

The European heart failure management resources, treatment reimbursement and activities of professional and patient organizations

Petar M. Seferović^{1,2,*}, **Marija Polovina^{1,3}**, **Gianluigi Savarese^{4,5}**, **Ivan Milinković^{1,3}**, **Lars Lund^{4,5}**, **Ovidiu Chioncel⁶**, **Magdy Abdelhamid⁷**, **Yuri Lopatin⁸**, **Stefan Störk^{9,10}**, **Manuel Anguita Sanchez¹¹**, **Massimo Piepoli^{12,13}**, **Aldo P. Maggioni¹⁴**, **Ewa Jankowska¹⁵**, **Antoni Bayes-Genis¹⁶**, **Alain Cohen Solal¹⁷**, **Arsen Ristić^{1,3}**, **Mariya Tokmakova¹⁸**, **Mehmet Birhan Yilmaz¹⁹**, **Hadi Skouri²⁰**, **Davor Miličić²¹**, **Offer Amir²²**, **Amina Rakisheva²³**, **Gerasimos Filippatos²⁴**, **Giuseppe Rosano²⁵**, **Marco Metra²⁶**, and **Andrew J. Coats²⁷**

¹Faculty of Medicine, University of Belgrade, Belgrade, Serbia; ²Serbian Academy of Sciences and Arts, Belgrade, Serbia; ³Department of Cardiology, University Clinical Centre of Serbia, Belgrade, Serbia; ⁴Division of Cardiology, Department of Medicine and Karolinska Institutet, Stockholm, Sweden; ⁵Heart and Vascular Theme, Karolinska University Hospital, Stockholm, Sweden; ⁶Emergency Institute for Cardiovascular Diseases 'Prof. Dr. C.C. Iliescu', University for Medicine and Pharmacy 'Carol Davila', Bucharest, Romania; ⁷Department of Cardiovascular Medicine, Faculty of Medicine, Kasr Al Ainy, Cairo University, Cairo, Egypt; ⁸Volgograd Medical University, Cardiology Centre, Volgograd, Russian Federation; ⁹Department of Clinical Research & Epidemiology, Comprehensive Heart Failure Center, Würzburg, Germany; ¹⁰Department Internal Medicine I, University Hospital Würzburg, Würzburg, Germany; ¹¹Servicio de Cardiología, Hospital Universitario Reina Sofia, Córdoba, Spain; ¹²Centro Cardiologico Monzino, IRCCS, Milan, Italy; ¹³Clinical Cardiology, Policlinico San Donato IRCCS, University of Milan, Milan, Italy; ¹⁴Research Centre of the Italian Association of Hospital Cardiologists, Florence, Italy; ¹⁵Centre for Heart Diseases, Faculty of Health Sciences, Wrocław Medical University, Wrocław, Poland; ¹⁶Cardiology Department and Heart Failure Unit, Hospital Universitari Germans Trias i Pujol, Badalona, Spain; ¹⁷CUMR-S 942 MASCOT, Paris University, Cardiology Department, Hôpital Lariboisière, Assistance Publique Hôpitaux de Paris, Paris, France; ¹⁸Medical University of Plovdiv, Plovdiv, Bulgaria; ¹⁹Department of Cardiology, Faculty of Medicine, Dokuz Eylül University, Izmir, Türkiye; ²⁰Division of Cardiology, Sheikh Shakhboub Medical City, Abu Dhabi, United Arab Emirates; ²¹University of Zagreb School of Medicine, Department of Cardiovascular Diseases, University Hospital Centre Zagreb, Zagreb, Croatia; ²²Department of Cardiology, Hadassah Medical Center and Faculty of Medicine, Hebrew University of Jerusalem, Jerusalem, Israel; ²³City Cardiology Center, Almaty, Kazakhstan; ²⁴Department of Cardiology, National and Kapodistrian University of Athens, Attikon University Hospital, Athens, Greece; ²⁵Centre for Clinical and Basic Research, Department of Medical Sciences, IRCCS San Raffaele Pisana, Rome, Italy; ²⁶Cardiology, Department of Medical and Surgical Specialties, Radiological Sciences, and Public Health, University of Brescia, Cardiothoracic Department, Civil Hospitals, Brescia, Italy; and ²⁷Heart Research Institute, Newtown, Australia

Received 18 March 2025; revised 13 April 2025; accepted 22 April 2025; online publish-ahead-of-print 17 June 2025

Aims

The European Heart Failure (HF) Survey was developed by the Heart Failure Association (HFA) of the European Society of Cardiology (ESC) to map HF management resources, reimbursement of drugs/devices for HF treatment, and structure and activities of HF professional and patient organizations.

Methods and results

The survey encompassed 43 ESC member countries. The median number of hospitals with dedicated HF centres was 2.6 (interquartile range [IQR] 0.9–4.7) per million people. Natriuretic peptide assessment was available at a median of 6.1 (IQR 1.8–10.6) emergency departments and 8.2 (IQR 1.3–14.7) hospitals per million people, respectively, whilst cardiac magnetic resonance was available at a median of 2.0 (IQR 0.9–3.8) hospitals per million people. Short-term and long-term mechanical circulatory support and heart transplantation were available at a median of 1.1 (IQR 0.5–2.4), 0.4 (IQR 0.0–0.5) and 0.3 (0.2–0.5) hospitals per million people, respectively. Whilst essential HF medications were mostly available and reimbursed, gaps were observed in availability and funding of newer and advanced therapies.

*Corresponding author. Faculty of Medicine, University of Belgrade, Serbian Academy of Sciences and Arts, Knez Mihailova 35, 11000 Belgrade, Serbia.
Email: seferovic.petar@gmail.com

[Correction added on 24 July 2025, after first online publication: Mehmet Birhan Yilmaz's affiliation has been corrected in this version.]

Density of all diagnostic and therapeutic capabilities was greater in countries with more favourable socioeconomic status. National HF societies were reported in 98% of countries, whilst HF patient organizations in 45% of countries. anaemia.

