICE CG187).	A proportion of patients in the NHS with AHF are admitted to cardiology wards / specialist units but many are admitted to general medical wards via acute assessment units (which is the current practice at my institution) as part of the general medical take. There is no standardisation of practice across hospitals in the NHS and factors determining patient disposition are variable (National Heart Failure Audit).A Quality Standard related to care of AHF patients by a specialist management team would be beneficial: it would reduce inconsistency, improve outcome and encourage cost-effective care.	NICE CG187 Diagnosis and Management of acute heart failure in adults.Cleland J, Dargie H, Hardman S, McDonagh T, and Mitchell P. National Heart Failure Audit. April 21 2012 - March 2013. London. National Insititute for Cardiovascular Outcomes Research (NICOR), 22 2013. Available from: 23 http://www.ucl.ac.uk/nicor/audits/heartfailure/additionalfiles/pdfs/annualreports/NHFA13me24dium.pdf
02	SCM5	All hospitals admitting people with suspected acute heart failure should provide a specialist heart failure team that is based on a cardiology ward and provides outreach services.	There is good evidence that this mitigates against high inpatient and subsequent mortality for patients admitted to hospital with heart failure, both new heart failure (HF) and decompensated but previously diagnosed HF. This is recommended by	A consistent finding from the recent annual National HF Audit reports, has been a much lower mortality for patients admitted to cardiology wards, when compared with those managed elsewhere. The quality of inpatient care during an acute heart failure admission also determines subsequent mortality, with a lower mortality evident at 12 months, and beyond 3 years, for	2014 NICE Acute HF Guideline

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			NICE and was a key priority for implementation.	those patients cared for within the cardiology ward, as compared with those looked after elsewhere. Currently across the UK there is marked variation in outcomes for patients admitted to hospital with acute HF depending upon the extent and organisation of acute HF services (evident from the National HF Audit).NICE modelling which utilised National HF Audit data suggests cardiology ward based care from the HF team, with outreach support for the fewer patients in whom other conditions suggest a different specialist ward should prioritise, is highly cost effective.	
03	SCM5	Ensure that all people being admitted to hospital with suspected acute heart failure have early and continuing input from a dedicated specialist heart failure team.	This is another key priority for implementation identified by the Acute HF GDG. The earlier the HF team is involved the more rapidly a diagnosis can be made and life saving and life enhancing care implemented. Continuing input will ensure appropriate care and best use of a valuable resource – inpatient beds.	A consistent finding from the recent annual National HF Audit reports, has been a much lower mortality for patients admitted to cardiology wards, when compared with those managed elsewhere. The quality of inpatient care during an acute heart failure admission also determines subsequent mortality, with a lower mortality evident at 12 months, and beyond 3 years, for those patients cared for within the cardiology ward, as compared with those looked after elsewhere. Currently across the UK there is marked variation in outcomes for patients admitted to hospital with acute HF depending upon the extent and organisation of acute HF services (evident from the National HF Audit).NICE modelling which utilised National HF Audit data suggests cardiology ward based care from the HF team, with outreach support for the fewer patients in whom other conditions suggest a different specialist ward should prioritise, is highly cost effective.	2014 NICE Acute HF Guideline 2012-13 National Heart Failure Audit (and earlier National HF Audits). http://www.ucl.ac.uk/nicor/audits/heartfailure/documents/annualreports/hfannual

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04	SCM5	A follow-up clinical assessment should be undertaken by a member of the specialist heart failure team within 2 weeks of the person being discharged from hospital.	Assuming care in keeping with recent NICE guidance and patient stability prior to discharge, early readmissions can be minimised and better long-term outcomes can be achieved by ensuring early specialist HF follow up, within a limit of 2 weeks. This should be from the most appropriate member of the team and will for different patients involve the cardiologist, the specialist nurse and for some the GP or care of the elderly physician. This is a recommendation originally from the Chronic HF Guidance (2010) and the related Quality standards (20111) but since it is so pertinent to acute HF, the GDG with NICE support also identified this as a key priority for implementation in the 2014 Acute HF guidance.	The benefit of early specialist follow up has been described in numerous randomised controlled trials of interventions in HF care, and provides opportunities to identify a range of problems which undetected may precipitate a later admission. Patients describe early follow up as life enhancing and this early support can ensure better compliance and engagement with their HF team, better psychological well being and overall improved long-term outcomes. Two weeks may be too long for some patients and this period should be viewed as the limit, rather than the target.The National HF Audit demonstrates the benefit of cardiology, and of HF nurse specialist, follow up, and the variability with which this essential of HF care is implemented across the UK.	2014 NICE Acute HF Guideline http://www.nice.org.uk/guidance/cg1872012-13 National Heart Failure Audit (and earlier National HF Audits).http://www.ucl.ac.uk/nicor/audits/heartfailure/documents/annualreports/hfannual
05	SCM4	That all cases of Acute HF (Heart Failure) are managed on a cardiology ward	There is significant variation in mortality rates dependent on the quality of treatment received by patients. For mortality, there is marked improvement associated with treatment in a cardiology ward and prescription of evidence-based therapies, seen not only in single-variable analysis, but also in multivariate analysis, when other confounding factors are taken into	In-hospital mortality varies by the main place of care of the patient. Only 7% of patients treated in cardiology wards died in hospital compared with 11.4% of patients treated on general medical wards and 14.4% of patients treated on other wards.	The National Heart Failure Audit.The audit is funded and commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of their National Clinical Audit and Patient Outcomes Programme (NCAPOP). http://www.ucl.ac.uk/nic

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			account. Notably, in-hospital mortality stood at 7% for patients treated on cardiology wards, compared to 11% for those treated on general medical wards and 14% for patients treated on other wards. Additionally, patients treated on cardiology wards and those seen by heart failure specialists are more likely to receive referrals to heart failure follow-up services, which are shown in the Audit to have a beneficial impact on outcomes.		or/audits/heartfailure/reports NB: the 2014 audit is pending publication and may be made available to NICE for this Quality Standard exercise.
06	SCM4	That all cases of Acute HF are under the care of a cardiologist	There is significant variation in mortality rates dependent on the quality of treatment received by patients. For mortality, there is marked improvement associated with treatment in a cardiology ward and prescription of evidence-based therapies, seen not only in single-variable analysis, but also in multivariate analysis, when other confounding factors are taken into account.	Heart failure specialists appear more rigorous in ensuring patients receive optimal care and are stable prior to discharge, which is expected to translate into better outcomes including fewer early readmissions to hospital and a lower mortality. In-hospital mortality varies by the main place of care of the patient. Only 7% of patients treated in cardiology wards died in hospital compared with 11.4% of patients treated on general medical wards and 14.4% of patients treated on other wards.	The National Heart Failure Audit. The audit is funded and commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of their National Clinical Audit and Patient Outcomes Programme (NCAPOP). http://www.ucl.ac.uk/nicor/audits/heartfailure/reports NB: the 2014 audit is pending publication and may be made available to NICE for this Quality Standard exercise.
	SCM4	That all cases of Acute HF are	Patients who had specialist input have	Heart failure specialists appear more rigorous in	The National Heart Failure

