



# Spotlight on **Quality assessment in heart failure care**



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# Executive summary

**Clinical practice in heart failure (HF) is often not aligned with best-practice recommendations.**<sup>1,2</sup> Clear oversight of system performance allows decision-makers, healthcare management and clinicians to identify and address important gaps. This can be achieved with quality indicators.

**Quality indicator frameworks are sets of measures used to assess a range of healthcare components.** Frameworks should be designed to allow the collection of data needed to build a full picture of provided care, by assessing facilities and equipment available (structure indicators), actual clinical practice (process indicators), outcomes and patient experience.<sup>3-5</sup> While a national framework should be broad enough to assess care provided in the different care settings available in the country, local frameworks can be more targeted to the challenges faced in the care setting or region where they will be used.<sup>6</sup>

**Assessment of care with quality indicator frameworks can help identify gaps and support improvements.** This can be done, for example, with national HF registries and audits, which monitor HF management and help decide whether changes are required.<sup>3-5</sup> In addition to identifying gaps and providing information that can support care improvement, the feedback from assessment initiatives can also motivate the HF care team and healthcare organisations to implement processes that support the adoption of best practice.<sup>7,8</sup>

**Despite the recognised benefits of quality assessment initiatives in HF care, their development, implementation and execution present several challenges.** For example, it can be difficult to select the most appropriate quality indicators to include in a framework, particularly because some indicators, such as hospital readmissions, can be misleading when considered in isolation.<sup>3</sup> In addition, data are often not comparable, due to the use of different frameworks and incompatible information technology (IT) systems.<sup>9</sup>

**Limited stakeholder engagement may also be a barrier to assessment and improvement of HF care.** Healthcare professionals must participate in data collection and act on assessment findings. However, many clinicians may struggle with this due to a lack of time and insufficient training.<sup>6,10</sup> The timeline of assessment initiatives is often also a challenge – for example, some national audits take several months to assess data and provide feedback, which can mean that hospitals or clinicians receive feedback on previous rather than current practice.<sup>11,12</sup>

## **There are clear actions that should be taken to support the development and implementation of quality assessment initiatives in HF care across Europe.**

Collaboration and commitment are needed from all key stakeholders to achieve best practice in quality assessment and to support measurable improvements in HF care.

### **Key actions to increase the use of quality assessment in heart failure care**

<b>1. Raise awareness among key audiences of the importance of assessing the quality of HF care</b>	<p>The benefits of standardised quality assessment in HF must be disseminated to healthcare professionals and decision-makers at every level.</p>
<b>2. Encourage the development of standardised quality assessment frameworks that are applicable to different care settings</b>	<p>Comprehensive and standardised quality assessment frameworks are needed to assess care in all care settings and across the entire patient journey in a comparable way.</p>
<b>3. Invest in systems for data collection and analysis</b>	<p>Assessment of HF care relies on proper infrastructure and IT systems. Databases should be comprehensive and reliable to properly collect and store data, and their development may depend on the involvement of different stakeholders.</p>
<b>4. Encourage universal participation in quality assessment programmes</b>	<p>HF quality assessment initiatives require universal participation to realise their full benefits. The strategies used to encourage participation should be carefully considered to avoid perverse incentives.</p>

# What are quality indicators and why are they important in heart failure care?

## Assessment of care with quality indicators has a crucial role in health system improvement

Best practice in heart failure (HF) care is well-established in European and national guidelines.<sup>13 14</sup> However, real-world clinical practice often does not sufficiently align with guideline recommendations,<sup>1</sup> which comes at a high price. Oversight of system performance via assessment of care quality is an essential tool for decision-makers, clinicians and healthcare management, enabling them to identify important gaps and opportunities for improvement. Quality indicators can be used to assess performance against established best-practice standards to facilitate care improvement.