Conclusions

The European HF Survey is the result of long-standing HFA/ESC efforts to monitor HF epidemiology, management resources, educational and awareness activities. It offers a valuable assessment of current management capabilities, highlighting challenges in providing contemporary standards of care. It also provides insights into future directions needed to address these gaps.

Keywords

Heart failure • Management • Diagnostic capabilities • Reimbursement • Education • Advocacy • Awareness

Introduction

Heart failure (HF) is a multifaceted syndrome that imposes a considerable strain on healthcare systems due to diagnostic and treatment complexities, frequent hospitalizations, considerable disability and high healthcare costs.^{1,2} In addition to maintaining a close surveillance of HF epidemiology, the Heart Failure Association (HFA) of the European Society of Cardiology (ESC) has recognized the significance of monitoring the availability of healthcare resources, drugs and devices necessary for the implementation of the ESC guideline recommendations, as well as the structure and activities of professional and patient organizations across the ESC member countries. Over the past decade, HFA/ESC in collaboration with the National Heart Failure Societies (NHFS) organized several surveys dedicated to this goal. The first survey, conducted in 33 countries in 2013, revealed existence of HF centres in most countries, but with modest diagnostic capacities (e.g. availability of natriuretic peptide [NP] testing), whilst the implementation of guideline-directed medical therapies (GDMT) and devices was not assessed.³ Although professional organizations and education for physicians were largely accommodated, only few countries reported having HF nurses and/or HF patient organizations or educational activities.³ The second survey – the HFA Atlas: Heart Failure Epidemiology and Management Statistics 2019 – included 42 countries, and provided data from 2018 or earlier years.⁴ The results suggested a trend of improvement in the availability of healthcare infrastructure, diagnostic capacities, and therapeutic possibilities for HF in most countries.⁴ Activities aimed at professional and patient education, HF awareness and advocacy have also improved. However, there were notable disparities in management resources, and availability and access to specialized care and medications, particularly among the low-to-middle countries. Gaps were also observed in availability of certified professional educational programmes and broader patient and public outreach to raise awareness about HF across Europe.

In keeping with the previous initiatives, the latest European HF Survey aimed to assess the following goals across ESC member countries: (i) to describe available resources for HF diagnostics and management; (ii) to assess the availability and access to GDMT and devices; and (iii) to provide an insight into the structure of HF professional and patient organizations, along with their educational, advocacy, and awareness efforts.

Methods

The European HF Survey was a multinational, observational survey conducted in 2021–2023 in the ESC member countries, that encompassed two major aspects: (i) provision of contemporary HF epidemiology statistics, and (ii) provision of HF management statistics. The study design, protocol, data collection principles and quality control have been published previously.⁵ Here we describe aspects relevant for the collection and analysis of data regarding HF management, GDMT reimbursement and professional and patient organizations. The methodology was built on the previous European HF Survey, with necessary improvements to better capture data on the availability and access to contemporary diagnostic and management capacities/facilities; the availability and reimbursement policies of GDMT and devices for the treatment of HF; and structure and activities of professional and patient organizations, with a focus on education for healthcare providers and patients, and efforts to improve awareness and advocacy policies. The list of variables with definitions and sources is provided in online supplementary *Table S1*.

Statistical analysis

Descriptive data were presented as medians, with interquartile range (IQR), and summarized using bar charts and colour-coded maps. Formal statistical comparisons were not conducted between the participating countries. All analyses were performed using the IBM SPSS Statistics 29.0 software.

Results

Geographical area and response rates

The European HF Survey was conducted in 43 ESC member countries, covering the geographical area of Europe, the Mediterranean, the Middle East and some of the former Soviet Union countries, with a total population of ~970 million people. Thirty-six countries that participated in the 2019 HFA Atlas Survey also contributed to the HFA Observe, and there were seven new participants (Armenia, Egypt, France, Malta, Montenegro, Syria, and Uzbekistan). The response rates in sections on HF management resources ranged between 51% and 98%, whilst most countries provided full dataset on drugs and devices reimbursement, and HF professional and patient organizations.

Management resources for heart failure

Heart failure centres, diagnostic and therapeutic capabilities

Data on the presence HF centres (i.e. institutions with a team of healthcare professionals dedicated full/part-time to the management of outpatients and inpatients with HF) were available for 34 (79%) countries. The median number of HF centres in 32 countries reporting their presence was 2.6 (IQR 0.9–4.7) per 1 000 000 people (Figure 1). Cyprus and Montenegro reported having no such institutions. Only Germany reported a requirement for national accreditation/certification of HF centres.

Availability of NP (B-type natriuretic peptide and/or N-terminal pro-B-type natriuretic peptide) was assessed in emergency departments, hospitals, primary care, and outpatient clinics. Data were available for 51–72% of countries. In countries reporting availability of emergency department NP testing, there was median of 6.1 (IQR 1.8–10.6) emergency departments per 1 000 000 (Figure 2A) with NP testing, whilst three countries (Egypt, Latvia, and North Macedonia) reported a lack of this service. Twenty-two countries provided data on in-hospital NP testing with a median number of 8.2 (IQR 1.3–14.7) hospitals per 1 000 000 people providing this service (Figure 2B). Additionally, Italy, the Netherlands, Norway, Portugal and Spain reported providing NP assessment in all hospitals. Only 14 countries provided data on access to NP testing in out-of-hospital settings, with a median of 5.5 (IQR 0.9–12.6) facilities per 1 000 000 people providing this service (Figure 3A). Likewise, only nine countries provided data on NP testing in primary care, with a median of 8.1 (0.5–13.6) facilities per 1 000 000 people

(Figure 3B). In a significant proportion of countries, NP assessment in community settings was either unavailable or conditional on sample referral to local hospitals, or out-of-pocket payment.