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07		under the care of an MDT (Multi-disciplinary Team, comprising, as a minimum, a cardiologist, HF Nurse) lead by a cardiologist	noticeably longer mean and median lengths of stay compared to those without specialist input into their care. This provides support to the claim that specialist cardiology clinicians spend more time up-titrating therapies and ensuring stability prior to discharge, resulting in longer hospital admissions.	ensuring patients receive optimal care and are stable prior to discharge, which is expected to translate into better outcomes including fewer early readmissions to hospital and a lower mortality. In-hospital mortality varies by the main place of care of the patient. Only 7% of patients treated in cardiology wards died in hospital compared with 11.4% of patients treated on general medical wards and 14.4% of patients treated on other wards.	Audit. The audit is funded and commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of their National Clinical Audit and Patient Outcomes Programme (NCAPOP). http://www.ucl.ac.uk/nicor/audits/heartfailure/reports NB: the 2014 audit is pending publication and may be made available to NICE for this Quality Standard exercise.
08	SCM4	A greater emphasis on referral to HF follow-up and rehabilitation services on discharge	Patients treated on cardiology wards and those seen by heart failure specialists are more than twice as likely to receive referrals to heart failure follow-up services, which are shown to have a beneficial impact on outcomes.	Over half of the patients in the most recent audit were referred for cardiology follow-up, and almost 60% were referred for follow-up with a heart failure nurse specialist, although only 10% of patients were referred to cardiac rehabilitation services.¶In the most recent HF audit 10% of patients were referred to a cardiac rehabilitation programme on discharge. The Cardiovascular Disease Outcomes Strategy, published in March 2013, sets an aim for hospitals to refer a third of heart failure patients to cardiac rehabilitation programmes.	The National Heart Failure Audit.The audit is funded and commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of their National Clinical Audit and Patient Outcomes Programme (NCAPOP). http://www.ucl.ac.uk/nicor/audits/heartfailure/reports NB: the 2014 audit is pending publication and may be made available to

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					NICE for this Quality Standard exercise.
09	Royal College of Physicians of Edinburgh	Organisation of care within the hospital for patients admitted with acute heart failure: 1. All hospitals admitting patient with acute heart failure should provide a specialist heart failure team. The heart failure team is based on a cardiology ward and provides outreach services 2. All hospitalised patients with acute heart failure should receive early and continuing input from the specialist heart failure team	These are two major recommendations on the organisation of care within hospitals as described in NICE clinical guideline 187. They are of paramount importance for the following reasons: 1.There is compelling large scale evidence from the annual National Heart Failure Audit in England and Wales documenting that patients receive varying levels of care with different outcomes dependent on whether they were seen and/or cared for by a specialist cardiology team or not. The variability in the implementation of pharmacological therapy known to affect the prognosis in the patients with heart failure due to left ventricular systolic dysfunction, is the main difference between patients cared for on general wards or cardiology wards. It is not acceptable to allow this variation to continue, thus depriving patients from receiving therapy known to reduce hospitalisation risk and improve survival. NICE was correct in recognising	With repeated demonstration of variability of outcome between patients admitted into general medical wards and those admitted into cardiology wards across England and Wales, with the demonstrable differences in re-hospitalisation and mortality, it is a key priority to instigate changes to the delivery of the service in order to address this variability. At the same time, it will be prudent that the checks and balances implied in the recommendation by NICE are respected. It would not be possible as an example to expect the cardiology wards to admit all the patients with acute heart failure irrespective of their other potentially complicated health needs which may not necessarily be best met on a cardiology ward. Therefore, it is vital that these two recommendations are combined into a quality standard that provides the patients with improved care, improved outcomes but without the adverse consequences of filling the cardiology bed capacity with patients whose other important needs are best met elsewhere.Part of the recommendation, therefore, must address how best to recognise these two patient groups.	Repeated results of the National Heart Failure Audit in England and Wales since 2008.

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			that not all acute heart failure patients will be best served by being admitted to a cardiology wards. The majority of patients admitted with acute heart failure are older people with multiple co-morbidities and thus may well be best served by being admitted on general wards, with an out-reach service from the specialist heart failure team, thus gaining the best holistic care for their heart failure and their co-morbidities. The RCPE is aware of models of practice in England where the model implied in the NICE recommendation and explained in number 3 above, where such an arrangement is applied in practice with good consistent results shown in the national heart failure audit for those who implement that scheme		
10	Medtronic Limited	Patients with Acute Heart Failure should have access to a specialist Heart Failure Team that is based on a cardiology ward.	Early access to an experienced and dedicated multi -disciplinary Heart Failure team will enable more rapid and higher quality care for patients in Acute Heart Failure. To support and drive systematic whole system change a Best Practise Tariff should be introduced to encourage NHS Trusts to implement this pathway. Implementation can be	This key area for quality improvement is aligned with: Domain 1. Preventing people from dying prematurely Domain 2. Enhancing Quality of life for people with long-term conditions Domain 4. Ensuring people have a positive experience of care	NICE Clinical Guidance 187, Diagnosis and Managing Acute Heart Failure in Adults

