



Heart failure

policy and practice
in Europe

Belgium



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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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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 Belgium 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 Belgium

SUMMARY

The burden of heart failure (HF) in Belgium is high, both in terms of pressures on the healthcare system and impact on people with HF and their families.¹⁻³

Policymakers have introduced a national strategy on integrated care for chronic diseases,⁴ but HF experts report that it may be too general to have a substantial impact on HF care and outcomes.⁵ There is currently no formal recognition of HF specialism for healthcare professionals, and the lack of reimbursement for HF nursing hinders efforts to build an adequate HF healthcare workforce.

National centres of excellence are leading the way in terms of multidisciplinary and integrated care,^{5,6} but many hospitals in Belgium still lack a dedicated HF service.⁷ Improvements are needed in diagnosis⁸ and community care⁶ to achieve better outcomes for people living with HF and reduce the burden of the syndrome in Belgium.

HF is a common syndrome

More than 200,000 people are estimated to be living with HF in Belgium,¹ but experts believe the real number to be higher. The estimated prevalence of HF ranges from 1% to 3%, based on general practice data.^{9,10} In the 2018 national Health Interview Survey, 2% to 4% of people reported belonging to the 'serious heart disease' category, which is often used as an indication of the combined prevalence of HF and arrhythmia.¹¹

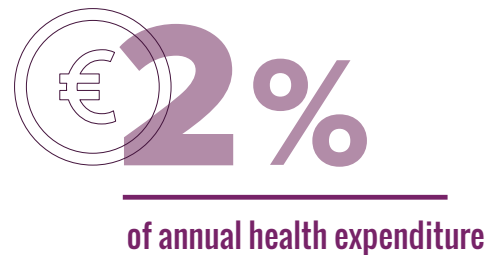
That number was higher among people over the age of 75, ranging from 6% to 16% depending on the region. Recent data on the incidence of HF are lacking, but in 2006 it was estimated at 194 diagnoses per 100,000 people, or more than 15,600 new diagnoses per year.¹²



HF is a common cause of hospitalisation, linked with poor outcomes and a high cost burden

HF is reported to be the most common cause of hospitalisation in people over the age of 65.¹ The length of hospital stay is substantial; from 2008 to 2012, the median was nine days, based on registry data from two hospitals.¹³ According to a major study of Flemish hospitals, one in five people hospitalised with acute HF experienced worsening outcomes within six weeks of discharge, namely visits to emergency care, hospital readmission and/or death.²

In 2012, the total cost of HF was estimated to be USD \$1 billion (€781 million), consuming an estimated 2% of national healthcare expenditure.¹⁴ Direct costs, at an estimated USD \$728 million (€569 million), made up almost three quarters of HF expenditure.



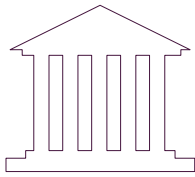
The burden of HF on people living with the syndrome, their families and carers is substantial

HF has a considerable impact on those who live with it. A three-year study in a Brussels centre found that 32% of people with HF with preserved ejection fraction (HFpEF) reported poor quality of life.³ General practice data suggest that people living with HF typically have four to five additional health conditions (comorbidities),^{9,10} further increasing their disease burden and the potential pressure on family members and carers.

Mortality rates for HF are high. The one-year mortality rate for people living with HFpEF was estimated at 12%, based on data from a Brussels centre from 2015 to 2017.³ Historical studies have estimated the mortality rate for people with HF at 7% in hospital,² and at 19% and 26% in the six and twelve months following diagnosis.¹²



The COVID-19 pandemic is likely to have disproportionately affected people living with cardiovascular diseases, but data specifically for HF are lacking.¹⁵