Diagnostic capacities were further assessed through the availability of cardiac magnetic resonance (CMR) imaging, cardiac computed tomography (CT)/coronary angiography (CTCA), cardiopulmonary exercise testing (CPET) and endomyocardial biopsy (EMB). Data were available for 70–81% of countries. Of the 32 countries providing data on the availability of CMR facilities, there was a median of 2.0 (IQR 0.9–3.8) centres per 1 000 000 people. Kyrgyzstan reported a lack of CMR facilities (Figure 4A). Of the 33 countries providing data on cardiac CT/CTCA, there was a median of 2.5 (IQR 1.1–4.0) centres per 1 000 000 people (Figure 4B). Data on access to CPET were available for 28 countries, with a median number of 1.2 (IQR 0.3–2.3) centres per 1 000 000 people (Figure 5A). Cyprus, Egypt, Kyrgyzstan and Syria reported a lack of these facilities. Of the 23 countries with available data on EMB, there was a median of 0.8 (IQR 0.5–1.6) centres with this diagnostic modality per 1 000 000 people (Figure 5B). Several countries (Armenia, Kyrgyzstan, Moldova, Montenegro, North Macedonia, Syria, and Uzbekistan) reported a lack of this service.

Therapeutic resources were assessed through delivery of care for acute/advanced HF and provision of post-discharge transition of care. Management capacities for acute/advanced HF included short-term mechanical circulatory support (MCS) (e.g. intra-aortic balloon pump, micro-axial flow pump and/or veno-arterial extracorporeal membrane oxygenation), ultrafiltration/renal replacement therapy, long-term MCS (e.g. ventricular assist

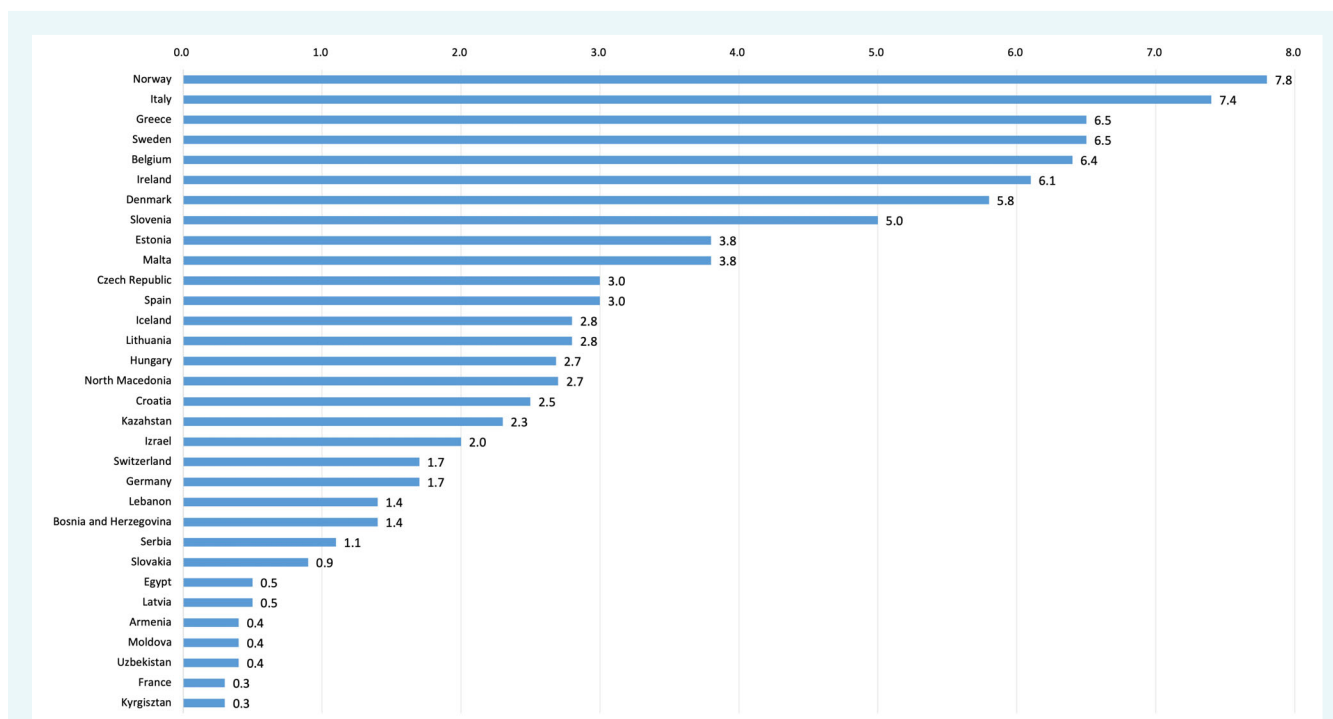


Figure 1 Number of dedicated heart failure centres per 1 000 000 people.