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			monitored via Reference Costs.		
11	Medtronic Limited	Patients with Acute Heart Failure should have access to a specialist Heart Failure Team that is based on a cardiology ward and provides outreach services	In order to provide on-going quality care for Heart Failure Patients NHS Trusts should have documented formalised outreach services to provide support and education for Primary Care. NICE Technology Appraisal 314 enables increased access for patients with less symptomatic heart failure resulting in improved patient outcomes, reduction in morbidity, increases quality of life and is proven to be Cost Effective. Primary Care requires support from Heart Failure specialists to help identify patients who will benefit from device therapy outlined in TA 314. Formalised Outreach services as part of an integrated care pathway will facilitate. Outreach services from specialist Heart Failure Teams are important to support General Practise with the management of patients to ensure accurate Heart Failure data are recorded in the patients' notes and on the Heart Failure Register. Key stratification measures which include NYHA classification, QRS width and LVEF while available in secondary care are not reconciled in primary care data therefore further	This key area for quality improvement is aligned with: Domain 1. Preventing people from dying prematurely Domain 2. Enhancing Quality of life for people with long-term conditions Domain 4. Ensuring people have a positive experience of care	NICE Clinical Guidance 187, Diagnosis and Managing Acute Heart Failure in Adults NICE TA 314 NICE CG 108 Chronic Heart Failure http://clahrc-gm.nihr.ac.uk/cms/wp-content/uploads/MRI-RI-Poster-Dec-2012.pdf

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			ongoing management in line with the complimentary guidance TA 314 cannot be achieved. Accurate recording of data enables appropriate monitoring of the patient condition and helps deliver quality evidence based management for people living with Heart Failure.		
12	Royal Devon & Exeter NHS Foundation Trust	The provision of a heart failure specialist multidisciplinary team	There is increasing evidence that care of patients with heart failure in hospital by specialists with an interest in heart failure leads to better outcomes.	There is significant regional variability in the input patient's get from specialist teams when they are admitted urgently due to decompensated heart failure.	NICOR National Heart Failure Audit
13	British Society for Heart Failure	Secondary care specialist heart failure services	For patients admitted with acute decompensated heart failure, outcomes are better when the patient is under the care of cardiologist.	The NICE acute heart failure guideline recommends provision of secondary care acute heart failure services. Few acute trusts have dedicated heart failure units. Management of patients with heart failure by specialist heart failure teams is an acute trust performance indicator and affects the practice tariff to acute trusts	NICE acute heart failure guideline National Heart Failure Audit (NICOR)
14	SCM2	Ensure that all people being admitted to hospital with suspected acute heart failure have early and continuing input from a dedicated specialist HF team	There is good evidence from the National Heart Failure Audit that patients with HF have better outcomes if under the care of a specialist HF MDT.	To improve patient outcomes such as mortality and morbidity and also patient reported outcomes such as quality of life.To improve access to specialist follow up on discharge. To improve access to exercise programmes. To improve access to palliative care services	National HF audit
15	SCM3	Access to specialist input during admission	Studies consistently show that quality of care is better for those patients who are seen by members of a HF MDT during their admission	Specialist access increases uses of appropriate disease modifying drugs, use of echocardiography, and better follow-up. Better outcome is clear in the national audit data.	NICOR national audit data + NICE economic modelling of specialist access within the NICE AHF guideline.

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16	SCM3	Early follow-up after discharge from hospital	Only 50% of discharged pts have any heart failure FU, and those that do have better outcome, with better use of appropriate doses of disease modifying drugs, and support for educational and psychosocial needs. Lower readmission rates also follow – as evidenced by many RCTs	Marked variation by hospital and age of patient for access to MDT HF follow-up. This needs to be improved to optimise outcome.	NICOR national audit data + many RCTs of follow-up by HF programme (reviewed in NICE CHF guideline)
Diagnosis, assessment and monitoring					
17	SCM1	Implementation of early B-type natriuretic peptide (BNP) or NT-proBNP assay for patients presenting with breathlessness suspected to be due to new acute heart failure (AHF)	BNP assay has high sensitivity for the rule-out of AHF in patients presenting with acute breathlessness and suspected AHF. The early use of BNP testing will facilitate earlier exclusion of this diagnosis allowing other diagnoses to be considered and appropriate treatments started (NICE CG187). The use of BNP is cost-effective when compared to the current standard diagnostic approach (history, examination and early investigation without BNP). Moderate specificity means that there will be false positive results resulting in an increased number of echocardiograms being performed, but this is offset by subsequent gain in mortality, readmission and resource utilisation (NICE CG187).	Current access to BNP testing for suspected new AHF is poor in the NHS. In my institution BNP assay is not funded for this indication. As a result of the recent NICE Guidance (CG 187), our institution is developing a guideline and business case for the use of BNP (actually NT-proBNP) for this indication and a quality standard would support this process and subsequent audit.I believe that access to BNP (or NT-proBNP) assay is poor across the wider NHS and this is clearly a key area for quality improvement following CG187. A Quality Standard would support this.	NICE CG187 Diagnosis and Management of acute heart failure in adults.

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18	SCM1	Performing (early) transthoracic echocardiography in patients presenting with suspected AHF and a raised BNP (or NT-proBNP)	Early echocardiography allows early identification of the cause of AHF and, in particular, left ventricular systolic dysfunction. This, in turn, will allow evidence-based therapies to be commenced expediently in appropriate patients (NICE CG187). It will also identify other causes of AHF (valve lesions, etc.) and establish where AHF is not the diagnosis (i.e. a false positive result following raised BNP) allowing alternative therapies to be initiated.	Access to echocardiography is very variable in the NHS. In my institution (and several others in the South West region) it is one of the most difficult imaging modalities to access in a timely manner. It is not available at all at the weekend; this appears to be an issue related to funding for radiographers.Having this as a Quality Standard in the diagnostic pathway for AHF would help improve access to echocardiography and to deliver this investigation in accordance with CG187.	NICE CG187 Diagnosis and Management of acute heart failure in adults.
19	SCM5	In people presenting with new suspected acute heart failure with raised natriuretic peptide levels perform transthoracic Doppler 2D echocardiography to establish the presence or absence of cardiac abnormalities, and ideally within 48 hours of admission to guide early specialist management.	Also identified as a key priority for implementation. Echocardiography is essential to: 1. Confirm or exclude a diagnosis of HF and 2. Establish the likely cause of the HF which will determine the most effective treatment. Given the implications of the diagnosis, and the seriousness of the condition the sooner this can be achieved the greater the likelihood of improved outcome. The guidance recommends the echo should be considered within 48 hrs but the Quality standard might consider undertaking this earlier, to ensure best care from the outset. By 48 hrs most patients will have moved from an admitting ward to	Early accurate diagnosis of acute heart failure involves echocardiography (or in a few some other imaging modality). There is complete consensus across HF guidelines on this (from ESC, AHA, SIGN, NICE Chronic HF and elsewhere). The National HF Audit continues to report patients leaving hospital without a reliable diagnosis (ie no echo) and in some, where, likely an echo has been performed immediately prior to discharge or later in the admission, no disease modifying drugs have been prescribed – this is associated with a much worse outcome. The lack of a randomised controlled trial in this area should not preclude early delivery of best practice care in an NHS in which optimal utilisation of every bed day to ensure patient well being should be our aim.	2014 NICE Acute HF Guideline http://www.nice.org.uk/guidance/cg187 2010 NICE Chronic HF Guideline http://www.nice.org.uk/guidance/cg108 2012-13 National Heart Failure Audit (and earlier National HF Audits). http://www.ucl.ac.uk/nicor/audits/heartfailure/documents/annualreports/hfannual