### In HF, the heart is unable to pump enough blood around the body

HF occurs when the heart becomes too weak or stiff to pump enough blood to meet the body's needs.<sup>13 15</sup> As a result, people with HF experience serious symptoms, including fatigue, swelling of the lower limbs and abdomen, and shortness of breath. HF can be life-threatening and have a severe impact on quality of life.<sup>2 13</sup>

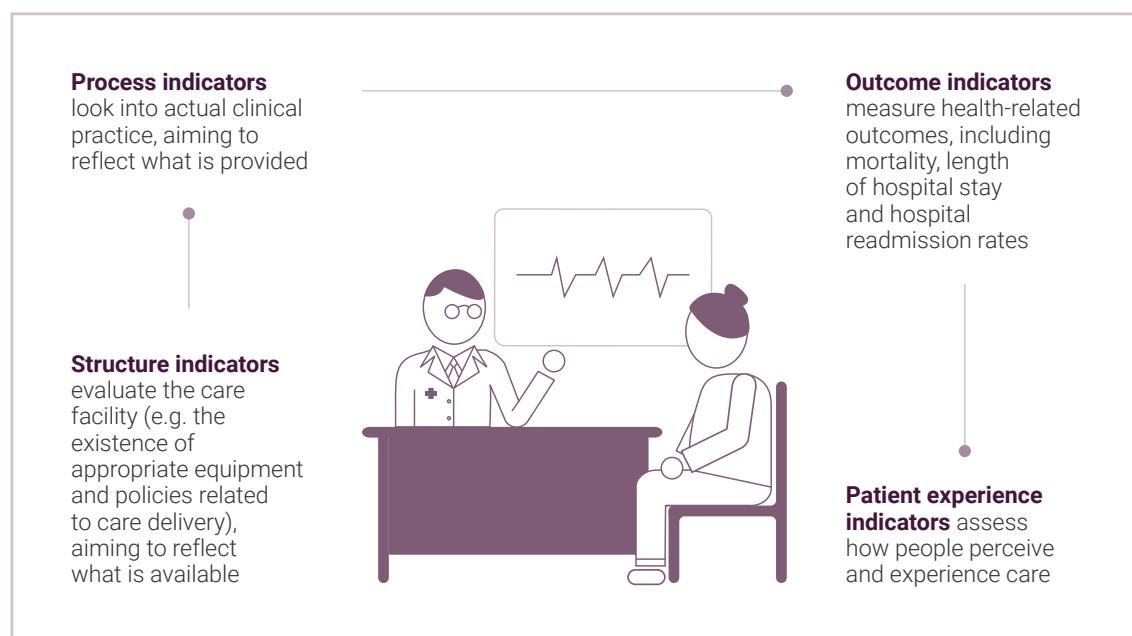
### HF frequently leads to hospitalisation

HF is a chronic syndrome that requires long-term management and is characterised by acute episodes that require urgent care in hospital.<sup>1</sup> It is the leading cause of hospitalisation in people over 65 and one of the most common reasons for hospital readmission in most high-income countries.<sup>2 16</sup> Two-thirds of people with HF are readmitted to hospital within one year of discharge.<sup>17</sup> Improving the quality of HF care, both in the community and in hospital, has the potential to reduce hospitalisations and help prevent disease progression, thus preserving quality of life.<sup>18 19</sup>

## Quality indicators should be designed to assess the full spectrum of care

Quality indicators are predefined measures of quality against which care can be assessed.<sup>20</sup> Local and national performance may be measured against established elements of best practice and clinical targets,<sup>7</sup> such as the recommendations in the European Society of Cardiology (ESC) HF guidelines.<sup>13</sup> Quality indicators can assess several areas, including effectiveness, efficiency, safety and access,<sup>20</sup> and can be broadly divided into four categories: structure, process, outcome and patient experience (*Figure 1*).<sup>3-5</sup> Each framework (or set) of quality indicators should use a range of indicators to build a full picture of the services being provided across care settings and the benefits delivered to patients and healthcare systems. For example, a national framework should be able to assess care provided in hospital and in the community.