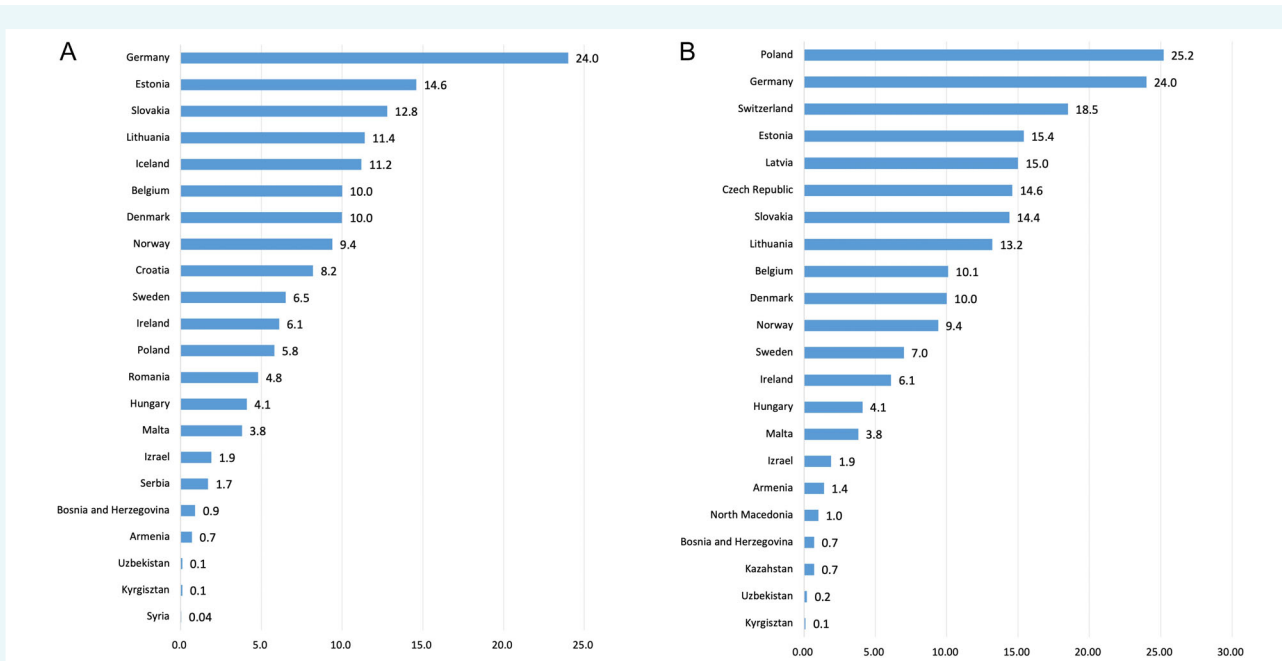


Figure 2 Number of centres offering natriuretic peptide testing in (A) emergency departments, (B) for inpatients, per 1 000 000 people.

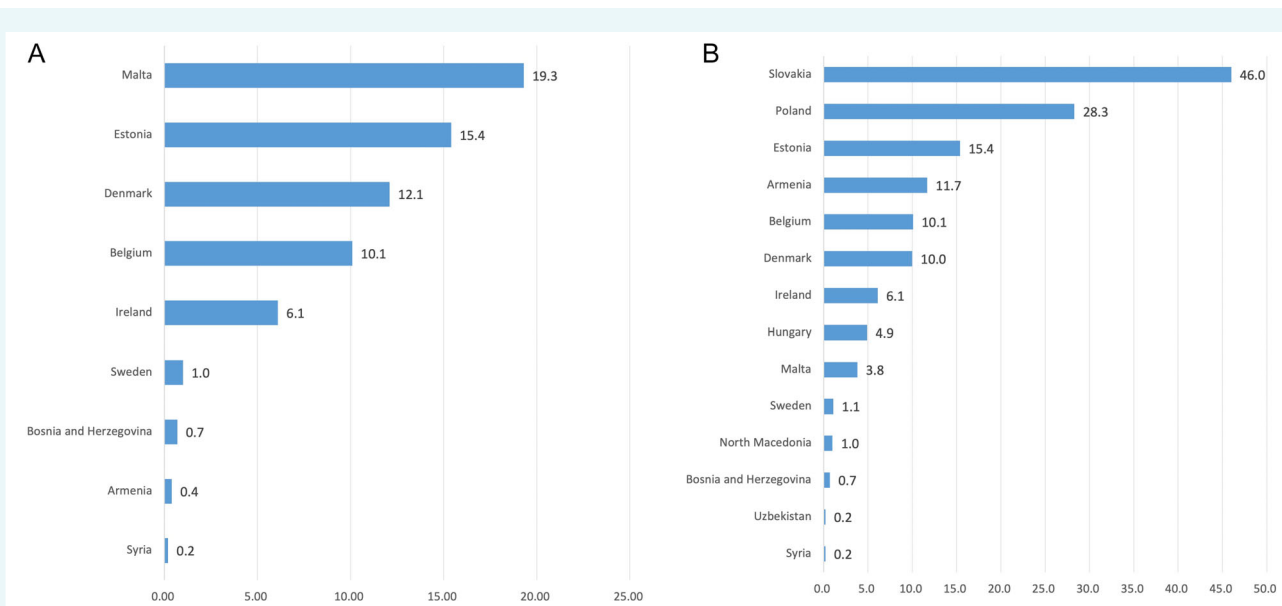


Figure 3 Number of centres offering natriuretic peptide testing in (A) primary care, (B) for outpatients, per 1 000 000 people.

devices), and heart transplantation. Data were available from 60% to 98% of countries. Twenty-eight countries provided data on access to short-term MCS, with a median of 1.1 (IQR 0.5–2.4) centres per 1 000 000 people providing this service (Figure 6). Short-Term MCS was unavailable in Kyrgyzstan, Montenegro and Uzbekistan. Twenty-six countries provided data on the availability ultrafiltration/renal replacement therapy with a median of 2.6 (IQR 1.0–6.5) hospitals per 1 000 000 people having this service (Figure 7). Data on the access to long-term

MCS were available for 26 countries, with a median of 0.4 (IQR 0.0–0.5) hospitals per 1 000 000 population offering this service (Figure 8). Data on the availability of heart transplantation were available for 31 countries with a median of 0.3 (IQR 0.2–0.5) hospitals per 1 000 000 people offering heart transplantation programmes (Figure 9). Armenia, Bosnia and Herzegovina, Cyprus, Egypt, Iceland, Lebanon, Malta, Moldova, Montenegro, Syria and Uzbekistan reported a lack of national heart transplantation centres.