Heart failure policy in Belgium

Formal plans on HF

Belgium has no national HF strategy

The Belgian government has yet to develop a formal plan on HF. However, in the absence of a dedicated strategy, other policy initiatives could hold promise in advancing HF care if they are supported by regional stakeholders with an interest in the syndrome. In 2015, regional and national policymakers approved a plan for integrated care for chronic diseases, which aims to increase healthcare quality, promote efficient use of healthcare resources and improve the health of the public, particularly people living with chronic disease.⁴ The strategy covers any disease or condition that requires long-term care and support, but experts report that as yet it may be too general to have an impact on HF care and outcomes on a national scale.⁵ Encouragingly, some decision-makers have prioritised HF as a key issue in their efforts to implement the national strategy, resulting in local initiatives to improve HF care.¹⁶

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 is certain to constitute a barrier to HF diagnosis and very likely to generate unnecessary burden on specialist diagnostic services. Echocardiography, the most accurate diagnostic test, is reimbursed in hospital settings.⁶ However, natriuretic peptide (NP) testing, which is key in the diagnosis of HF as it can help avoid unnecessary echocardiography,¹⁷ is not reimbursed in Belgium, meaning that people need to pay for it out of pocket, typically around €25 per test.⁸ Experts suggest that there may be political inertia involved, as there is a strong consensus on the value of NP testing among HF patient advocates, healthcare professionals, laboratory specialists and industry partners.^{18,19}

Investment in integrated models of HF care is increasing

Central investment is helping to drive regional implementation of integrated HF models. Under the national strategy on integrated care for chronic diseases, the government has funded 12 pilot projects to test multidisciplinary care models, including new approaches for HF.²⁰ Two of these projects introduced regional care pathways for the management of HF, one in south and mid-west Flanders and another in Leuven.^{21,22} The pathways span hospital and community care and involve several healthcare professionals, including cardiologists, HF nurses, general practitioners (GPs), pharmacists, dietitians and psychologists. They were launched in 2019 and will be evaluated in late 2020 and beyond.^{20,23} Similar pathways have been introduced elsewhere without funding from the national strategy on integrated care,²⁴ demonstrating the growing demand for these care models.¹⁶

The value of technology in HF management has been increasingly recognised

The government has invested in information technology (IT) systems, known as hubs, to support the exchange of information between care settings.²⁵ The hubs have been implemented across most of Belgium as part of an ongoing national initiative to increase the implementation of technology in healthcare.^{25,26} National experts report that these hubs enable members of the HF care team to share discharge information, consultation reports and laboratory test results between care settings, but uploading echocardiography footage is not yet possible and sharing medication plans can be difficult.^{6,16}

In response to the COVID-19 outbreak, the Belgian government expanded its reimbursement policies to include telemedicine.²⁷ This temporary measure introduced funding for virtual and telephone-based consultations, which may support the implementation of telemedicine for HF in the future.⁵ According to national experts, it may also incentivise multidisciplinary collaboration and telephone contact between members of the HF care team.¹⁶

Development of the HF healthcare workforce

HF specialisation is not formally accredited in Belgium, but healthcare professionals can access training in HF

HF specialism for cardiologists and nurses has yet to be formally recognised. However, national professional societies lead training on HF for healthcare professionals (see *Case study 1*). National experts report that standardising HF training and education may be a difficult prospect, as educational requirements and curricula are typically determined at the regional level.⁶

There is no formal accreditation of the HF specialist nurse role nor standardised job criteria for HF nurses. Currently, 67 nurses hold this title, which they obtained by aiding in the development of an HF programme in a hospital or working in such a programme.⁶ HF nurses typically have an undergraduate nursing degree and clinical experience in cardiology, with some nurses educated to a master's level. Their responsibilities differ between hospitals, but typically include patient empowerment and therapeutic education, routine consultations and follow-up care.²⁸ HF nurses in centres of excellence may also be involved in more complex care processes, such as those concerning cardiac devices and heart transplantation.⁶ National experts report that efforts to expand the HF nursing workforce are hindered by the lack of reimbursement for this role, which means that HF nurses must be funded by the physician or hospital that employs them.^{5,6}

CASE STUDY 1.

