



# Heart failure

policy and practice  
in Europe

# Greece



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**The Heart  
Failure Policy  
Network**



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## About the Heart Failure Policy Network

The Heart Failure Policy Network (HFPN) is an independent, multidisciplinary network of healthcare professionals, advocacy groups, policymakers and other stakeholders from across Europe. It was established in 2015 with the goal of raising awareness of unmet needs and seeking meaningful improvements in heart failure policy and care. Our aim is to help reduce the burden of heart failure – on people living with it, those supporting them, health systems and society at large.

All members of the HFPN 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, UK.

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- ▶ **Kostas Athanasakis**, Health Economist, University of West Attica
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- ▶ **Christos Lionis**, General Practitioner; Professor of General Practice and Primary Health Care, Head of Clinic of Social and Family Medicine Faculty of Medicine, University of Crete
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# About Heart failure policy and practice in Europe

Heart failure (HF) is a common and complex condition responsible for extensive avoidable morbidity, mortality and healthcare costs. There is a clear need to advance HF policy and practice across Europe, and this requires recognition of the real challenge in each country.

To this end, the Heart Failure Policy Network (HFPPN) has developed *Heart failure policy and practice in Europe* – a comprehensive analysis of key gaps and best practice both in HF policy and in clinical performance across 11 European countries. In this work, we investigate each country's progress in addressing the HF challenge, for example in terms of the existence and implementation of HF policies and the provision of multidisciplinary and integrated HF care. Findings are presented in an overarching report, which outlines the methodology for this work and includes a pan-European narrative, and in standalone country profiles with dedicated national-level analysis.

Urgent action is needed to address the growing burden of HF and ensure the sustainability of our healthcare systems. This country profile aims to assist HF advocates across Greece in engaging healthcare system leaders to demand constructive changes to HF policy and care provision, to reduce the impact of HF on people living with the syndrome, their families and carers, the healthcare system and society.

# Heart failure in Greece

## SUMMARY

Heart failure (HF) places a heavy burden on those who live with it and on health services,<sup>1</sup> but no formal government response to this challenge or national audit has been developed.

For the past decade, Greece has been undergoing a health system reform, but several major challenges persist. These include a difficult policy environment for the improvement of chronic disease management. A significant historic deficit in community-based, integrated healthcare models has received little policy attention and central investment, as a result of a focus on major cuts in healthcare spending.<sup>2-4</sup>

While some improvements have been made in HF care, many barriers remain.<sup>5</sup> Significant opportunities have been identified in national research to reduce avoidable hospitalisations, such as early identification and management of cardiovascular risk factors.<sup>1</sup> There is a need for greater involvement of nurses in HF management and for nurse training on HF.<sup>6,7</sup> Experts note that several key components of care are consistently missing, including cardiac rehabilitation and self-care education, with care largely reactive to HF symptoms rather than supportive of ongoing management.<sup>2,4,8</sup>

## HF is common in Greece, but its true prevalence is unknown

Cardiovascular disease and risk factors for HF are highly prevalent in Greece, but recent data on the prevalence and incidence of HF are lacking.<sup>9</sup> Historical data from 2005 estimated that there were approximately 200,000 people living with HF in Greece, with about 30,000 new cases diagnosed per year.<sup>10</sup>

Across Europe, the prevalence of HF has risen in the past decades, mostly due to ageing populations and improved survival rates for cardiovascular and other long-term conditions,<sup>11</sup> and experts believe the situation in Greece to be similar.<sup>5</sup> The absence of data has been noted as a major barrier to the development of a coherent response to HF.<sup>2,5</sup>



**200,000**  
living with HF

## HF is associated with high expenditure

HF has a significant economic impact on the health system and society: in 2012, total cost of HF was estimated at USD \$533 million (approximately €416 million).<sup>12</sup> Direct costs were thought to account for approximately 72% of this, with the additional expenditure attributed to indirect costs linked to productivity loss and informal care.



€4,400

cost of HF care per person per year

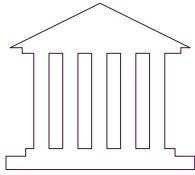
The true cost of HF may be higher. In a more recent study, the authors estimated the direct cost of HF care in the public health system at over €4,400 per person per year.<sup>1</sup> Out-of-pocket expenditure, which is generally high in Greece,<sup>13</sup> further adds to the costs of HF.

