



The diagnosis of heart failure: What is the state of play in Europe?

This summary represents first findings of a literature review into the diagnosis of heart failure (HF) at the European and national level in 12 countries; Belgium, Bulgaria, Finland, France, Germany, Ireland, Italy, The Netherlands, Romania, Spain, Sweden and the UK.

It is offered for discussion, as part of our work towards a comprehensive 'state of play in heart failure' report to be launched in spring 2017.

Many policy priorities are immediately apparent:

The stakes are high for heart failure

- HF is a costly condition that currently affects 15 million people in Europe, and the number of cases is expected to increase due to aging populations and improved survival from cardiovascular disease.^{1,2}
- Today, many millions more people have existing illnesses that place them at increased risk of HF – such as high blood pressure, coronary heart disease and diabetes.³



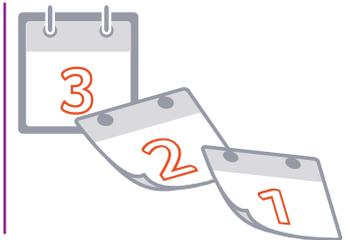
Early diagnosis of heart failure is critical

- Early detection is key to ensure patients receive appropriate treatment, and achieve the best possible outcomes.³
- A delay to hospital treatment as little as 4-6 hours after acute onset of HF symptoms can increase a patient's risk of death.³



Yet delays and missed diagnosis are common for patients with heart failure

- Diagnosis is often only confirmed once severe damage to the heart has already taken place.^{3,4}
- Existing estimates range from several months in Germany,⁵ to up to a year in Ireland,⁶ with serious delays noted in France,⁷ Ireland,⁶ the Netherlands,^{8,9} Sweden,¹⁰ and the UK.^{6,11,12}



We know what to do, but we are not doing it properly

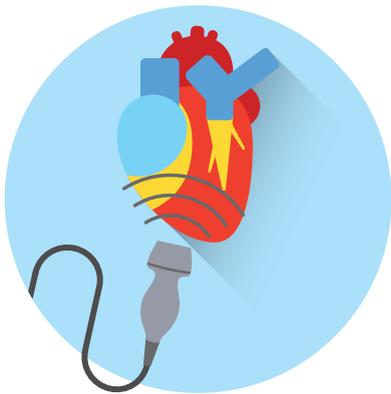
- **Electrocardiogram (ECG), natriuretic peptide testing (NPs) and echocardiography (echo)** are three highly effective tools at the heart of clinical practice, as stated by ESC guidelines (2016).¹³
- Research suggests these are best performed for patients with acute HF in the hospital setting.¹⁴ Yet outside hospitals, usage is often poor, and there are worrying variations between countries.^{4,8,11,15-20}



Focus: Inequalities in access to echocardiography in heart failure diagnosis

Echocardiography (“echo”) is one of the most useful diagnostic tools in HF laid down in modern guidelines. Echo provides a rich body of information on the heart and its capacity to pump blood around the body, all of which are crucial in establishing diagnosis and in determining appropriate treatment.¹³

Some physicians may still attempt a working diagnosis of HF by other means, or proceed to alleviate symptoms. However they will lack vital medical information as to the true underlying causes, and therefore the most appropriate treatments.²⁰



Currently, HF patients face a ‘diagnosis lottery’ depending on where they live and their point of entry into the health care system. There is considerable and unacceptable variation in the use of echo across Europe, particularly for people with non-acute HF outside of hospital.

Interpretation of study data at the national level requires caution, as referral practices vary between countries. Overall, published research raises serious concerns.