University training programmes on HF

University College Leuven-Limburg offers a postgraduate course in HF in collaboration with the Belgian Working Group of Heart Failure and Cardiac Function (BWGHF), Belgian Heart Failure Nurses and the Belgian Working Group on Cardiovascular Nursing.²⁹ The course is taught in Dutch and aims to increase awareness and understanding of HF among the general healthcare workforce.⁶ It covers acute, chronic and end-stage HF and is available in Genk, Leuven and Ghent.^{30,31} The course includes eight days of clinical training and approximately 150 hours of lessons, spread over 20 days throughout the academic year.

A similar course is available in French, developed by the BWGHF in collaboration with the University of Liège, Université catholique de Louvain and Université libre de Bruxelles.³² The course focuses on therapeutic education for HF and is primarily aimed at nurses; applicants must have a higher education diploma in nursing and at least two years of clinical experience. The modules start with an introduction to HF and its management, and progress to therapeutic education, adapting care based on patient needs and practical training through simulation.³² The course combines 100 hours of lessons with a clinical observation day.

Guidance and local care pathways for delivery of quality care

HF guidelines are available for both specialists and GPs, but these differ in some key aspects

The Belgian Society of Cardiology has formally endorsed the 2016 European Society of Cardiology (ESC) HF guidelines,³³ and these are considered the national standard for cardiologists and HF nurses.⁵ National experts have also published summaries of the European guidelines to support their dissemination and increase awareness of recommendations.³⁴

GPs largely follow guidelines developed by their regional professional society, based on the national context and international and European guidance.^{35,36} These guidelines place less emphasis on NP testing than the ESC recommendations, due to the lack of reimbursement for this test in Belgium. This may disrupt the diagnostic pathway, given the importance of NP testing in guiding referrals for specialist-led echocardiography.¹⁷

Belgium has a national hospital accreditation programme but its impact on HF care and outcomes is limited

In 2004, the Federal Public Service for Health, Food Chain Safety and Environment introduced a national accreditation initiative for hospital care programmes.³⁷ National experts report that hospitals were required to submit information on HF care in 2016, including staffing levels, available equipment and services, and care pathways for the management of HF.⁵ However, the programme has not progressed beyond this stage and its impact on HF care to date appears to be limited.

Public audits of performance and high-level assessment initiatives

There is no national audit of HF care, but professional societies are developing high-level assessment initiatives

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 and of the HF challenge more broadly. To address this issue, the Belgian Working Group of Heart Failure and Cardiac Function (BWGHF) is developing a pragmatic assessment initiative for HF centres in Belgium, anticipated to launch in 2021.⁵ Over a two-week period every year, HF centres will be asked to record performance data in a spreadsheet template developed by the BWGHF. This initiative is expected to provide a snapshot of the national HF burden and explore potential gaps in care.⁵



Heart failure practice in Belgium

Diagnosis

Diagnosis is often delayed due to limited awareness of HF and inconsistent access to key diagnostic tests

People with symptoms of HF can see a cardiologist directly, through GP referral or following a visit to an emergency care department.⁷ However, historical data suggest that people typically do not consult a healthcare professional until they are in the later stages of HF,¹² potentially due to limited awareness of the syndrome.

NP testing is rarely used in community and hospital settings, as the test is not reimbursed.^{6,9} In a recent general practice study, only one in five people living with HF had a record of an NP test.¹⁰ Some GPs have reported difficulties in interpreting the cut-off values of NP tests,⁸ and national experts highlight the importance of education and training in NP testing for healthcare professionals in different care settings.¹⁸