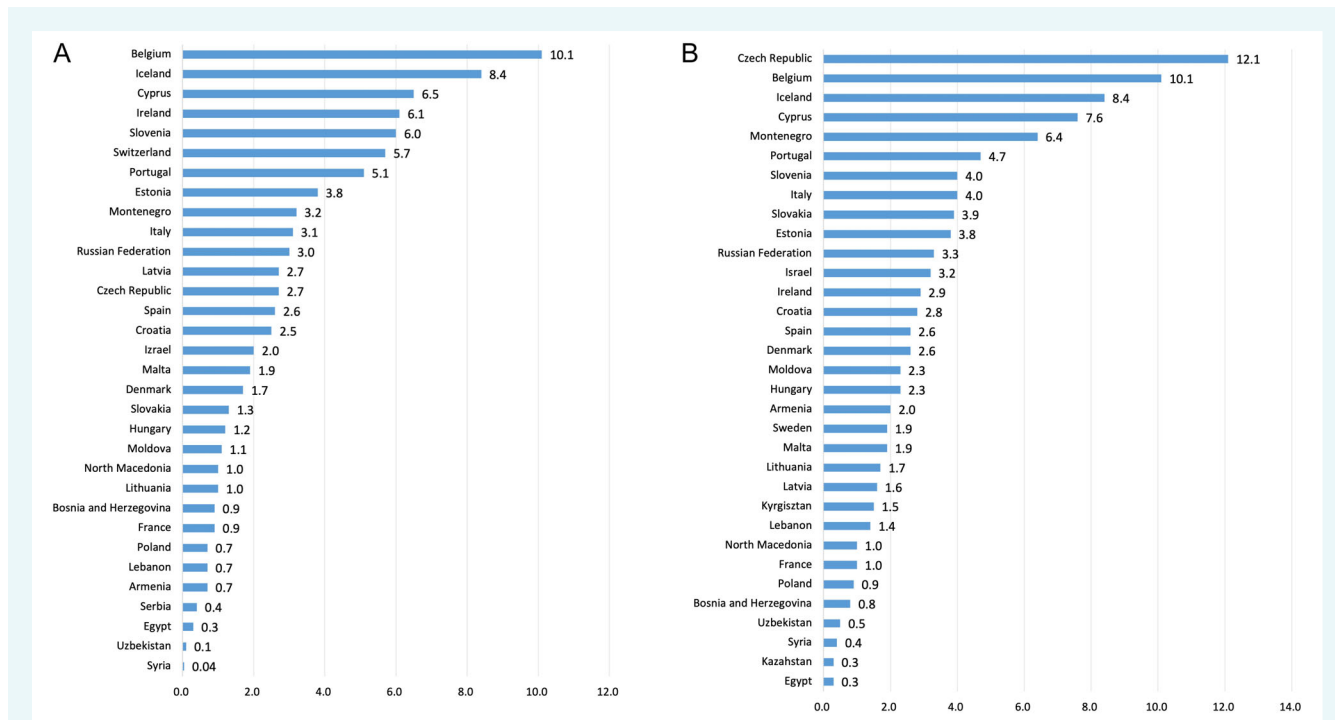


Figure 4 Number of centres offering (A) cardiac magnetic resonance imaging, (B) cardiac computed tomography/computed tomography coronary angiography, per 1 000 000 people.

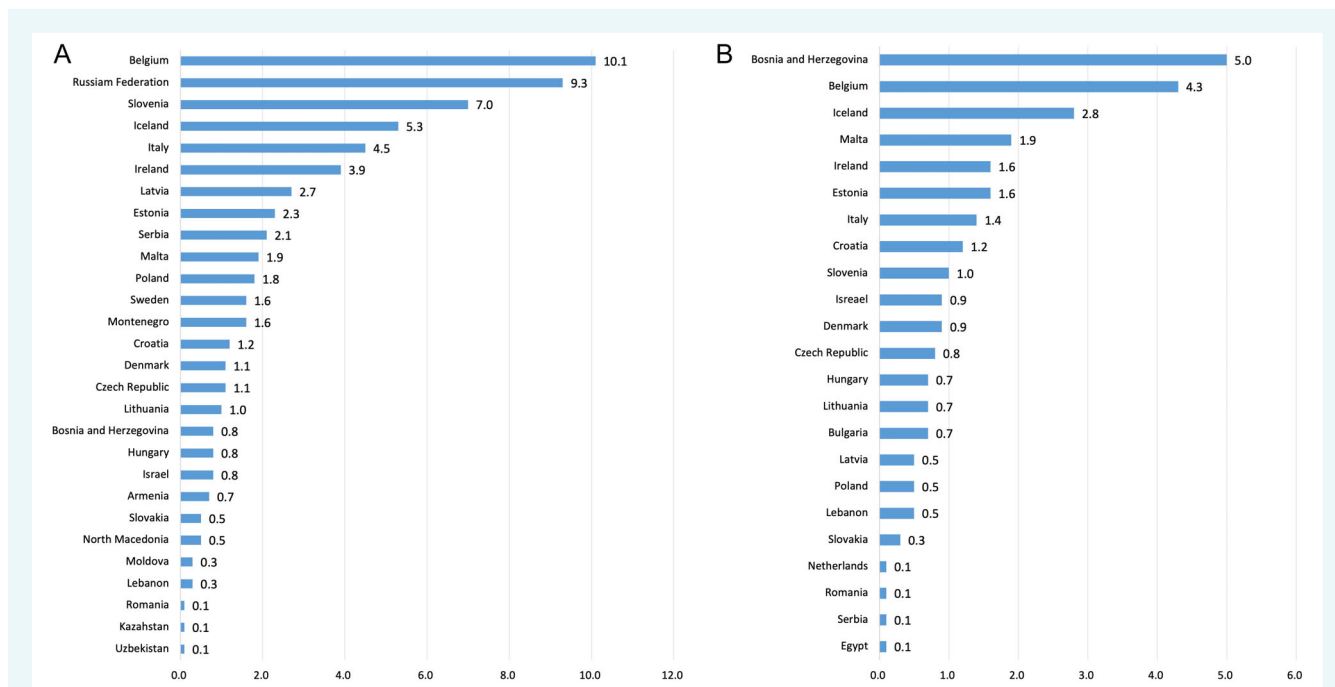


Figure 5 Number of centres offering (A) cardiopulmonary stress exercise testing, (B) endomyocardial biopsy, per 1 000 000 people.