**Figure 1. Appropriate categories of quality indicators for comprehensive care assessment<sup>3,4</sup>**



## Patient experience is a crucial component of HF care quality assessment

Although people with HF and clinicians will often have the same goals, such as reducing the need for hospitalisation, people with HF may also have distinct and equally important priorities that are not captured using structure, process or outcome indicators. For example, people with HF may primarily wish to address depression, fatigue, breathlessness and social isolation.<sup>21</sup> Ultimately, their goal may be focused on reducing the impact of specific symptoms on their day-to-day life or addressing the emotional impact of their diagnosis. Understanding whether these goals are addressed in regular clinical practice is crucial to gain full oversight of system performance.<sup>12,22</sup> Both general and HF-specific questionnaires have been developed to assess patient experience and quality of life – such as the Kansas City Cardiomyopathy Questionnaire,<sup>23</sup> the Minnesota Living with Heart Failure Questionnaire<sup>24</sup> and the quality measure set developed by the International Consortium for Health Outcomes Measurement.<sup>25</sup> These tools can be directly incorporated in quality assessment frameworks for HF care. There are several examples of them being used to assess quality of life in people with HF.<sup>26-30</sup>

***'It is becoming more and more clear that assessing patient-reported outcomes – patient experience, perceptions and feelings – and improving them is absolutely crucial to improve not only everyday quality of life, but also treatment adherence and thus mortality.'***

Dr José Silva-Cardoso, Portugal

## **An effective quality indicator framework should be validated by evidence and consensus**

The indicators used to assess quality of care must be based on robust evidence and validated through expert consensus.<sup>5</sup> This can be achieved using established methodologies such as the Delphi technique. Under this methodology, experts anonymously complete several rounds of questionnaires, and after each round receive a summary of reasons for the different positions (or discuss results as a group in a modified Delphi methodology) – this helps reduce variation in the responses and ultimately leads to a consensus.<sup>31</sup> Less formal methods may be employed to reach agreement, such as convening a multidisciplinary expert group to look into available evidence and regularly review the quality indicator framework.<sup>12</sup> Regardless of the methodology used to develop the assessment framework, good quality indicators need to meet several criteria. For example, they need to be clear and standardised as much as possible to allow for consistent data collection and assessment, and they should be sensitive enough to detect changes in quality of care.<sup>5</sup>

## **Successful implementation of quality indicator frameworks is dependent on supportive national and local initiatives**

Quality indicator frameworks are normally developed by government or result from government-funded initiatives.<sup>20</sup> For example, the National Institute for Health and Care Excellence (NICE) in England and Wales was set up by the UK government for the development of treatment guidance and recommendations for care assessment and improvement.<sup>32</sup> NICE invites relevant organisations and individuals to comment on guidance prior to publication. In the Netherlands, the Ministry of Health, Welfare and Sport worked with a team of experts to develop a national healthcare quality assessment framework.<sup>20</sup> This framework draws on data from the national hospital database and can be used to compare care across the country and over time.<sup>20</sup> In addition to national efforts, care improvement has to be supported by local initiatives, be it for the implementation of national/regional frameworks or the development of local assessment frameworks.<sup>6</sup> One of the advantages of a local framework is that it can be targeted to the specific challenges faced by the care setting or region that is going to use it.

## How can quality indicators support improvements in heart failure care?

### Quality indicators can identify gaps in HF care and may encourage improvement

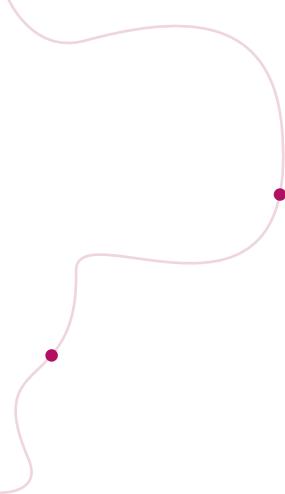
Quality assessment can be used to provide feedback to care teams to help them understand how they are performing against best-practice standards.<sup>7</sup> It can also help decision-makers at national and regional level, for example government officials, payers and hospital management, to identify gaps and opportunities for improvement – in care provided and in outcomes, including quality of life of people with HF. Making data from care assessment publicly available and accessible may motivate healthcare organisations to implement new initiatives. For example, defining hospital readmissions as a quality indicator may encourage the development of post-discharge programmes focused on HF management in the community.<sup>3</sup>

*'Healthcare providers want to offer the best possible care. Seeing the results of a quality audit can motivate them to change their daily practice.'*