Echocardiography is used consistently for diagnosis of acute HF in emergency care and of chronic HF in hospital outpatient services.⁶ However, people presenting with symptoms of HF in primary care are not always referred to a hospital specialist for echocardiography, particularly if the GP does not see the value of taking further diagnostic steps.⁸ This may be the case for people living in long-term care facilities, people with palliative care needs, people who are older and/or frail, or people deemed to have other pressing health issues. In addition, GPs have reported frustration about the absence of information essential to HF management in reports received from cardiologists⁸ – for example, in a recent trial, only about half of cardiology reports stated the value of a person's ejection fraction.¹⁰

Hospital care and discharge

Variation in the management of acute HF is a concern for guideline-based care

While some hospitals have HF care programmes which are led by cardiologists and HF nurses, this is not standard practice across Belgium.^{5,6} In a 2018 survey, only 46% of hospitals reported that they employed an HF nurse and 49% employed a cardiologist with experience in HF.⁷ National experts report that in the absence of a national programme, HF centres are typically set up by healthcare professionals with an interest in the syndrome.⁵ This type of care is currently offered in 37 hospitals.⁵ In other hospitals, people may be seen by professionals with limited experience in HF, which can have a negative impact on care and outcomes. To address this issue, the BWGHF is planning to compile and publish a list of HF centres on its website to support referral from hospitals that do not have HF services.⁵

Provision of discharge planning is inconsistent

Centres of excellence have discharge programmes managed by cardiologists, HF nurses and GPs, but this is not standard practice across the country.¹⁶ In hospitals that employ a cardiologist with experience in HF, people are more likely to receive educational materials and emergency contact numbers upon discharge.⁷ National experts report that people discharged from centres of excellence typically see their hospital care team or GP within two weeks of discharge.⁵

Elsewhere, practices may be very different. According to a study of post-discharge care in Flanders, more than one in five GPs feels that they are not sufficiently involved in discharge planning for people living with HF.¹³ To address this issue, national experts are advocating for discharge letters to include the HF diagnosis and specific instructions for GPs to monitor and manage HF medication.^{5,16} A discharge letter template has been developed to support these efforts.

Key components of quality care in community settings

Cardiac rehabilitation is not consistently provided for people with HF

Cardiac rehabilitation for HF is typically delivered in hospital settings, but implementation of these programmes is low. In a 2018 survey, only 56% of cardiologists reported that they always refer people living with HF with reduced ejection fraction (HFrEF) to a cardiac rehabilitation programme following hospitalisation; this proportion was considerably higher among cardiologists with an interest in HF (75%).⁷ Potential barriers to cardiac rehabilitation include low referral rates and the fact that these programmes are only reimbursed for one type of HF, HFrEF.^{7,38}

In April and May 2020, approximately half of the cardiac rehabilitation centres in Belgium reported that they implemented remote solutions to manage their services in the face of COVID-19, including online videos, livestreamed exercise sessions and instructions sent via email.³⁹ Therefore, people living with HF enrolled in these centres were able to continue their cardiac rehabilitation.

Patient empowerment and therapeutic education are not yet standard practice, particularly in the absence of an HF nurse

National experts report that the provision of therapeutic education and self-care support is limited in settings without an HF nurse, including community settings and some hospitals.⁶ They emphasise that HF nurses are essential for therapeutic education because other healthcare professionals may lack the time to dedicate to patient empowerment.^{6,16} Reimbursement for activities that focus on patient empowerment is lacking in all care settings, hindering the inclusion of this essential care component in standard practice.^{6,16} While people living with HF can consult their community pharmacist about their medication as part of a government scheme for chronic diseases,⁴⁰ this alone is unlikely to meet their needs for education and support.