For example:



In **Belgium**, one study showed 63% of patients in primary care with suspected HF received an echo.¹⁷



In **Ireland**, a study of patients with a diagnosis of HF in primary care reveals only 40% received an echo.²⁰



In **Finland**, a study showed echo was only available for 32% of patients in regional hospitals, but 78% in university hospitals, and 68% in central hospitals.¹⁶



In the **Netherlands**, one study found that only 10% of GPs routinely perform an echo to support the diagnosis of HF.⁸



In **Germany**, a study showed only 17.2% of patients received an echo in primary care settings.¹⁸



In **Scotland**, only 58% of HF patients are diagnosed with an echo.¹¹

1 Dickstein K, *et al.* ESC Guidelines for the diagnosis and treatment of AHF and CHF 2008. *Eur J of HF* 2008;10(10):933-89.

2 Stewart S, *et al.* HF and the aging population. *BMJ* 2003;89:49-53.

3 Ponikowski P, *et al.* HF preventing disease and death worldwide: ESC, 2014.

4 Mejhert M, *et al.* A management programme for suspected HF in primary care. *Eur J of GP* 2015;21(1):26-32.

5 Braun V, *et al.* Innovative strategy for implementing chronic HF guidelines among family physicians in different healthcare settings in Berlin. *Eur J of HF* 2011;13(1):93-9.

6 ICS. ICS calls for rapid community HF diagnosis. 2016.

7 Cohen-Solal A, *et al.* The management of patients with HF in France. *Eur J of HF* 2000;2:223-26.

8 Cleland JG, *et al.* IMPROVEMENT of HF Programme. *Lancet* 2002;360(9346):1631-9.

9 Jaarsma T. Management of HF in The Netherlands. *Eur J of HF* 2005;7:371-75.

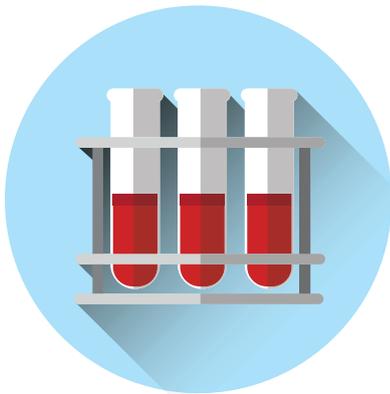
10 Cline CMJ, *et al.* The management of HF in Sweden. *Eur J of HF* 2002;4(3):373-76.

Focus: Low use of natriuretic peptide testing in heart failure

Blood tests for natriuretic peptides (“NP”) are recommended by ESC guidelines as an initial diagnostic test.

There are two types of NP tests that are commonly used, B-type natriuretic peptide (BNP) and pro b-type natriuretic peptide (NP-proBNP). They are especially useful in the non-acute setting when echocardiography is not immediately accessible.¹³

The guidelines specify that NP testing should take place if commonly available.¹³



NP test are extremely cost-effective,^{6 29} as they help establish which patients require further cardiac investigation. Patients with normal levels are unlikely to have HF and many do not require further investigation for the condition.¹³

Increasing importance has been put on NP testing, but usage appears to be lagging behind.

For example:



The **EuroHeart Failure Survey** across 30 European countries found that only 16% of patients hospitalised with acute HF had NP testing.¹⁴



In **Belgium**, a nationwide study found that 11% of primary care patients with suspected HF received NP testing.¹⁷



In **England**, estimates suggest that one third of GPs and one third of hospitals do not have access to NP testing.¹²



In **Germany**, a study in 5 GP practices found that zero patients received NP testing.¹⁸



In **Italy**, the use of NP testing in HF is very variable and not part of the national clinical practice guidelines.³⁰



In **Ireland**, a study of electronic health records showed that 42% of patients diagnosed with HF in primary care settings received NP testing.²⁰

11 Audit Scotland. Cadiology Services, 2012.

12 APPG on heart disease. 10 recommendations to improve care and transform lives. 2016.

13 Ponikowski P, et al. 2016 ESC Guidelines for the diagnosis and treatment of AHF and CHF.

14 Nieminen MS, et al. EuroHF Survey II (EHFS II). Eur Heart J 2006;27(22):2725-36.

15 Remme WJ, et al. Awareness and perception of HF. Eur Heart J 2008;29(14):1739-52.

16 Siirila-Waris K, et al. Characteristics, outcomes, and predictors of 1-year mortality in patients hospitalized for AHF. Eur Heart J 2006;27:3011-17.