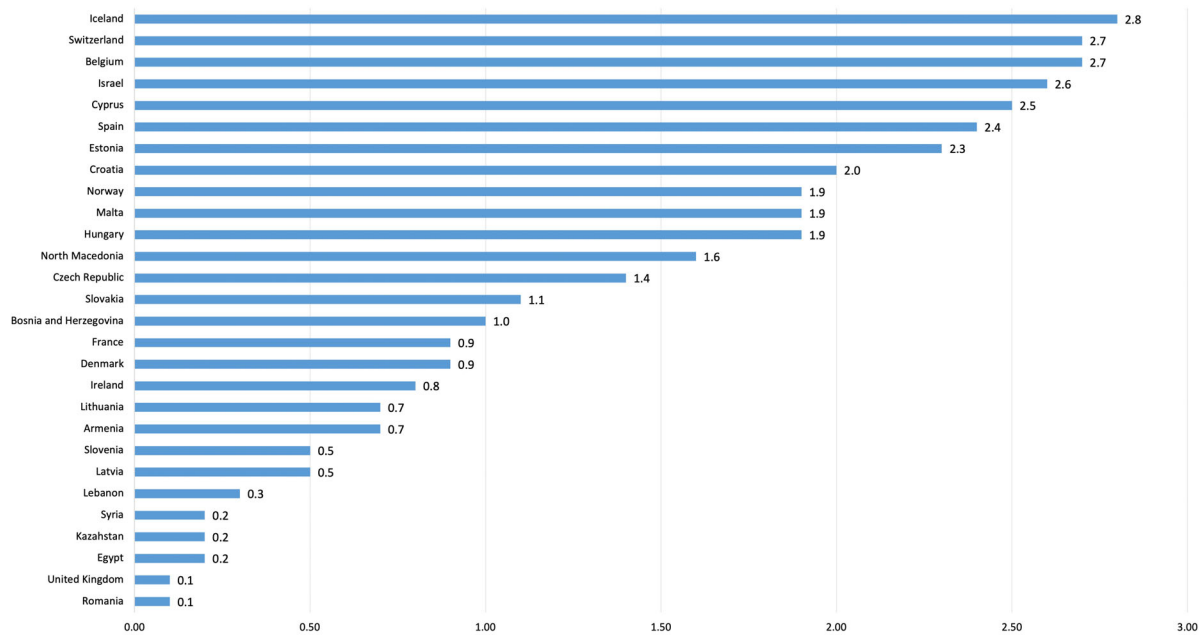


Figure 6 Number of centres providing short-term mechanical circulatory support, per 1 000 000 people.