Provision of palliative care for HF is hindered by a lack of clarity on when to initiate it and poor communication with patients

The public health system covers advance care planning and palliative care for most health conditions, but there are several barriers to the implementation of these provisions in HF care. Palliative care specialists are typically not involved in HF care in Belgium,⁴¹ and other healthcare professionals may find it difficult to identify when palliative care should be initiated.⁵ National experts report that there is a need to increase the quality and timing of discussions on prognosis, as many people with HF and their families/carers are not involved in decision-making in a timely manner.⁵ Cardiologists have reported delaying this discussion to avoid overwhelming people who have just been diagnosed or hospitalised with HF, as the term 'palliative care' still carries a negative connotation for most.⁴¹

Tools and methods to support multidisciplinary and integrated ongoing HF care

Centres of excellence offer various tools and models to encourage multidisciplinary HF care, which are largely unavailable in other settings

The implementation of tools and working methods that can promote multidisciplinary and integrated HF care has been inconsistent. While some regional programmes have implemented multidisciplinary protocols and pathways for the management of HF,^{16,21} a national approach has yet to be introduced.

Successful models of integrated care exist in selected regions (see *Case study 2*). Wider roll-out of these models could offer significant benefits. For example, in a recent trial, a remote monitoring system for people living with HFrEF reduced the length of hospital readmissions.⁴² People were asked to record their weight, blood pressure and heart rate on a daily basis. Based on these data, the system automatically alerted GPs and cardiologists to any signs and symptoms of HF deterioration.⁴² Following contact with their GP and/or cardiologist, people also received follow-up care from an HF nurse.

CASE STUDY 2.

Improving heart failure care in general practice

The OSCAR-HF study in Flanders aimed to optimise the quality of HF care in general practice by improving diagnosis, multidisciplinary collaboration and patient empowerment.⁴³ It included:

- education for GPs on HF diagnosis, including an online course and face-to-face meeting
- an audit of electronic health records to identify possible cases of HF, with GPs asked to judge whether HF was the likely diagnosis
- feedback to GPs on their performance in HF care
- funding for NP testing
- support from an HF nurse in the community.^{10 43}

The evaluation of this approach is ongoing, but national experts report that access to NP testing was well received by GPs.^{6 10} In addition, support from the HF nurse was valued by people living with HF, who were visited at home or invited for a consultation, and GPs, who could consult the HF nurse on diagnosis and medication management. National experts suggest that the nurse role could be fulfilled by primary care nurses in the future, with additional training in HF and support from GPs and/or hospital HF nurses.^{6 16}

The way forward

HF poses a challenge to the sustainability of healthcare systems in countries across Europe, including Belgium. 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.

Urgent action is needed to address the growing burden of HF in Belgium. National stakeholders have previously called for policy prioritisation of HF in terms of public awareness, therapeutic education, reimbursement of diagnostic tests and multidisciplinary care,¹⁹ much of which remains as relevant now as in previous years. The recent disruption of healthcare services owing to the COVID-19 pandemic, which may accentuate the rising burden of HF, makes the improvement of the national response to HF even more pressing.

SEVERAL ACTIONS ARE ESSENTIAL TO ADDRESS THIS CHALLENGE.

Increase awareness of HF among the public, healthcare professionals and policymakers

Societal understanding of HF and its symptoms must be improved to overcome inertia at all levels of care and decision-making. Public awareness campaigns may encourage people to see a healthcare professional as soon as they start experiencing signs and symptoms of HF. Increasing awareness of HF among decision-makers is a crucial first step towards a national strategy to address the syndrome. Professional societies can also support healthcare workers to expand their knowledge of the correct identification of the signs and symptoms of HF, and the accurate use and interpretation of diagnostic tests, via training opportunities.

Reimburse NP testing and reaffirm the importance of specialist-led echocardiography

It is crucial to reimburse NP testing in primary care to support earlier detection of HF. This test can help prioritise referrals for specialist-led echocardiography, thereby facilitating timely diagnosis and access to treatment. Policymakers should be reminded of the cost-effectiveness of NP testing and recent positive experiences of pilot programmes in support of this approach,¹⁰ especially in light of the COVID-19 pandemic and its impact on healthcare resources. All people with suspected HF should see a specialist for an echocardiogram – education and guidelines for GPs should emphasise the importance of

this procedure for optimal HF care and treatment, and national professional societies should communicate this message to their members. Policymakers can support these efforts by incentivising the use of echocardiography in the diagnosis of HF.