## Hospitalisation is the main cost driver for HF

Hospitalisations for HF last a median of seven days and account for over two thirds of the total cost associated with HF, with estimates of expenditure for the public health system ranging from around €2,300 to €3,200 per hospitalisation.<sup>114</sup> Many admissions are preventable, as they are reported to be mostly due to lack of adherence to treatment and uncontrolled hypertension.<sup>114</sup>

## Outcomes are often poor for people with HF

HF is associated with poor clinical outcomes. One study found that hospitalisation and annual mortality rates for people with HF managed in the community were reported at 19% and 8% respectively during one year of follow-up.<sup>1</sup> Both rates were higher among people who had already been hospitalised for HF, with a rehospitalisation rate reported at 43% and mortality at 24%. Advanced HF is also linked to poorer outcomes and higher costs.<sup>1</sup> Recent data suggest that emergency admissions in cardiology departments, including hospitalisations for HF, declined during the COVID-19 pandemic.<sup>15 16</sup> This has raised questions regarding the potential impact of COVID-19 on HF, including exacerbation in the near future.<sup>17</sup>



# Heart failure policy in Greece

## Formal plans on HF

### **Greece has no national HF strategy**

The government has yet to develop a formal plan on HF. Greece is currently undergoing a major healthcare reform of primary care services,<sup>18</sup> and while this is encouraging, it is unclear whether it will significantly improve HF care. The Primary Care Plan announced in 2017 established that primary care settings should be staffed by multidisciplinary teams and take responsibility for referrals to specialist services<sup>19</sup> – a system that could, in principle, support integration of HF care. However, experts voice concern that the plan may be insufficient to improve chronic disease management or limit fragmentation of care, and it will not support all people living with HF as a large majority of the population does not have an assigned general practitioner (GP).<sup>8</sup>

## Investment in integrated HF models and facilitative tools

### **HF diagnostic tests are not consistently reimbursed, missing opportunities to streamline resource use and care pathways**

Limited reimbursement of core diagnostic tests likely constitutes a barrier to HF diagnosis. Echocardiography, the most accurate diagnostic test, is reimbursed across care settings, but natriuretic peptide (NP) testing, which is key to diagnosis as it can help avoid unnecessary echocardiography,<sup>20</sup> is only reimbursed in hospital settings.<sup>2</sup> If prescribed outside of the hospital, its cost must be covered out of pocket. Given the widely accepted role of NP testing in streamlining diagnostic pathways, this suggests that Greece is missing an important opportunity to optimise the use of resources.



## **There is a lack of investment in integrated models and a need for wide implementation of digital tools in HF care**

There may be limited awareness among policymakers of the value of integrated models of HF care.<sup>37</sup> Experts have reported that investment in integration of care is limited, with successful pilot projects often not continuing beyond the pilot phase, and little funding being available for the development of enduring local, regional or national models.<sup>2</sup>

HF may not have benefited sufficiently from other primary care reforms. For example, Greece implemented a telemedicine programme decades ago in an effort to improve access to healthcare across the country, which can be challenging due to the high number of islands and remote regions.<sup>13</sup> In 2016, the programme was strengthened, becoming the National Telemedicine Network. While in theory the network has the potential to promote multidisciplinary and integrated care in HF and other chronic conditions, it currently has limited application – it is mostly used for emergency care.<sup>2,8</sup>

Experts report that the COVID-19 pandemic has accelerated the adoption of digital tools in medical care, such as systems for prescription of medicines via text message,<sup>7,17</sup> and state that a wider use of digital technology in healthcare has been under discussion in the Greek Parliament.<sup>8</sup>

## **Electronic health records are being implemented, but the information technology system remains inadequate and hinders integration of care**

Experts have stated that lack of interoperability of information technology (IT) systems is a critical barrier to integrated HF care.<sup>8</sup> For example, a small number of hospitals in Athens use the same IT system, which supports integration of care, but overall there are no clear protocols or platforms for communication across hospitals.<sup>6</sup> However, the government has recently initiated the implementation of an electronic medical record system for public healthcare. This is expected to improve continuity of care and management of HF in primary care by supporting communication between healthcare professionals across care settings.<sup>3</sup>