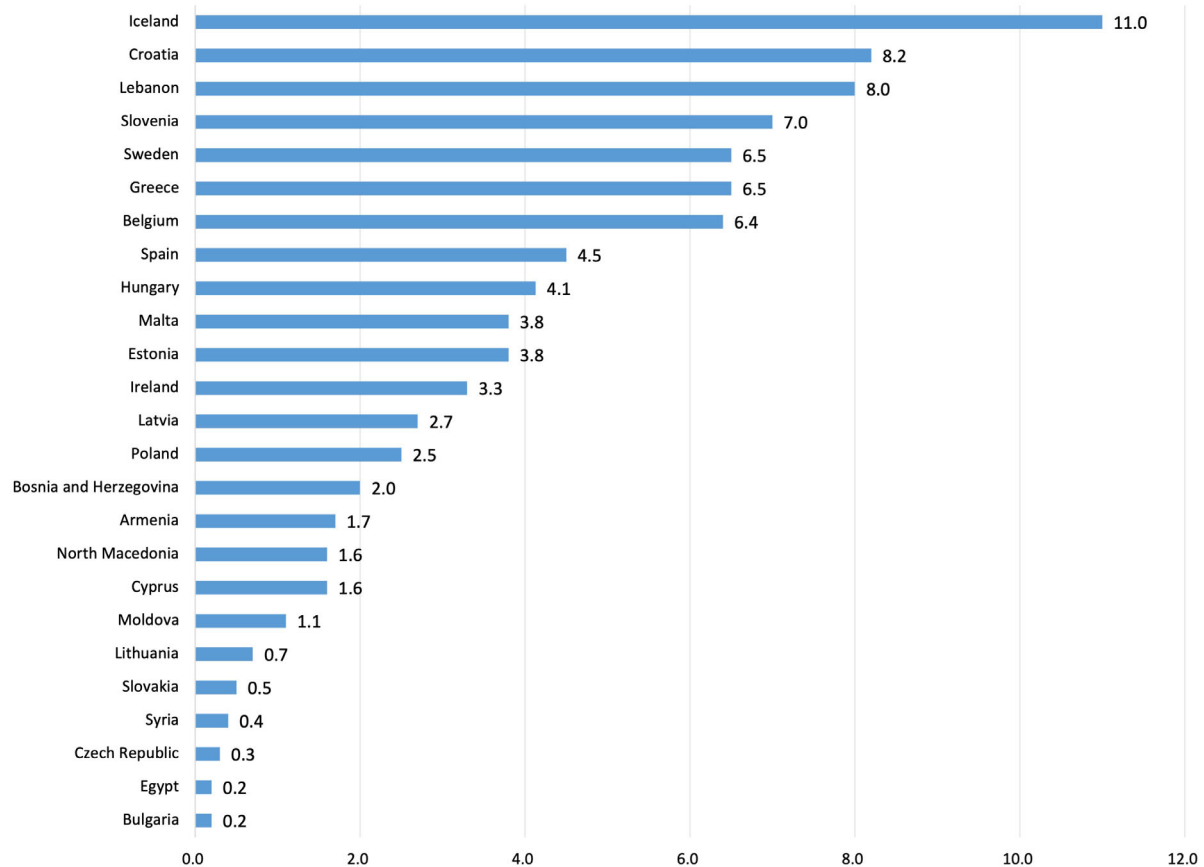
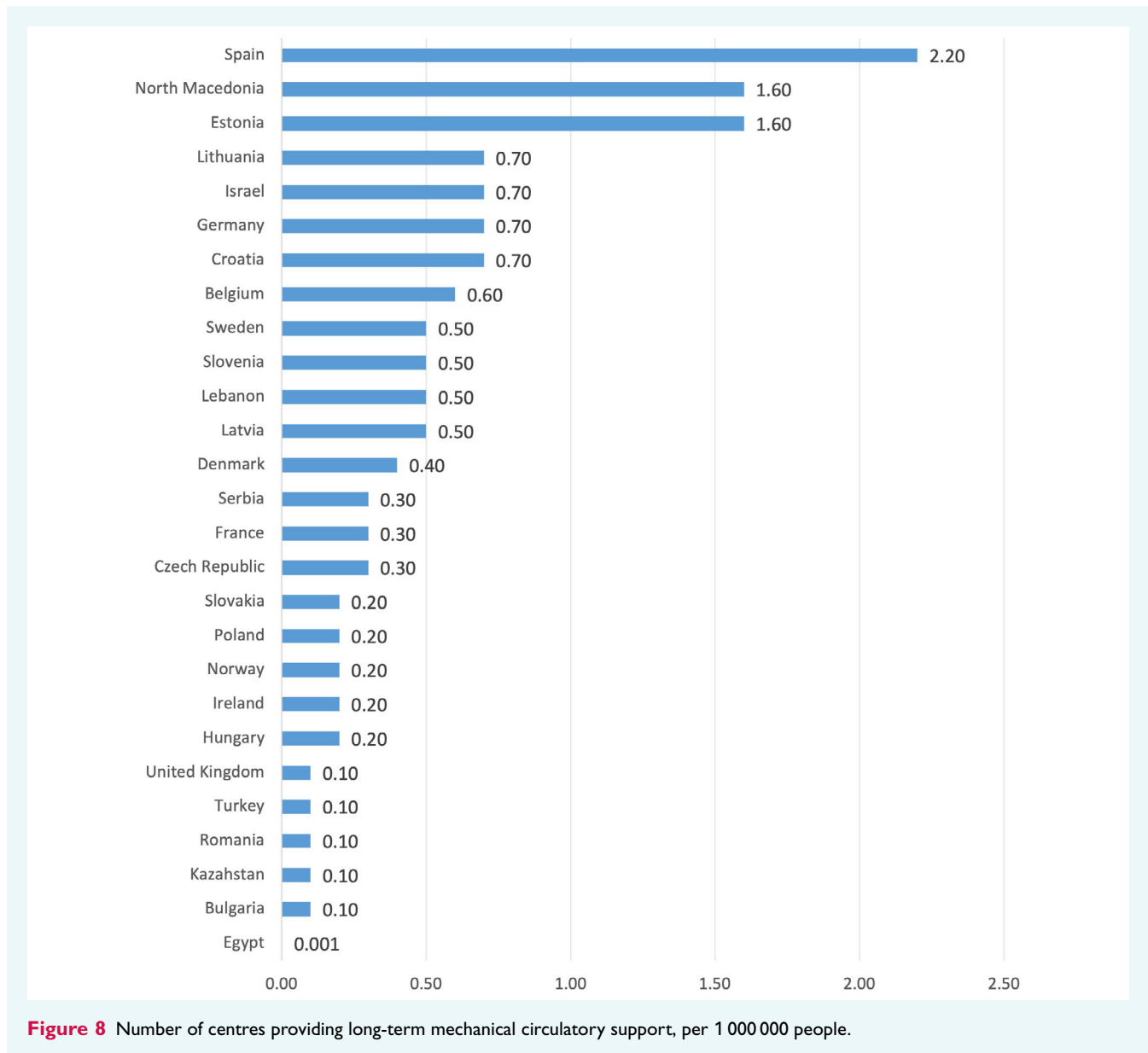


Figure 7 Number of centres with the capacity to perform ultrafiltration and renal replacement therapy, per 1 000 000 people.



Data on transition of care and follow-up of patients with HF were available for 65–84% of countries. In 25 countries reporting data on the access to in-patient cardiac rehabilitation, there was a median of 1.6 (IQR 0.4–3.1) institutions per 1 000 000 people providing in-hospital cardiac rehabilitation (Figure 10A). Armenia, Cyprus, Kazakhstan, Kyrgyzstan, Latvia, Lebanon, Lithuania, Montenegro, North Macedonia, Serbia and Slovenia reported a lack of inpatient cardiac rehabilitation programmes for HF patients. In 23 countries providing data on outpatient access to cardiac rehabilitation, there was a median of 2.2 (IQR 0.4–5.6) centres per 1 000 000 people (Figure 10B). Armenia, Cyprus, Kyrgyzstan, Lithuania, Malta and North Macedonia reported a lack of this service. Data on the availability of systematic post-discharge follow-up were provided by 26 countries, reporting a median of 2.5 (IQR 0.7–5.5) centres per 1 000 000 people offering this service (Figure 10C).