Dr Bert Vaes, Belgium

### National registries allow for continuous comparison of performance at the local level

Some countries have established HF registries – comprehensive databases – to monitor and assess the quality of HF care across healthcare providers. As HF is often managed across a range of care settings by various specialists, national registries can provide valuable oversight of the whole system and help identify any gaps, allowing for improvements.<sup>21</sup> Such registries are typically based in hospitals and collect detailed information about people who are admitted to hospital with HF and their outcomes at discharge.<sup>20 33 34</sup> For example, the National Heart Failure Audit for England and Wales assesses hospital care against key process indicators, examines variation in care between hospitals, and determines whether the quality of HF care changes over time.<sup>8</sup> Data from this audit have shown that hospitals in England that score higher on process indicators have lower rates of readmission,<sup>18</sup> demonstrating the potential and credibility of registries in improving HF care.



***'National registries are instrumental in detecting care gaps that can then be corrected. This can lead to better management of HF and, ultimately, improved outcomes and quality of life for people living with HF.'***

Dr José Silva-Cardoso, Portugal

## **Quality indicators can be linked to financial incentives to improve HF care**

The goal of quality assessment is to improve care, and data can promote improvement in many ways. These include pay-for-performance initiatives,<sup>335</sup> such as the Best Practice Tariff (BPT) in England and Wales. The BPT provides hospitals with an incentive payment when they meet two criteria – they need to submit at least 70% of all their relevant data to the National Heart Failure Audit, and at least 60% of patients recorded in the audit must receive specialist care.<sup>36</sup> While the impact of the BPT has yet to be formally evaluated in HF care, the approach has been shown to increase compliance with clinical guidance in other chronic conditions.<sup>37</sup>

## **Quality indicators can be linked to organisational accreditation**

Accreditation schemes can use quality indicators to assess care organisations, giving a formal stamp of approval if minimum quality standards are met. Although HF-specific accreditation programmes do not seem to be commonly implemented across Europe, there are some examples that demonstrate their potential. In Denmark, the Institute of Quality and Accreditation in Healthcare developed a mandatory national hospital accreditation programme with indicators for HF care, which led to increased compliance with HF guidelines.<sup>3839</sup> International examples include the US, where hospitals accredited by The Joint Commission, an organisation that focuses on evaluation and accreditation of healthcare organisations, have been shown to provide better care than non-accredited hospitals in a range of therapeutic areas, including HF.<sup>40</sup>

# 3

## Challenges surrounding assessment of performance in heart failure care

### Poorly selected quality indicators may lead to inaccurate conclusions

It can be challenging to select indicators that can appropriately assess care. It is important that they reflect all aspects related to care, which is why assessment should be carried out using a framework of indicators rather than a single indicator,<sup>3</sup> and should address all categories discussed earlier (structure, process, outcome and patient experience). Data should also be analysed in combination. For example, readmission rates are a common measure of quality in HF care, but a low rate could be the result of high mortality during or after hospitalisation.<sup>9</sup> Similarly, focusing only on reducing readmissions has been shown to increase use of other healthcare services, such as emergency departments.<sup>41</sup> In addition, some indicators, such as length of hospital stay, could lead to inaccurate comparisons between settings; specialised hospitals may see people with more complex HF who have long hospital stays, while other hospitals could perform better on this indicator regardless of actual quality of care.

**'Quality assessment needs to consider all indicators. Positive indicators in one domain in isolation do not necessarily reflect overall high-quality care.'**

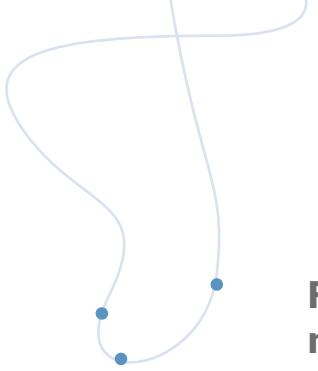
Dr Joseph Gallagher, Ireland

### Feedback from quality audits is not always timely, potentially reducing their impact

Generating analysis from audits and publishing findings can be a time-consuming process, meaning that organisations may receive feedback that is out-of-date because practice has changed.<sup>33 42</sup> This underlines the importance of considering whether data collected via registries should be disseminated more frequently. For example, the Danish Heart Failure Registry now provides feedback to participating centres every month, having previously done so every three months.<sup>12</sup>