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			another ward – earlier echo and specialist care would facilitate early transfer to the specialist ward for those patients with newly diagnosed heart failure.		http://www.escardio.org/guidelines-surveys/esc-guidelines/Pages/acute-chronic-heart-failure
20	Roche Diagnostics	Serum natriuretic peptide testing in the assessment of patients with new suspected acute heart failure	The value of serum natriuretic peptide testing has been previously recognised in the diagnostics pathway for chronic heart failure; serum natriuretic peptide level within the normal reference range has a high negative predictive value for heart failure and may therefore be used to exclude heart failure as a diagnosis.	There is recognition from the National Heart Failure audit that early referral to a heart failure specialist improves the outcome for patients with heart failure. Serum natriuretic peptide testing provides a readily accessible diagnostic tool to screen patients with new suspected heart failure upon first presentation to the Emergency Department, enabling early identification of those patients who are likely to have a cardiac abnormality and require echocardiography. Similarly, patients with new suspected heart failure and normal levels of serum natriuretic peptide can have heart failure ruled out an early stage. The NHS Atlas of Variation for Diagnostics Services (November 2013) demonstrated disparity between different localities in the use of serum natriuretic peptide testing with some primary care physicians still without access to this diagnostic test. Within secondary care, access to serum natriuretic peptide testing is even more limited, with only a	The NHS Access of Variation for Diagnostics Services may be accessed by the link below: http://www.rightcare.nhs.uk/index.php/atlas/diagnostics-the-nhs-atlas-of-variation-in-diagnostics-services/

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				minority of Emergency Department physicians having access to this diagnostic test.	
21	Royal Devon & Exeter NHS Foundation Trust	Availability of serum natriuretic peptides for diagnosis/exclusion of heart failure	Serum natriuretic peptides have been widely available within primary care for several years but availability in acute settings is variable. They have excellent negative predictive value and have been demonstrated to be cost effective.	Morbidity and mortality from heart failure remains very high despite current treatment. The diagnosis is often challenging and the use of natriuretic peptides may allow earlier identification (and then treatment) of people with heart failure, which may then lead to improved outcomes.	NICE Acute Heart Failure guideline 2014, diagnostic meta-analysis and economic model.
22	Royal Devon & Exeter NHS Foundation Trust	Echocardiography within 48 hours of an urgent admission with acute heart failure for those without a recent echocardiogram.	Echocardiography confirms or excludes the diagnosis and guides further management.	Lack of rapid access either prevents appropriate treatment or allows the continuation of inappropriate treatment which may lead to adverse outcomes and inefficient resource use.Currently echocardiography provision is oversubscribed and underfunded leading to inadequate service in many hospitals.	NICOR National Heart Failure Audit NICE Acute Heart Failure guideline 2014
23	British Society for Heart Failure	Echocardiography services	In people presenting to hospital with new suspected acute heart failure, echocardiography should be performed within the first 48 hours after admission	Echocardiography is a key investigation in the investigation of suspected heart failure. Echocardiography allows identification of cardiac structural and functional abnormalities and guides specialist management.	NICE acute heart failure guideline ESC heart failure guideline (European Heart Journal (2012) 33, 1787–1847. doi:10.1093/eurheartj/ehs104
24	British Society for Heart Failure	B-type Natriuretic peptides	In people with new suspected acute heart failure, measurement of B-type natriuretic peptide (BNP or N terminal pro BNP) should be available for appropriate patients.	B type natriuretic peptides within the normal range can help make the diagnosis of acute heart failure where this is in doubt. Early diagnosis may allow patients early access to specialist care and management. “Routine” measurement of B-type natriuretic peptides where the diagnosis is already known is unlikely to improve	NICE acute heart failure guideline ESC heart failure guideline (European Heart Journal (2012) 33, 1787–1847. doi:10.1093/eurheartj/ehs104

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				management	
25	SCM2	Diagnosis, assessment and monitoring	In people presenting with suspected acute heart failure, use a single measure of serum natriuretic peptides (B-type natriuretic peptide (BNP) or N-terminal pro-B-type natriuretic peptide (NT-proBNP) and the following thresholds to rule out the diagnosis of heart failure: BNP , 100ng/litre; NT-pro-BNP ,300ng/litre. These are the recommendations in the NICE Acute Heart Failure Guidelines	I believe that this threshold has been set too low and will adversely affect the numbers of patients that specialist services/cardiologists are asked to see. Many of these patients will be elderly or have other co-morbidities such as atrial fibrillation or chronic kidney disease and not HF. Therefore impacting on resources and putting services under pressure. The threshold needs to be set to a more realistic level to allow for the above.	NICE Chronic HF guidelines 2 and 6 week pathway
26	SCM3	Access to early (within 48 hrs) echocardiography on admission to hospital	Echo is the key test to identify patients with underlying cardiac dysfunction when they are admitted with breathlessness. Access to this allows early diagnosis and movement on to appropriate care pathway (including involvement of HF MDT)	Echo is provided for most UK patients being admitted with suspected HF, but this is often only towards the end of their multi-day admission: early access would speed up the correct diagnosis being made and appropriate care being delivered in the most appropriate place of care.	NICOR audit. AHF guideline from NICE, including HF BNP and echo diagnostic flow modelling.
	Royal College of Physicians of Edinburgh	In patients with new suspected acute heart failure, a single measurement of serum natriuretic peptides should be made. In patients presenting with new suspected acute heart failure with raised NP levels perform transthoracic	This is a key recommendation that would reduce the chance of patients being wrongly labelled and treated as having acute heart failure.The advantages of making this a quality standard are:Fast access to echocardiography (made easier by reducing the need to do an echocardiogram on those whose NP level is less than the rule out	Streamlining the diagnostic services including echocardiography by creating a gateway (NP) would allow the services to provide the test in an acceptable time frame suggested by the CG187 at 48 hours.It will reduce the chances of delayed diagnosis of heart failure and the inappropriate treatment in patients with heart failure mis-diagnosed as having chest infection (as an example).To improve the care of patients with acute heart failure it is important that their treatment with agents known to improve their prognosis if they have	Data from Breathing Not Properly study Information from the ESC guidelines on acute and chronic heart failure 2012 NICE guidelines on AHF 2014 (CG 187) NICE (CG 187), NICE (CG 108), NICE (CG 5) ESC HF guidelines 2012