## **Development of the HF healthcare workforce**

### **Workforce shortages and a lack of HF-specific training pose significant challenges to effective HF management**

The opportunity to manage HF effectively is hindered by a significant shortfall in the healthcare workforce. There is a high number of specialist physicians, including cardiologists,<sup>21</sup> but relatively few GPs and nurses. In fact, Greece has the lowest reported ratio of practising nurses in the EU, at 344 per 100,000 people. This number had remained virtually unchanged since 2002<sup>19</sup> and was brought closer

to the EU average only in 2020, prompted by the COVID-19 pandemic.<sup>5</sup> The Hellenic Heart Failure Clinics Network has called for greater involvement of nurses in the management of HF, in areas such as prevention, early diagnosis of worsening symptoms and self-care education, but acknowledges that the shortage of nurses may be a potential barrier to this.<sup>22</sup> It remains to be seen whether the recent increase in the number of nurses in the public health system has been sufficient to address the gaps. There is also a lack of recognition of specialist roles, with no formal accreditation for HF specialist nurses.

The government has also made efforts to increase the number of GPs, but leading primary care experts from Greece report that this has had limited success so far.<sup>8</sup> Potential reasons may include the need for greater understanding at the central policy level as to what the primary care profession entails, which could better inform strategies to foster interest in this career path.<sup>8</sup>

The healthcare workforce needs training opportunities to become better equipped to respond to HF.<sup>27,8</sup> The Hellenic Society of Cardiology, through its working group on HF, leads most HF training initiatives currently available in Greece, such as courses for cardiologists and other clinicians.<sup>5</sup> However, many of the courses for nurses are very technical, focusing for example on cardiac devices, and there is still a need for broader opportunities for nurse training on HF management.<sup>6</sup> In the short term, specialisation opportunities provided by the European Society of Cardiology (ESC) are likely to be vital.<sup>6</sup>

The COVID-19 pandemic may have helped to raise awareness of the value of multidisciplinary care, but experts highlight the importance of introducing integration of care and communication with colleagues and patients early in the medical curricula.<sup>8</sup>

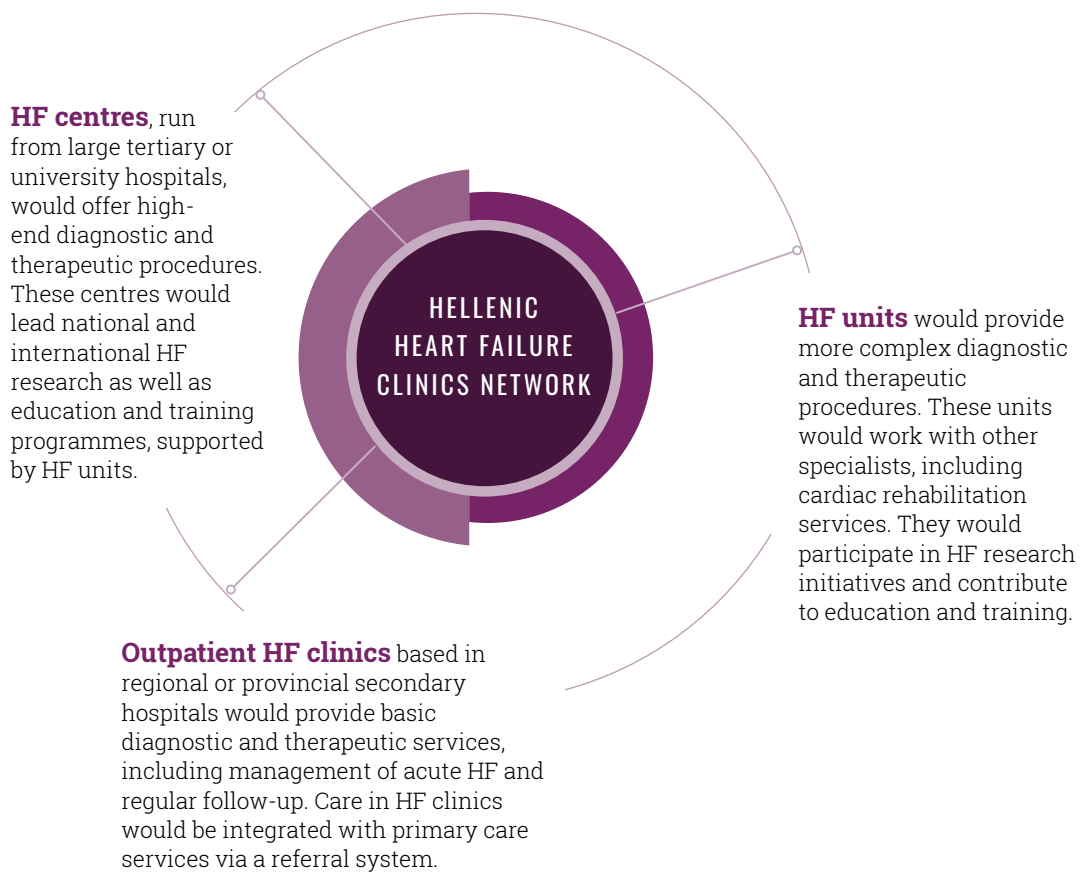
## Guidance and local care pathways for delivery of quality care