**'If you only get results once a year, they can be forgotten in the months in between. Getting feedback more frequently allows providers to regularly review and adjust their practice.'**

Dr Anne Nakano, Denmark



## **Funding strategies that rely on quality indicators may be detrimental to people with HF**

While quality indicators may support the implementation of funding strategies based on financial incentives, it is important to avoid the use of financial penalties that may have a negative impact on people with HF. For example, research shows that programmes that aim to reduce hospital readmissions by imposing penalties when they occur can actually result in higher mortality rates, as hospitals may be incentivised to delay or avoid admitting people who require inpatient care.<sup>43</sup>

## **Assessment data are often not comparable across countries and organisations**

Lack of comparability between assessment frameworks limits the potential for different care providers to compare their performance against each other. Some regional health departments may use the same databases but apply different parameters to assess healthcare quality.<sup>11</sup> On the other hand, different organisations may aim to assess the same indicators but collect data differently, for example using distinct information technology (IT) systems.<sup>12</sup> The lack of a standardised framework or common IT system and inconsistencies in data collection can hinder comparison of care between hospitals or regions, reducing the potential to learn from the mistakes and best practice of others.<sup>11</sup>

## **Limited participation from some healthcare professionals may be a barrier to successful quality assessment initiatives**

Successful implementation of quality assessment initiatives depends on the participation of healthcare professionals, who have to collect and record relevant data and then act on findings.<sup>6</sup><sup>44</sup> Data collection can be a significant challenge for clinicians – relevant data are often not readily extracted from unstructured or free-text medical notes, so must be entered manually.<sup>3</sup> However, clinicians may struggle to do this, often because their high workload means they lack time to dedicate to such activities.<sup>6</sup> In addition, a lack of training opportunities means some clinicians may have a limited understanding of data collection frameworks.<sup>10</sup>

***'Not everyone knows that they can access regular feedback. It takes time for people to learn to look at the feedback and react to it.'***