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27		Doppler 2D echocardiography within 48 hours, to establish the presence or absence of cardiac abnormalities. and guide early specialist management.	threshold).Earlier implementation of therapeutic interventions for acute heart failure.Earlier referral to and involvement of the specialist heart failure team in the care of these patients with definite heart failure.The potential disadvantage of making this a quality standard is that using NP as a gateway to echo will only be effective if it is restricted to new cases, and if the causes of raised NP other than heart failure are recognised by the practitioner requesting the NP level. Patients admitted with acute heart failure are broadly divided into those with acute decompensated chronic heart failure in whom neither the NP levels need to be measured, nor is there a need to perform an echocardiogram. The other smaller group (no more than 35%), are acute denovo heart failure who need to have an NP level measured. If the NP level exceeds the rule out threshold, then they should have an echocardiogram. The latter enables the caring physician to determine the type of heart failure the patient has, and thus implement the appropriate therapeutic interventions	left ventricular systolic dysfunction (LVSD) is implemented early. This is why the echo needs to be done within 48 hours. In addition, unless the echo is done, it is not possible to determine clinically or from other ancillary tests whether the patient has HF due to LVSD or due to other types. In addition, the very fact that someone has raised NP should not automatically mean that they have heart failure. Thus doing the echo is not only essential to differentiate between different types of heart failure but also to make the diagnosis of heart failure or not in the first instance.	

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			that vary according to which type of heart failure the patient may have. Understandably, the test ought to be done in a timely fashion to avoid both delays in the treatment and the inappropriate use of therapeutics designed for treating certain types of heart failure but not others. To allow departments to deliver these imaging tests in a timely fashion, it is vital that a gateway is established (hence the NP level), and that the gateway is not misused (hence the imposition that the NP and the echo should be needed only in patients with new cases of acute heart failure).		
Initial non-pharmacological treatment					
28	SCM1	The use of (early) non-invasive ventilation (NIV) in patients with AHF and severe dyspnoea and acidaemia or in those patients in whom there has been failure to respond to medical therapy.	Meta-analysis shows that NIV is associated with lower intubation rates and mortality without an increase in major cardiovascular adverse events (NICE CG187). However this is not consistent with the findings of the single largest RCT (3-CPO) which was performed in a UK NHS setting and the results of which many emergency physicians are familiar. Cost-effectiveness appears most certain in patients with severe dyspnoea and	The use of NIV in this setting is inconsistent in UK emergency departments, not least because of the conflicting evidence of benefit (meta-analysis findings vs 3-CPO results).Having this as a Quality Standard would help to focus rational use of this intervention (which is already funded and available to all emergency departments) and encourage subsequent audit.	NICE CG187 Diagnosis and Management of acute heart failure in adults.Gray AJ, Goodacre S, Newby DE, Masson MA, Sampson F, Dixon S et al. A multicentre 35 randomised controlled trial of the use of continuous positive airway pressure and non-invasive 36 positive

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			acidaemia.		pressure ventilation in the early treatment of patients presenting to the emergency 37 department with severe acute cardiogenic pulmonary oedema: the 3CPO trial. Health 38 Technology Assessment. 2009; 13(33):1-106
Treatment after stabilisation					
29	SCM1	Starting or re-starting beta-blockers inpatients with AHF.	Long term use of beta-blockers (BB) in patients with heart failure due to left ventricular dysfunction is associated with improved survival and reduced hospitalisation (NICE CG108). Continuing BB usage in patients with AHF and introduction of BB in these patients (in the absence of contraindications) is not associated with harm and is associated with higher usage of BB at 3 month follow-up (NICE CG187)	BBs are often discontinued when patients present with AHF because of a concern that the negative inotropic effects of these agents may exacerbate cardiac failure during the acute presentation. These patients may not have their BBs restarted or, if they were not on them prior to presentation, may not be started on them at all, therefore missing out on the potential beneficial effect that they have on outcome in heart failure.The prescription of BBs in these patients would make an appropriate Quality Standard to improve consistency in practice and also lead to an overall increase in appropriate BB usage.	NICE CG108 Management of chronic heart failure in adults.NICE CG187 Diagnosis and Management of acute heart failure in adults.
	SCM5	The introduction (or reintroduction) of three disease modifying drugs (beta-blockers, angiotensin	There is a very robust evidence base for this practice reflected in the NICE Acute HF guideline and those of the ESC. The benefits of these drugs, which has been		2014 NICE Acute HF Guideline http://www.nice.org.uk/guidance/cg187 2012-13

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30		converting enzyme inhibitors, and aldosterone antagonists) for patients admitted with acute HF due to left ventricular systolic dysfunction, when stabilised.	repeatedly demonstrated in randomised controlled trials, is translated into similar benefit in everyday life where prescribed as evidenced by the National HF Audit. The cost of not doing so for those patients who do not receive them prior to discharge is a very substantial increased mortality.	These three drugs which reduce premature mortality, also reduce symptoms, improve well being, allow positive remodelling of left ventricular function, and reduce re-admissions.The National HF Audit data for this group demonstrates the implications of not receiving these highly cost-effective drugs prior to discharge.	National Heart Failure Audit (and earlier National HF Audits).http://www.ucl.ac.uk/nicor/audits/heartfailure/documents/annualreports/hfannual http://www.escardio.org/guidelines-surveys/esc-guidelines/Pages/acute-chronic-heart-failure
31	SCM4	Ensure that stabilised patients are discharged on all three of the recommended therapies for heart failure – ACE inhibitor/ARB, beta blocker and MRA	Outcomes analysis from the HF audit shows patients discharged on a three drugs have better outcomes following discharge than those discharged on other combinations of this triumvirate. See also comments from this column for item 3	Only 41% of patients were discharged on this triumvirate in the most recent audit	The National Heart Failure Audit.The audit is funded and commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of their National Clinical Audit and Patient Outcomes Programme (NCAPOP). http://www.ucl.ac.uk/nicor/audits/heartfailure/reports NB: the 2014 audit is pending publication and may be made available to NICE for this Quality Standard exercise.
	Royal College of Physicians of	Continue beta-blockers in a patient presenting with	Beta-blockers licensed for use in heart failure due to LVSD are protective	Implementing this recommendation would protect the patients during and after the admission from the ill	CIBIS I, CIBIS II, CAPRICORN,