Fund therapeutic education and the HF nurse role

The government must expand its reimbursement policies to include therapeutic education and HF nursing to support people living with HF and the development of an HF workforce. The benefits of HF nurses have been widely demonstrated, and it is now essential that this role be formally recognised and funded in Belgium. National experts can guide efforts to standardise HF nursing in terms of educational requirements and clinical responsibilities. These criteria can then be incorporated into training programmes, which should be formally recognised by the regional and national healthcare systems and professional societies.

Expand IT systems to support multidisciplinary collaboration across care settings

While public investment in IT solutions for the healthcare system is growing, further work is needed to support multidisciplinary and integrated models of HF care. The hubs currently used in HF care should be expanded to include an option to upload echocardiography footage, and to support communication between the person living with HF and healthcare professionals in community and hospital settings. The standardisation and exchange of information across care settings is essential to prevent inefficiency in the healthcare system.

Roll out best-practice programmes shown to reduce hospitalisation and improve patient outcomes

There is an urgent need to reduce the number of hospital admissions for HF and improve support in the community for people living with the syndrome. Regional and national decision-makers should examine the case for roll-out of successful initiatives, such as the multidisciplinary models implemented in existing HF centres. They should also consider amplifying approaches that are currently being explored, such as the care pathways implemented under the national strategy on integrated care for chronic diseases^{21 22} and the OSCAR-HF intervention.¹⁰

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 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 Belgium.