17 Devroey D. Signs for early diagnosis of HF in primary health care. Dovepress 2011;7:591-96.

18 Korb K, et al. Umsetzung von diagnostischen Empfehlungen bei Herzinsuffizienz. Dtsch Med Wochenschr 2010;135:120-24.

19 Cancian M. The care for CHF by GPs. Eur J of GP 2012;19:3-10.

20 Monaghan M. Lack of specialist involvement in HF diagnosis leave concerning gaps in management. Eur Heart J 2015;101(Supple 5):A17.

What can be done?



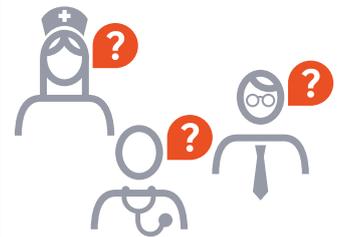
We need to understand what is really happening for the diagnosis of heart failure

- Few countries have national strategies that include HF, nor specific plans, targets, or improvement programmes for its diagnosis.
- In many countries there is no recently published data on diagnostic performance for HF at all.
- Registries and audits on HF including data on diagnosis are hugely useful, but are rare or lacking national reach.



We need to raise awareness of HF, and equip our workforce with the necessary skills

- Classic symptoms of HF such as tiredness and shortness of breath often go unrecognised.^{3 21 22}
- GPs often lack the clinical skills and confidence needed to enable diagnosis.²³⁻²⁵
- Educating a wider range of healthcare professionals will be beneficial to help identify patients at risk of HF, and apply appropriate treatments and interventions.³



We need to tackle access issues and delays

- Even if HF is suspected, it is difficult to diagnose,²⁶ as there is no single simple diagnostic test.³
- Specialist opinion is often necessary to reach diagnosis. Poor multidisciplinary working, or sheer lack of capacity, frequently leads to harmful delays.^{4 6 12 27}
- Many key tests are still not fully reimbursed in a number of countries, despite their cost-effectiveness (for example NPs).^{12 28}



Major efficiencies can be achieved in diagnosis – benefiting healthcare systems and patients

- Innovative schemes like open access services for key diagnostics, could reduce demand on cardiologists and specialist technicians.^{4 6 12 27}
- NP testing in particular is a low cost diagnostic tool.¹² Experts believe it could help to reduce unnecessary referrals rates by as much as 30%⁶ - 50%.¹²



21 Department of Health UK. Cardiovascular Disease Outcomes Strategy Improving outcomes. 2013.

22 Cowie MR, *et al.* Improving care for patients with AHF. ESC 2014;1:110-45.

23 Goethals MA, *et al.* Diagnosis and management of CHF. Acta Clinica Belgica 2004;59(5):300-03.

24 Fuat A, *et al.* Barriers to accurate diagnosis and effective management of HF in primary care. BMJ 2003;326(7382):196.

25 Hancock HC, *et al.* Barriers to accurate diagnosis and effective management of HF have not changed in the past 10 years. BMJ 2014;4(3).

26 McMurray JJ, *et al.* 2012 ESC Guidelines for the diagnosis and treatment of AHF and CHF. Eur J of HF 2012;14(8):803-69.

27 Gurp VN. Benefits of an open access echo service. 2013.

28 Mon coeur entre parentheses. Insuffisance cardiaque: une charte pour améliorer la prise en charge des patients 2013.

29 BHF. Parliamentary Report on Living with HF 2016.

30 Di Lenarda A. Una campagna nazionale per promuovere un utilizzo appropriato dei peptidi natriuretici nello scompenso cardiaco. G Ital cardiol 2016;17(1):48-50.