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32	Edinburgh	acute heart failure unless the patient's heart rate is less than 50 bpm, they have second or third degree heart block or are in shock. Once stabilised (off IV diuretics), patients with acute heart failure due to LVSD should be commenced or re-commenced on a beta-blocker licensed for treatment of HF during hospital admission. These patients should not be discharged until their condition is stable for typically 48 hours after starting or restarting the beta-blockers. Once discharged patients need post-discharge support by HF nurses in the community. Associated cardiac rehabilitation tailored for HF is needed	against arrhythmias and through their impact on re-modelling reduce the patients' morbidity and mortality. In the absence of any supportive evidence, there is a trend by many to discontinue beta-blockers in patients presenting with acute heart failure due to the perceived negative inotropic effect. In addition to absence of evidence to support this practice, there is observational evidence to suggest that in many such patients beta-blockers are not re-started again and may never get re-started as some may interpret the subsequent improvement as evidence that the AHF was caused by beta-blockers. It is vital that this practice is changed, thus the recommendation is vital in that it discourages discontinuation of beta-blockers and lists in detail the exceptional circumstances when the physician would have to stop the beta-blocker. Once these patients are stable, the beta-blocker should be commenced (or re-commenced if it had been stopped). In addition, it would be ideal if these patients are not discharged until they had been stable on their beta-blockers	effects of stopping beta-blockers if they have HF due to LVSD. Patients with HF due to LVSD constitute at least 50% and probably up to 60% of all the patients admitted with AHF.In addition, the golden opportunity to commence these patients on beta-blockers if they were not already on them, or to recommence them is during the hospital admission. Otherwise, it tends to be overlooked or considered sometimes to be wrongly un-safe. Additionally, patients with heart failure due to LVSD may witness transient breathlessness shortly after commencing beta-blockers. Not infrequently, this results in their beta-blocker being omitted and occasionally their re-admission to hospital. Thus, it would be prudent to keep them for at least 48 hours in hospital to ensure their stability on the added or increased dose of beta-blockers before they are discharged.Current suboptimal application of HF nurse interventions and cardiac rehabilitation means that precious resources are not optimally utilised.	COPEARNICUS and MERIT-HF trials BRUM-CHF – see Eur J Heart Fail. 2009 Feb;11(2):205-13.Eur J Heart Fail. 2011 Feb;13(2):115-26.BMJ. 2001 Sep 29;323(7315):715-8.

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			for 48 hours. HF nurse intervention has been shown to improve outcomes by reducing rehospitalisation. Cardiac rehabilitation tailored for HF patients improved patients quality of life, and CV risk factors.		
33	Royal College of Physicians of Edinburgh	Commence patients with acute heart failure due to LVSD on an angiotensin-converting enzyme inhibitor and an aldosterone antagonist during hospital admission. An ARB could be given instead of an ACEI if not tolerated. If unable to have either ACEI or ARB, an aldosterone antagonist should still be offered	There is no doubt that both ACEI and aldosterone antagonists are essential agents in the treatment of patients presenting with acute heart failure due to LVSD. This is related to the significant reduction of both morbidity and mortality of heart failure affected by these two agents.	These two agents and beta blockers are the three agents that transformed the outcome of patients with heart failure due to LVSD since the end of the 1990's when the first trial of aldosterone antagonists brought these agents to the existing armamentarium of ACEI and Beta-blockers.Of course, in the small minority whose side effects of ACEI are intolerable, an alternative in angiotensin receptor blocker (ARB) can be given. It is also important to note that in some patients particularly the elderly with low blood pressure, it may not be possible to give them an ACEI. In these cases it is advisable to give them an aldosterone antagonist. These agents if given appropriately with proper surveillance, especially with regards to the renal function, could lead to reduced hospitalisation and improved survival.	CONSENSUS, SOLVD, AIRE RALES, EMPHASIS-HF trials
34	Royal Devon & Exeter NHS Foundation Trust	Patients with severe LV systolic dysfunction should be commenced on an ACE-I (or ARB), a beta-blocker and aldosterone antagonist prior to leaving hospital unless contraindicated	The combination of these 3 types of medication has proven benefits on mortality and other important outcomes.	Often the initiation of these medications may be delayed if not done as an in-patient. This may result in sub-optimal treatment for many weeks or months.	NICOR National Heart Failure Audit

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35	British Society for Heart Failure	Secondary prevention therapy	Evidence-based pharmacological therapy (beta blocker, ACE inhibitor or angiotensin receptor blocker, mineralocorticoid receptor antagonist) is highly effective in improving quality of life, reducing readmission, and prolonging life, in patients hospitalised with heart failure	Rates of prescription of evidence based pharmacological therapy vary across the UK. Older patients are less likely to receive such therapy	ESC heart failure guideline (European Heart Journal (2012) 33, 1787–1847. doi:10.1093/eurheartj/ehs104 National Heart Failure Audit (NICOR)NICE acute heart failure guideline
Suggested additional areas					
36	SCM3	Access to specialist palliative care input, including hospice care	High quality HF care involves palliative and supportive care from day 1, with access to specialist services required at times, particularly towards the end of life.	National audit shows poor, albeit improving, access to specialist palliative care services. Higher rates of involvement and higher rates of dying in the chosen place of death would be perceived as higher quality care.	NICOR national audit data. CV outcomes framework. International guidelines.
37	Barnet and Chase Farm Hospitals NHS Trust	Remote monitoring of heart failure.	Heart failure admissions and deteriorations pose a significant burden to the NHS both economically and through use clinical resources. Clearly there is a need to predict and prevent admissions and symptomatic deterioration.	There are a number of remote monitoring programmes that have been shown to be economically viable and reduce admission rates and even mortality (Pandor et al.). There is little standardisation across the NHS and their exact role and mechanism needs to be clearly defined. Innovative information transfer systems have the potential to allow for real-time data collection, rapid analysis of previous trends and interventions (Bui et al.). Home monitoring can extend from telephone interviews to implanted device monitoring. Mobile phone based apps are a simple way to collate data and represent a number of variables (weight, renal function, drug dosages, symptoms, fluid balance). Moreover, patient self- management encourages proactive rather than reactive assessment and communication with the	Remote monitoring after recent hospital discharge in patients with heart failure: a systematic review and network meta-analysis Heart doi:10.1136/heartjnl-2013-303811. Pandor et al. Home monitoring for Heart Failure management Anh L. Bui, MD; Gregg C. Fonarow, MD J Am Coll Cardiol. 2012;59(2):97-104. doi:10.1016/j.jacc.2011.0