References

1. Belgische Cardiologische Liga. Ziekten: Hartfalen. Available from: <https://liguecardiologica.be/hartfalen/> [Accessed 03/09/20]
2. De Sutter J, Pardaens S, Audenaert T, et al. 2015. Clinical characteristics and short-term outcome of patients admitted with heart failure in Belgium: results from the BIO-HF registry. *Acta Cardiol* 70(4): 375-85
3. Lejeune S, Roy C, Slimani A, et al. 2020. Heart failure with preserved ejection fraction in Belgium: characteristics and outcome of a real-life cohort. *Acta Cardiol*: 10.1080/00015385.2020.1770460: 1-10
4. Integreo. 2015. Gemeenschappelijk plan voor chronisch zieken: Geïntegreerde zorg voor een betere gezondheid. Available from: https://www.integreo.be/sites/default/files/public/content/plan_nl.pdf [Accessed 27/09/20]
5. Pouleur A-C. 2020. Interview with Marissa Mes at The Health Policy Partnership (Secretariat for Heart Failure Policy Network) [videoconference]. 11/09/20
6. Vercammen J. 2020. Interview with Marissa Mes at The Health Policy Partnership (Secretariat for Heart Failure Policy Network) [videoconference]. 09/09/20
7. Ghys LF, Martens P, Heggermont WA, et al. 2020. The in- and out-of-hospital management of HF patients: results from a nationwide Belgian survey. *Acta Cardiol*: 10.1080/00015385.2020.1765105: 1-10
8. Smeets M, De Witte P, Peters S, et al. 2019. Think-aloud study about the diagnosis of chronic heart failure in Belgian general practice. *BMJ Open* 9(3): e025922
9. Smeets M, Vaes B, Mamouris P, et al. 2019. Burden of heart failure in Flemish general practices: a registry-based study in the Intego database. *BMJ Open* 9(1): e022972
10. Smeets M, Vaes B, Aertgeerts B, et al. 2020. Impact of an extended audit on identifying heart failure patients in general practice: baseline results of the OSCAR-HF pilot study. *ESC Heart Fail*: 10.1002/ehf2.12990:
11. van der Heyden J, Charafeddine R. 2018. *Chronische ziekten en aandoeningen: Gezondheidsenquête 2018*. Brussels: Sciensano
12. Devroey D, Van Casteren V. 2010. The incidence and first-year mortality of heart failure in Belgium: a 2-year nationwide prospective registration. *Int J Clin Pract* 64(3): 330-5
13. Braet A, Weltens C, Bruyneel L, et al. 2016. The quality of transitions from hospital to home: A hospital-based cohort study of patient groups with high and low readmission rates. *Int J Care Coord* 19(1-2): 29-41
14. Cook C, Cole G, Asaria P, et al. 2014. The annual global economic burden of heart failure. *Int J Cardiol* 171(3): 368-76
15. van Beckhoven D, Duysburgh E, Montourcy M, et al. 2020. *Thematisch rapport: belangrijkste punten van de surveillance van ziekenhuispatiënten met een COVID-19-infectie: Resultaten tot en met 14 juni 2020*. Brussels: Sciensano
16. Smeets M. 2020. Interview with Marissa Mes at The Health Policy Partnership (Secretariat for Heart Failure Policy Network) [videoconference]. 16/09/20
17. Ponikowski P, Voors AA, Anker SD, et al. 2016. 2016 ESC guidelines for the diagnosis and treatment of acute and chronic heart failure. *Eur J Heart Fail* 18(8): 891-975
18. Gruson D. 2020. Interview with Marissa Mes at The Health Policy Partnership (Secretariat for Heart Failure Policy Network) [videoconference]. 17/09/20
19. Belgian Working Group on Heart Failure, Belgian Society of Cardiology, Belgian Working Group on Cardiovascular Nursing, et al. Charte pour les patients insuffisants cardiaques. Available from: http://www.fr.docvadis.be/moncoeur/document/moncoeur/charte_de_l_insuffisance_cardiaque2/fr/metadata/files/0/file/1Charte-grand%20public%20FR.pdf [Accessed 23/07/20]
20. Integreo. Work in progress. Available from: <https://www.integreo.be/nl/geintegreerde-zorg/work-progress> [Accessed 04/09/20]
21. Derthoo D. 2018. *Extramuraal zorgpad hartfalen: Zuid- en Midden-West-Vlaanderen*. Kortrijk: AZ Groeninge Kortrijk
22. Hartfalen Leuven. Zorgprogramma Hartfalen Leuven. Available from: <https://www.hartfalenleuven.be/zorgprogramma-hartfalen> [Accessed 01/10/20]
23. Integreo. Zorgzaam Leuven (Regio Groot-Leuven). Available from: <https://www.integreo.be/nl/uw-omgeving/zorgzaam-leuven-regio-groot-leuven> [Accessed 01/10/20]
24. Debonnaire P, Neyrinck A, Depoorter L, et al. 2019. *Zorgtraject hartfalen: multidisciplinair extramuraal Noord-West Vlaanderen*. Available from: http://www.azzeno.be/downloads/zorgtraject%20hartfalen/HF%20ZORGTRAJECT%20%20COVERS%202019_FINAL.pdf [Accessed 04/09/20]
25. Robben F. 2016. eHealth: state of affairs and perspectives. Available from: <https://www.frankrobbe.be/wp-content/uploads/2011/05/20160603b.pptx> [Accessed 11/09/20]
26. eGezondheid. Roadmap 3.0. Available from: <https://www.ehealth.fgov.be/nl/egezondheid/roadmap-30> [Accessed 11/09/20]
27. Institut National d'Assurance Maladie-Invalidité. 2020. Tarifs ; médecins - consultations et visites ; 14-03-2020. Available from: https://www.inami.fgov.be/SiteCollectionDocuments/tarif_medecins_partie01_20200314.pdf [Accessed 14/09/20]