### HF guidance and care pathways are lacking

The Hellenic Society of Cardiology has endorsed the 2016 ESC guidelines for HF.<sup>23</sup> In addition, different organisations have developed guidelines applicable to specific care settings or stages in the care journey. In 2014, the Clinic of Social and Family Medicine of the University of Crete formulated recommendations for HF management in primary care settings, including an algorithm for HF diagnosis.<sup>24, 25</sup> In an effort to standardise HF practice around hospitalisation, the Hellenic Heart Failure Society published a structured HF discharge document in 2016.<sup>26</sup> The document was expected not only to improve clinical practice but also to help healthcare authorities identify and address unmet needs.<sup>26</sup>

There is, however, no HF care pathway or national network. The Hellenic Heart Failure Association has called for a network with HF centres at different levels of the system (see *Figure 1*).<sup>6,22</sup> The implementation of this network could have great potential in supporting improvement in the management of HF, but experts note several barriers to implementation. For example, they highlight the need for partnerships to ensure funding of the network and point to the limitations posed by underlying issues, such as inadequate NP testing reimbursement policies.<sup>2,7</sup> In addition, while the proposed network places importance on the involvement of primary care professionals in the management of HF, there may be a need for greater collaboration between healthcare professionals.<sup>8</sup>

FIGURE 1. Hellenic Heart Failure Clinics Network proposed by the Hellenic Heart Failure Association<sup>22</sup>



## Public audits of performance and high-level assessment initiatives

### **The lack of HF care assessment has held back oversight of services**

There is no HF registry or formal audit of HF care, which hinders efforts to gain an understanding of the benefits of any new initiatives, or the scale of the challenge posed by HF more broadly.<sup>5</sup> For example, HF has been reported to affect people in Greece at an earlier age than in other European countries, and to involve more co-existing health conditions (comorbidities),<sup>1</sup> but without an ongoing national registry it is difficult to identify and address the underlying causes. Experts have highlighted the importance of a national registry and of collecting real-world data, including prevalence, management and costs;<sup>2,5</sup> this may be a natural next step following the implementation of a comprehensive IT system that promotes integration of care.<sup>3</sup> Funding of such a registry, however, may be an issue.<sup>6</sup>

In the meantime, there are some notable regional efforts that may provide best-practice examples. A local primary care assessment initiative in Crete, the Cardiovascular Disease Primary Care Observatory, has been in pilot implementation stages since September 2020.<sup>8</sup> It currently focuses on HF and aims to collect data on HF management, with the goal of facilitating care.



# Heart failure practice in Greece

## Diagnosis

**There is a need to improve recognition of HF symptoms, but it is unclear how much the limited awareness of symptoms impacts HF diagnosis**

The high numbers of cardiologists and the ability for people to see them without a referral enable easy access to cardiology care.<sup>2</sup> In addition, virtually all cardiologists opt to perform an echocardiogram on all their patients, which may support a prompt, definitive diagnosis.

However, the absence of a national HF registry or assessment initiative is a barrier to a clear understanding of challenges and delays in diagnosing HF. This is a concern, as significant delays in presentation to specialists, diagnosis and initiation of treatment are consistently reported in international literature.<sup>27-30</sup>

## Hospital care and discharge

**There is significant national variation in the management of acute HF**

The creation of outpatient HF clinics over the past 10 years has led to considerable improvement in HF management,<sup>5</sup> but coverage is not yet universal and other issues remain. The management of acute HF is typically led by a cardiologist.<sup>6</sup> However, some cardiologists may lack experience in HF,<sup>6</sup> which is of concern given the relatively high frequency with which challenges arise in the management of acute HF, for example optimisation of medication in the presence of certain comorbidities or side effects.<sup>5</sup> In addition, experts report that during particularly busy periods, some people with acute HF may wait too long in emergency departments until care is provided.<sup>7</sup>

### **Provision of discharge planning is inconsistent**

National experts point to several issues with hospital discharge and post-discharge care. For example, people with HF are often discharged too early and asked to adjust medication doses at home depending on signs and symptoms, despite limited provision of self-care education.<sup>6,7</sup> This may be a significant challenge for people with HF – who are often older and may have physical limitations – and may lead to hospital readmission.