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				clinical team. Initial studies have shown potential (Scherr et al.) , but more work is needed to develop and standardise effectiveness.	9.044. Effect of home-based telemonitoring using mobile phone technology on the outcome of heart failure patients after an episode of acute decompensation: randomized controlled trial. Scherr D., Kastner P., Kollmann A.;J Med Internet Res. 11 2009:e34 Agency for Healthcare Research and Quality. Recovery Act Awards for Evidence Generation Awards. http://gold.ahrq.gov/projectsearch/grant_summary.jsp?grant=R01+HS19311-01.
38	SCM3	Prescription of disease modifying drugs for patients admitted to hospital with heart failure	These drugs improve prognosis and reduce risk for readmission.	National audit consistently shows inequity in use of these drugs (at adequate dosage) with big differences between hospitals and a drop in use from middle-age upwards.	NICOR national audit of HF (published annually) + NICE guideline on CHF and AHF for individual studies of benefits of drug therapy.
	British Society for Heart Failure	Cardiac Resynchronisation therapy and Implantable Cardioverter Defibrillators	Cardiac Resynchronisation (CRT) and Implantable Cardioverter Defibrillator (ICD) therapy can improve	Rates of implantation of CRT and ICD vary across the UK	ESC heart failure guideline (European Heart Journal (2012) 33, 1787–

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39			quality of life and survival in heart failure, for appropriate patients		1847. doi:10.1093/eurheartj/ehs104. National Heart Failure Audit (NICOR) NICE acute heart failure guideline
40	Royal Devon & Exeter NHS Foundation Trust	Following treatment of the acute heart failure episode, patients should be followed up and assessed appropriately for cardiac resynchronisation and/or defibrillator implantation	In suitable patients cardiac resynchronisation and defibrillator implantation reduces mortality, improves symptoms and reduces heart failure hospitalisations.	Following discharge after the treatment of the episode of acute heart failure the follow up and consideration of device therapy can be variable and often incomplete. The UK lags behind other similar European countries in the rates of appropriate device implantation and the implantation rates vary regionally.	NICOR national audit of cardiac rhythm management devices 2014
41	SCM5	Cardiac Rehabilitation.	Cardiac rehabilitation was recommended in the 2010 Chronic HF Guidance, and is applicable to the acute HF population once stable. An ideal program will provide alongside exercise and other initiatives the psychological support to address the process of change which is required of the HF patients, and may provide the basis for subsequent self-management.	Although recommended for HF patients it is rarely offered or delivered. Again evidence is available through the National HF Audit Reports.	2012-13 National Heart Failure Audit (and earlier National HF Audits). http://www.ucl.ac.uk/nicor/audits/heartfailure/documents/annualreports/hfannual NICE Chronic HF Guidance 2010. http://www.nice.org.uk/guidance/cg108 http://www.escardio.org/guidelines-surveys/esc-guidelines/Pages/acute-

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					chronic-heart-failure http://www.ucl.ac.uk/nicor/audits/heartfailure/documents/annualreports/hfannual
42	British Society for Heart Failure	Community heart failure specialist services	Disease management programmes, involving community heart failure specialist nurses, are an integral part of management of heart failure in the vast majority of areas in the UK. The evidence underpinning such services is based upon EARLY referral in to the service and EARLY (within 2 weeks) review after discharge. In most areas this target is not being met due to increasing workloads	Research shows that disease management programmes based upon specialist heart failure nurses lead to improved outcome in patients recently discharged after admission for HF. Readmission after discharge from hospitalisation with HF is common, most often in the first 30 days. Adequate provision of such services is evidence based and likely to reduce unplanned readmissions, as well as improve mortality. Older patients and women are less likely to be referred to disease management programmes after discharge	NICE acute heart failure guideline National Heart Failure Audit (NICOR)Blue et al; BMJ 2001;323:715–8 ESC heart failure guideline (European Heart Journal (2012) 33, 1787–1847. doi:10.1093/eurheartj/ehs104
43	British Society for Heart Failure	Heart Failure rehabilitation	Systematic reviews and meta-analyses have shown that physical conditioning by exercise training improves exercise tolerance, health-related quality of life, and HF hospitalization rates in patients with HF	Provision of exercise rehabilitation for patients with heart failure is very limited. Older patients and women are less likely to be offered exercise rehabilitation	ESC heart failure guideline (European Heart Journal (2012) 33, 1787–1847. doi:10.1093/eurheartj/ehs104
	SCM5	The scope of the Acute HF Guideline did not include inpatient up-titration of ACEI or beta-blockers but this is good practice and might be considered	Up-titration of drugs as an inpatient is recommended in the 2012 ESC Acute and Chronic HF Guidance and data from the National HF Audit suggests patients who are discharged on more than 50% of target ACEI or of Beta-blockers do better than those on lower doses.	Up-titration of drugs as an inpatient is recommended in the 2012 ESC Acute and Chronic HF Guidance. Data from the National HF Audit suggests patients who are discharged on more than 50% of target ACEI or of Beta-blockers do better than those on lower doses.	2012-13 National Heart Failure Audit (and earlier National HF Audits). http://www.ucl.ac.uk/nicor/audits/heartfailure/documents/annualreports/hfannual