28. Belgian Working Group on Cardiovascular Nursing. Belgian Heart Failure Nurses. Available from: <https://bwgcvn.be/about/collaborations-and-affiliations/belgian-heart-failure-nurses/#:~:text=The%20working%20group%20consists%20of,recent%20European%20heart%20failure%20guidelines.&text=Facilitate%20networking%20between%20heart%20failure%20nurses.> [Accessed 04/09/20]
29. UC Leuven-Limburg. Postgraduaat hartfalen. Available from: <https://www.ucll.be/studeren/verder-studeren/postgraduaat-hartfalen/postgraduaat-hartfalen-0> [Accessed 11/09/20]
30. UC Leuven-Limburg. Programa. Available from: <https://www.ucll.be/studeren/verder-studeren/postgraduaat-hartfalen/postgraduaat-hartfalen-0> [Accessed 14/09/20]
31. Leuven-Limburg U. Praktische informatie. Available from: <https://www.ucll.be/studeren/verder-studeren/postgraduaat-hartfalen/postgraduaat-hartfalen-1> [Accessed 14/09/20]
32. Université de Liège. Éducation thérapeutique du patient insuffisant cardiaque. Available from: <https://www.programmes.uliege.be/cocoon/20202021/formations/descr/MYETIC90.html> [Accessed 11/09/20]
33. European Society of Cardiology. Belgian Society of Cardiology. Available from: <https://www.escardio.org/The-ESC/Member-National-Cardiac-Societies/Belgian-Society-of-Cardiology> [Accessed 22/05/20]
34. Claeys MJ, Mullens W, Vandekerckhove Y, et al. 2017. Summary of 2016 ESC guidelines on heart failure, atrial fibrillation, dyslipidaemia and cardiovascular prevention. *Acta Cardiol* 72(6): 610-15
35. Van Royen P, Boulanger S, Chevalier P, et al. 2011. Aanbeveling voor goede medische praktijkvoering: Chronisch hartfalen. *Huisarts Nu* 40: S158-86
36. Van Royen P, Chevalier P, Dekeulenaar G, et al. 2011. *Recommandation de Bonne Pratique: Insuffisance cardiaque*. Brussels: Société Scientifique de Médecine Générale (SSMG)
37. Justel. 2004. Koninklijk besluit houdende vaststelling van de normen waaraan de zorgprogramma's "cardiale pathologie" moeten voldoen om erkend te worden. Available from: http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=nl&la=N&table_name=wet&cn=2004071551 [Accessed 04/09/20]
38. Pardaens S, Willems AM, Vande Kerckhove B, et al. 2015. Participation in cardiac rehabilitation after hospitalisation for heart failure: a report from the BIO-HF registry. *Acta Cardiol* 70(2): 141-7
39. Scherrenberg M, Frederix I, De Sutter J, et al. 2020. Use of cardiac telerehabilitation during COVID-19 pandemic in Belgium. *Acta Cardiol*: 10.1080/00015385.2020.1786625: 1-4
40. Rijksinstituut voor ziekte- en invaliditeitsverzekering. Chronisch zieken: Gepersonaliseerde follow-up door een huisapotheker. Available from: https://www.inami.fgov.be/nl/themas/kost-terugbetaling/ziekten/chronische-ziekten/Paginas/gepersonaliseerde-huisapotheker.aspx#In_welke_gevallen_betaalt_de_ziekteverzekering_de_dienstverlening__huisapotheker__terug? [Accessed 17/09/20]
41. Siouta N, van Beek K, Preston N, et al. 2016. Towards integration of palliative care in patients with chronic heart failure and chronic obstructive pulmonary disease: a systematic literature review of European guidelines and pathways. *BMC Palliat Care* 15: 18-18
42. Frederix I, Vanderlinden L, Verboven A-S, et al. 2019. Long-term impact of a six-month telemedical care programme on mortality, heart failure readmissions and healthcare costs in patients with chronic heart failure. *J Telemed Telecare* 25(5): 286-93
43. Smeets M, Aertgeerts B, Mullens W, et al. 2019. Optimising standards of care of heart failure in general practice the OSCAR-HF pilot study protocol. *Acta Cardiol* 74(5): 371-79



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