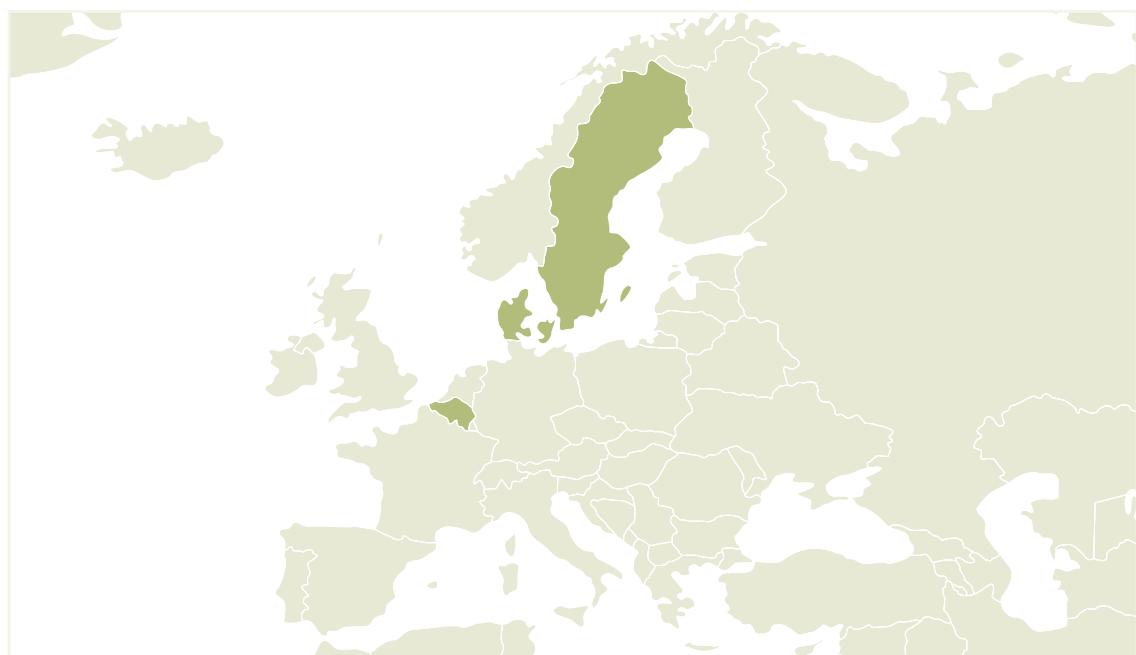
**Dr Anne Nakano, Denmark**

## 4

## Case studies of real-world assessment of heart failure care

### A range of HF quality assessment strategies are in place across Europe

Several programmes have been developed and implemented to assess the quality of HF care and support improvements at regional, national and pan-European levels. The case studies below are examples of best practice in HF quality assessment.

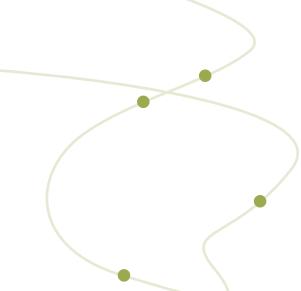


#### Case study

##### National HF registry aiming to improve care and research

The Swedish Heart Failure Registry (SwedeHF) was implemented in 2003 to collect data on people with HF. The majority (88%) of hospitals and approximately 10% of primary care clinics enter data on the registry using a web-based platform that collects around 80 variables per patient.<sup>45</sup> These variables include results from laboratory tests, ejection fraction, demographics, clinical characteristics, comorbidities and cardiovascular treatments. Since 2005, SwedeHF has also been collecting information on symptoms and quality of life.<sup>46</sup> Collected data can be linked to other national databases, namely the National Patient Registry, which covers a range of diseases (such as cancer, kidney disease and stroke), and Statistics Sweden, which records socioeconomic data.<sup>45</sup>

SwedeHF has helped to improve HF care and research in various ways. For example, the data have contributed to a better understanding of the epidemiology of HF in the country and which treatments may be most appropriate for specific patient subgroups, improving clinical practice.<sup>45 47</sup> This may be one of the reasons for the lower mortality rates seen in people enrolled in SwedeHF compared with people with HF who are not enrolled in the registry.<sup>48</sup>



## Case study

### Providing monthly feedback with a national audit

The Danish Heart Failure Registry was implemented in 2003 to monitor and improve the quality of HF care across the country.<sup>34</sup> Participation in the registry is mandatory for all hospitals and outpatient cardiology clinics, and data are entered for each person diagnosed with HF for the first time. Feedback reports assessing care in all organisations across the country were initially provided every three months, and are now provided every month.<sup>12</sup> These reports enable understanding of performance in each organisation and comparison with others.<sup>34</sup>

The quality indicators used in the registry were selected by a multidisciplinary panel of experts, who consulted national and international guidelines as well as published literature.<sup>34</sup> This panel, which now includes two patient representatives, meets annually to review the indicator framework and make changes when deemed necessary.<sup>12</sup> It also reviews audit findings each year and identifies hospitals that are not meeting established standards to discuss results and identify barriers to best practice.<sup>12</sup>

Since the introduction of the HF registry in Denmark, there have been substantial improvements in a range of care processes, partly attributed to the registry, including the use of echocardiography and provision of physical training and patient education.<sup>12 34</sup> Good performance on process indicators in the registry is significantly associated with reduced mortality within one year of diagnosis.<sup>49</sup>

## Case study

### Audit and feedback system in primary care settings<sup>22</sup>

A network of general practitioners (GPs) in Belgium is currently developing an electronic audit and feedback system to assess HF clinical practice in primary care and provide individualised feedback. Following extensive research to inform the design of the system, it is now about to be trialled in the participating GP clinics. The system will extract data from electronic medical records and automatically generate reports. For example, it will be possible to identify all patients who are, or are not, on a specific medication. The system will also allow for the inclusion of notes on the records of individual patients, such as an alert to review the medication plan in the next appointment with the GP.

There is increasing interest in joining this network as the audit and feedback system is expected to provide a valuable tool for both assessment and improvement of clinical practice in HF, by supporting individual clinics to set their own goals and develop specific strategies to address care gaps.