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44					NICE Chronic HF Guidance 2010. http://www.nice.org.uk/guidance/cg108 http://www.escardio.org/guidelines-surveys/esc-guidelines/Pages/acute-chronic-heart-failure http://www.ucl.ac.uk/nicor/audits/heartfailure/documents/annualreports/hfannual
45	SCM4	A greater emphasis on considering the aetiology of acute heart failure, particularly in those under the age of 50. Rather than treating symptoms, ensuring the cause, e.g. genetic or myocarditis, is identified and appropriate referrals made.	Myocarditis is a challenging diagnosis due to the heterogeneity of clinical presentations. The actual incidence of myocarditis is also difficult to determine as endomyocardial biopsy (EMB), the diagnostic gold standard, is used infrequently. Studies addressing the issue of sudden cardiac death in young people report a highly variable autopsy prevalence of myocarditis, ranging from 2 to 42% of cases. Similarly, biopsy-proven myocarditis is reported in 9–16% of adult patients with unexplained non-ischaemic dilated cardiomyopathy (DCM) and in 46% of children with an	In up to 30% of cases, biopsy-proven myocarditis can progress to DCM and is associated with a poor prognosis. Prognosis in myocarditis patients also varies according to the underlying aetiology	European Cardiac Society's position statement on myocarditis, http://eurheartj.oxfordjournals.org/content/early/2013/07/02/eurheartj.eht210

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			identified cause of DCM. In patients presenting with mild symptoms and minimal ventricular dysfunction, myocarditis often resolves spontaneously without specific treatment. However, in up to 30% of cases, biopsy-proven myocarditis can progress to DCM and is associated with a poor prognosis. Prognosis in myocarditis patients also varies according to the underlying aetiology. The treatment of many forms of myocarditis is symptomatic, but immunohistochemical and molecular biological analysis of EMB16 as well as autoantibody serum testing is important to identify those patients in whom specific therapy is appropriate		
46	British Society for Heart Failure	National Heart Failure Audit	Participation of acute Trusts in the national heart failure audit is mandatory. Participation of acute Trusts in the national heart failure audit affects the practice tariff	The national heart failure audit allows assessment of the management of heart failure at a national level.The national heart failure audit allows acute trusts to compare their performance (secondary prevention; specialist management; readmission; mortality) with one another	NICE acute heart failure guideline National Heart Failure Audit (NICOR)
47	SCM3	Access to rehabilitation	Rehab improves quality of life for pts with heart failure, and their exercise capability. Also provides more holistic support for patient and their families.	Very low attendance in cardiac rehabilitation programmes for HF pts nationally. Efforts ongoing to widen rehabilitation programme types, as not all HF pts wish to attend group based exercise programmes.	NICOR national audit data. BACPR audit data also. CV outcomes framework also highlights this area.

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48	Royal College of Physicians of Edinburgh	Screening and detection of heart failure, and its complications (esp. atrial fibrillation)	Acute heart failure is common, particularly in high risk groups (eg post MI, hypertension, renal impairment, atrial fibrillation etc). Asymptomatic left ventricular dysfunction may be present in patients with renal failure, atrial fibrillation, etc.	Heart failure is a progressive disease, and early detection and treatment with prognostically important drugs for heart failure (eg. ACEI/ARB, angiotensin receptor blockers, etc) or its complications (eg. anticoagulation for atrial fibrillation) can reduce the risk of major adverse cardiovascular events.	ECHOES study (BMJ. 2002 Nov 16;325(7373):1156)ECHOES AF substudy (Europace. 2012 Nov;14(11):1553-9)
49	Royal Devon & Exeter NHS Foundation Trust	Additional developmental areas of emergent practice	Specified heart failure palliative care physician who would coordinate end-of life care in the community with treatment support from the heart failure MDT.	Frequently end of life care for patients with heart failure is not discussed early enough in order meet the patient's wishes when the time comes. A specialist palliative care physician with an interest in heart failure would provide additional leadership in this area to improve standards and patient care.	
50	SCM4	Standardising (i.e. removal of the variability in) the use and availability of circulatory support therapies, e.g. ECMO (extracorporeal membrane oxygenation) and Imepella.	Standardising drug treatments has yielded a positive change in the treatment and management of HF. Clarity in the use of biventricular pacemakers has further improved the management of HF. The next stage is the use of circulatory support in especially acute patients. Such support offers the potential for the patient to recover organ function or to act as a bridge to more durable support.Extracorporeal membrane oxygenation (ECMO) for acute heart failure in adults can be used after heart surgery to assist in the transition from cardiopulmonary bypass to ventilation.	A register including 3065 adult cardiac failure and cardiopulmonary resuscitation (CPR) patients reported survival to discharge or transfer in 39% (891/2312) of cardiac failure patients and in 27% (207/753) of CPR patients. A non-randomised comparative study of 79 patients (61 treated by extracorporeal membrane oxygenation [ECMO] compared with 18 treated by miniaturised percutaneous ventricular assist device [mp-VAD]) reported in-hospital survival in 49% (30/61) of ECMO patients and 50% (9/18, p>0.999) of mp-VAD patients.Three case series of 81 patients (with acute refractory cardiogenic shock), 295 patients (treated by ECMO-supported CPR), 219 patients (with refractory postcardiotomy cardiogenic shock) and 1 systematic review of case series of 1150 patients (with cardiogenic shock postcardiotomy) reported survival to discharge in	Extracorporeal membrane oxygenation (ECMO) for acute heart failure in adults, NICE interventional procedures guidance [IPG482]:https://www.nice.org.uk/guidance/ipg4825 year survival for patients receiving ECMO:http://www.jtcvsonline.org/article/S0022-5223%2801%2990535-5/abstract?cc=yResults of Impella use:http://investors.abio

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			It can also be used as a bridge to myocardial recovery, cardiac transplantation or implantation of a left ventricular assist device.	42% (34/81), 27% (79/295), 24% (52/219) and 34% (386/1150) of patients respectively.	med.com/releasedetail.cfm?ReleaseID=871213
51	SCM5	Additional evidence sources for consideration Additional National Audit Data may be available by request through NICOR via Professor Theresa McDonagh (Clinical HF Audit lead) and specifically around drug dosage prior to discharge.			
52	NHS England	Thank you for the opportunity to comment on the above Quality Standard. I wish to confirm that NHS England has no substantive comments to make regarding this consultation			
53	Royal College of Nursing	This is to inform you that the Royal College of Nursing have no comments to submit to inform on the above topic engagement at this time. Thank you for the opportunity and we look forward to participating in the next stage.			