Other elements of hospital discharge are reported to be poorly integrated. For example, continuity of care to community settings is rarely considered and test results are not routinely shared with GPs.<sup>8</sup> For people living outside of big cities, there are very few follow-up appointments to ensure stabilisation of HF, and management in the community is reported to be rare.<sup>6</sup> The lack of an electronic platform allowing for clear communication between care settings, the absence of a national referral network and the limited number of primary care professionals are considerable barriers to effective care transitions.

## **Key components of quality care in community settings**

### **There is significant inequality in the provision of HF care**

There is variation in HF care across Greece, which may lead to inequalities in access to care and outcomes.<sup>3</sup> The lack of formal care pathways has been an important contributor to this, as have economic discrepancies; for example, experts report that access to primary care professionals is highly variable in Greece, and people who are able to access private cardiologists typically receive better care.<sup>7</sup> The geographical features of the country, with many islands and remote areas, also play a part in care inequality.<sup>21</sup> These areas often lack a specialist workforce, and travelling elsewhere to see a specialist may be difficult for some of their inhabitants.<sup>7</sup>

### **Several key components of ongoing HF care are provided inconsistently, if at all**

There has been some progress in the management of HF in the past decade as a result of the growing number of outpatient HF clinics,<sup>5</sup> but several important elements of care are still not widely provided. For example, there is a need to facilitate care provided remotely.<sup>6</sup> In addition, use of cardiac devices has been reported to be low, despite it being an important component of HF management.<sup>6,31</sup> Several reasons for this have been identified, including low awareness of guidelines, lack of operators and trained personnel, and limited hospital budgets.

## **Cardiac rehabilitation is rarely available for people with HF**

According to experts, cardiac rehabilitation is almost entirely absent from the public health system, partly owing to the lack of clinics for its provision and a lack of training in its delivery.<sup>6,21</sup> Sometimes instructions for home exercises are given over the phone, which is insufficient to ensure proper rehabilitation. While physicians in the private health system aim to provide rehabilitative support, there are no comprehensive programmes encompassing all aspects of cardiac rehabilitation, so the existing offer in private settings remains suboptimal.<sup>2</sup>

## **Provision of self-care education, psychological support and palliative care for people with HF is insufficient**

Self-care education and psychological support are not consistently offered to people with HF. This may be due to the heavy workload of healthcare professionals and the low number of nurses.<sup>6,7</sup> Psychological support is not traditionally provided in the public healthcare system and must be paid for out of pocket. Overall, experts report that these two care components are not seen as a priority.<sup>8</sup>

Palliative care is also rarely offered in HF – it has been reported to be limited to people with cancer and, to a lesser extent, neurodegenerative diseases.<sup>32</sup> This may be due to the lack of guidance and training in the area, the small number of palliative care specialists and geriatricians, and the fact that some physicians do not fully recognise the impact of HF on life expectancy.<sup>2,32</sup>

## **Tools and methods to support multidisciplinary and integrated ongoing HF care**

### **There are not enough tools and working methods that promote multidisciplinary and integrated ongoing HF care**

To date, few nationally developed tools or working methods to assist multidisciplinary care seem to exist in Greece. One option that has been tested for the improvement of HF management is a care model based around nurse-led telephone follow-up.<sup>33</sup> The pilot was shown to improve quality of life, but wider implementation of similar interventions is hindered by limited workforce availability.

The Task Force of the Hellenic Heart Failure Clinics Network has called for improvements in communication throughout the HF care journey.<sup>22</sup> It has suggested the development of an 'HF patient booklet', which could include test results and physicians' notes, to allow for clear oversight of care for each person with HF.

# The way forward

HF poses a challenge to the sustainability of healthcare systems in countries across Europe, including Greece. It is a manageable – and often preventable – syndrome, yet it continues to affect a great number of people and its burden on the national health system and society is significant.