## Case study

### Supporting quality in national cardiovascular registries

The ESC has recently launched a project to support the development of compatible national registries for monitoring the quality of cardiovascular care.<sup>50 51</sup> European Unified Registries On Heart Care Evaluation and Randomized Trials (EuroHeart) will develop an IT system and data infrastructure that participating countries can use to continually collect data on people living with cardiovascular diseases, including HF.<sup>50</sup> The aim of this project is to support ongoing quality improvement in cardiovascular care across Europe.<sup>50</sup>

During the first two years of the programme, the system will be piloted in two to four countries.<sup>50 51</sup> Wider roll-out is anticipated following this first phase.<sup>50</sup>

# The way forward

## **Quality indicators can use real-world data to assess and improve care**

Evidence suggests that quality assessment can support improved HF care and lead to fewer rehospitalisations and lower mortality rates.<sup>18 48</sup> Collaboration between all key stakeholders is necessary for the development and implementation of robust and standardised frameworks for data collection and analysis.<sup>44</sup>

## **Concerted action is required to fully realise the benefits of assessing the quality of HF care**

We propose actions to support the understanding of the potential of quality indicators in HF care, ultimately with the goal of reducing the impact of HF on individuals, the healthcare system and society in general.

### **1. Raise awareness among key audiences of the importance of assessing the quality of HF care**

The potential of using quality indicators to assess HF care and identify areas for improvement does not seem to be widely recognised among healthcare professionals, decision-makers or policymakers. Similarly, the key role of protocols for improvement of HF care based on the results of care assessment is not widely acknowledged. National or regional-level roll-out of standardised assessment initiatives will require buy-in from all relevant stakeholders, and it is therefore essential to raise awareness of the potential benefits.

### **2. Encourage the development of standardised quality assessment frameworks that are applicable to different care settings**

It is important that quality indicators allow for consistent and comprehensive evaluation of HF management across care settings. This is only possible with standardised frameworks that can collect all relevant data along the entire patient journey, addressing all key categories of indicators (structure, process, outcome and patient experience). Several stakeholders should be involved in the development of these frameworks, including clinicians from primary and specialised care settings, hospital representatives, patient advocates and policymakers.

### 3. Invest in systems for data collection and analysis

There is a need for comprehensive and reliable databases to collect and store data for quality assessment. Databases should consider how to routinely incorporate a range of information, including via new technologies. For example, digital medical notes could potentially be used for data collection via automatic extraction to the databases,<sup>3</sup> and platforms used for telemedicine could also feed directly into the quality assessment data pool. Once data have been collected, they must be analysed in order to be transformed into actionable information. Therefore, there is a need for infrastructure and algorithms that can ensure data are collected and analysed, and that allow for feedback on performance to be provided rapidly so improvements can be implemented with minimal delay.<sup>50</sup> The development of this infrastructure may benefit from the involvement of different stakeholders, for example through the creation of public–private partnerships.

### 4. Encourage universal participation in quality improvement programmes

Universal participation in HF quality assessment initiatives is needed to achieve the full benefits and drive care improvement.<sup>11</sup> Several strategies may be employed for this, such as encouraging healthcare professionals to engage with quality assessment efforts, for example through professional societies. Another strategy could involve financial incentives for those who adequately participate in data collection, for example by reporting sufficient information.<sup>36</sup> The approach taken must be considered carefully, recognising that financial incentives may not always lead to better quality of care.<sup>52</sup>

## The time has come to ensure that the quality of HF care is thoroughly assessed to support continual improvement

We hope this report and the actions proposed may lead to positive changes in HF policy and practice – ultimately improving the care received by millions of people living with HF across Europe.

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## About the Heart Failure Policy Network

The Heart Failure Policy Network is an independent, multidisciplinary group of healthcare professionals, patient advocacy groups, policymakers and other stakeholders from across Europe whose goal is to raise awareness of unmet needs surrounding heart failure and its care. All members provide their time for free. All Network content is non-promotional and non-commercial. The Secretariat is provided by The Health Policy Partnership Ltd, an independent health policy consultancy based in London.

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