Greece has been undergoing a health system reform for the past decade, but management of HF remains fragmented and there is an urgent need for efforts to be focused in this area. The COVID-19 pandemic has significantly affected the organisation of healthcare services, and its impact must be better understood in order to develop a coherent and robust response to the challenge posed by HF.

## **SEVERAL ACTIONS ARE ESSENTIAL TO ADDRESS THIS CHALLENGE.**

### **Increase** awareness of HF among the public and decision-makers, and develop wider awareness and HF specialist skills in the healthcare workforce

Understanding of HF must be improved at all levels to overcome the political and societal inertia surrounding many aspects of care and system leadership. Policymakers have yet to recognise the significant challenge that HF poses to the healthcare system and society – for example, the scale of unmet needs and inequalities in access – and develop a coherent response to HF. It is equally important to improve the skills and knowledge of HF signs, symptoms and best-practice recommendations among healthcare professionals, including the need for integration of care. Urgent efforts should focus on expanding nursing skills and capacity in HF. Given the high demands HF places on the healthcare system, medical curricula must address HF comprehensively and junior doctors must receive appropriate training in HF management. Postgraduate and continuing training in HF, for example led by national professional societies, can support the correct identification of signs and symptoms as well as optimal management of HF in line with guidelines.



### **Amend** the primary care reform to include a programme for management of HF and address primary care workforce shortages

The primary care reform has been designed to help support multidisciplinary working and referrals from primary care to specialists, but it should take a step further to recognise the impact of HF on society and people living with the syndrome. The plan should be expanded to include an HF programme to ensure that GPs can have an active role in both diagnosis and management of HF. In addition, to facilitate consistent access to primary care professionals, it is essential that the shortfall in GPs be addressed. The recent addition of nurses should also be evaluated to understand whether this has been enough to meet the needs of the HF and other chronic disease populations. Access to GPs should be expanded to allow all people living with HF to benefit from the primary care reform and HF management improvements.

### **Reimburse** NP testing in community settings to support timely and appropriate diagnosis of HF

Reimbursement of NP testing is crucial not only in hospital settings but also in the community, as the test can help prioritise referrals for echocardiography. This can facilitate timely diagnosis and access to treatment, in addition to avoiding unnecessary echocardiograms. Professional societies can support the correct use and interpretation of diagnostic tests for HF via training opportunities.

### **Develop** care protocols that define the organisation of care and the involvement of crucial healthcare professionals

There is a clear need for an HF care pathway that defines standards for organisation of care, recognising that people living with HF have complex, sometimes urgent, needs and require care from a variety of professionals. There is thus a need for protocols for regular communication and support between cardiologists, GPs and nurses – and other professionals when needed – and a referral pathway with clear access criteria. This should ensure, for example, that people with acute HF have immediate access to care in emergency departments. The care pathway should include key components of care, such as cardiac rehabilitation and self-care education.

**Invest** in tools to support communication across care settings, including telemedicine and an appropriate IT system

The recent implementation of electronic health records was an important step in improving healthcare services, but there is still a clear need for investment in an IT system that fosters communication and collaboration. An advanced IT system that allows all healthcare professionals involved in the care of people with HF to access the same information would promote fully informed decision-making, helping to improve outcomes and reduce the burden of HF. This could also become a foundation for a national HF registry, which would help characterise the HF challenge, assess the benefits of clinical practice and incentivise adherence to guideline recommendations. In addition, investment in telemedicine tools can help provide HF care across the country, particularly to people in remote areas, and therefore help improve HF care protocols.

Focusing on these priority areas will likely offer a cost-effective opportunity to improve life for people with HF, reduce hospitalisations and mitigate future pressures.

This is an investment in a more resilient and prepared health system, not just for HF but for chronic diseases more generally.

The creation and maintenance of national strategies and plans in HF is likely to be vital to long-term success. There are many strengths and existing resources within the healthcare system on which to build. Lasting success will require effective central oversight of inequalities and unacceptable variations, as well as long-term collaboration and commitment from decision-makers, patient representatives, healthcare professionals and the private sector. Failure to pursue the actions recommended in this report will allow HF to continue to challenge the sustainability of the healthcare system in Greece.

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## The Heart Failure Policy Network

To find out more about the Heart Failure Policy Network and this work, go to **[www.hfpolicynetwork.org](http://www.hfpolicynetwork.org)**

If you have any comments or questions, please get in touch with the authors at **[info@hfpolicynetwork.org](mailto:info@hfpolicynetwork.org)**