Reimbursement of medications and devices for the treatment of heart failure

Reimbursement data were provided by all countries. Proportion of countries with full or partial reimbursement for drugs and devices is presented in Figure 11. Angiotensin-converting enzyme inhibitors (ACEIs)/angiotensin II receptor blockers (ARBs), beta-blockers and mineralocorticoid receptor antagonists (MRAs) were available in all countries and their full/partial reimbursement was provided in 90%, 90% and 82.5% of countries, respectively (Figures 12–14). Sacubitril/valsartan and sodium–glucose cotransporter 2 (SGLT2) inhibitors were also universally available and fully/partially reimbursed in 63% and 51% of countries, respectively (Figures 15 and 16). Ivabradine and intravenous iron supplementation were funded

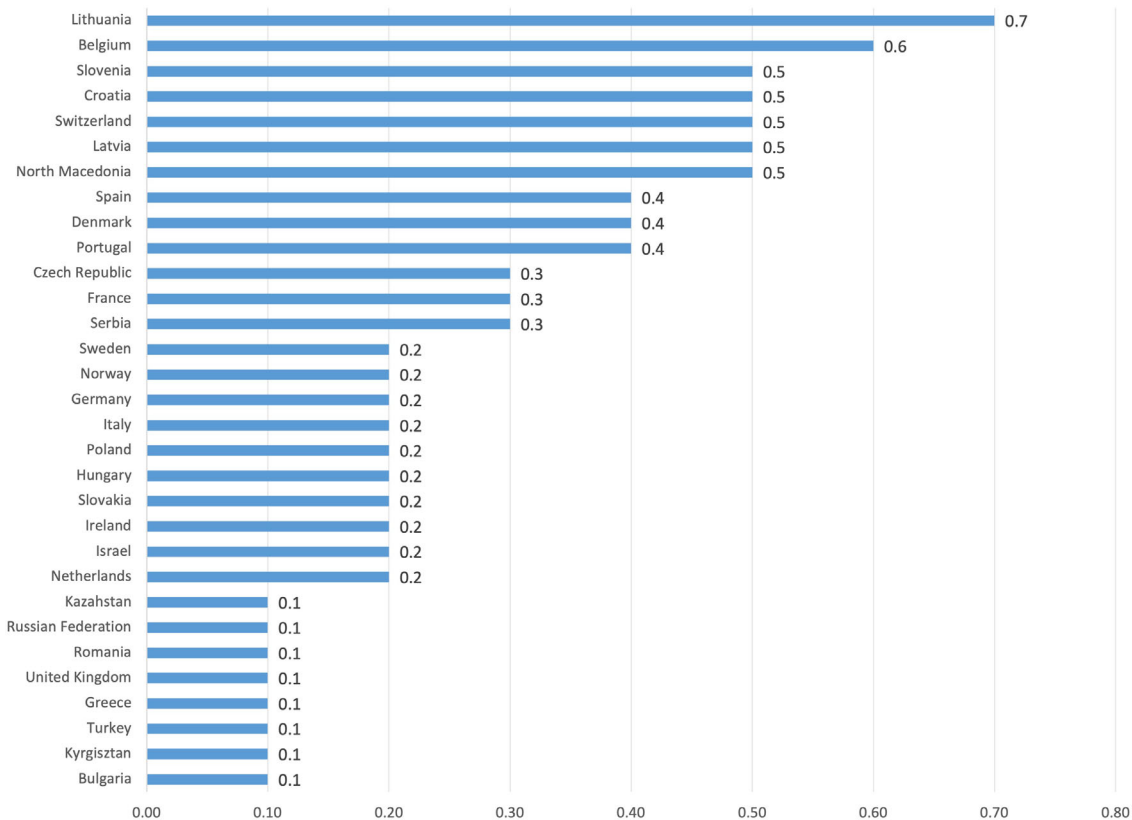


Figure 9 Number of centres with heart transplantation programmes, per 1 000 000 people.

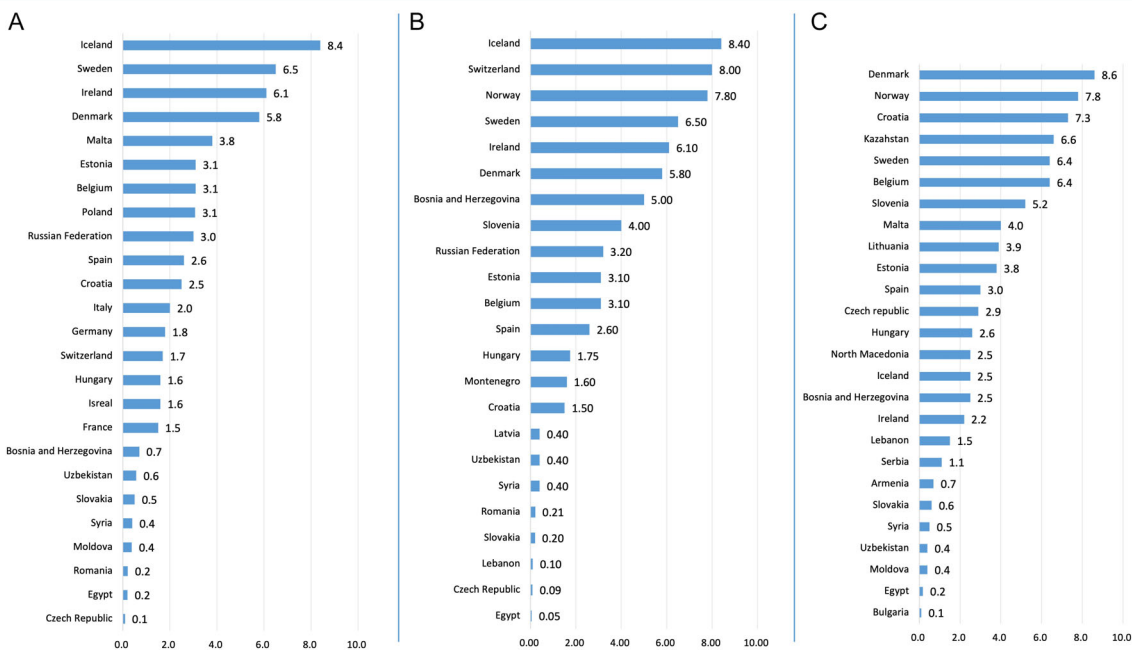


Figure 10 Number of centres providing (A) in-hospital cardiac rehabilitation, (B) outpatient cardiac rehabilitation, (C) systematic post-discharge follow-up.

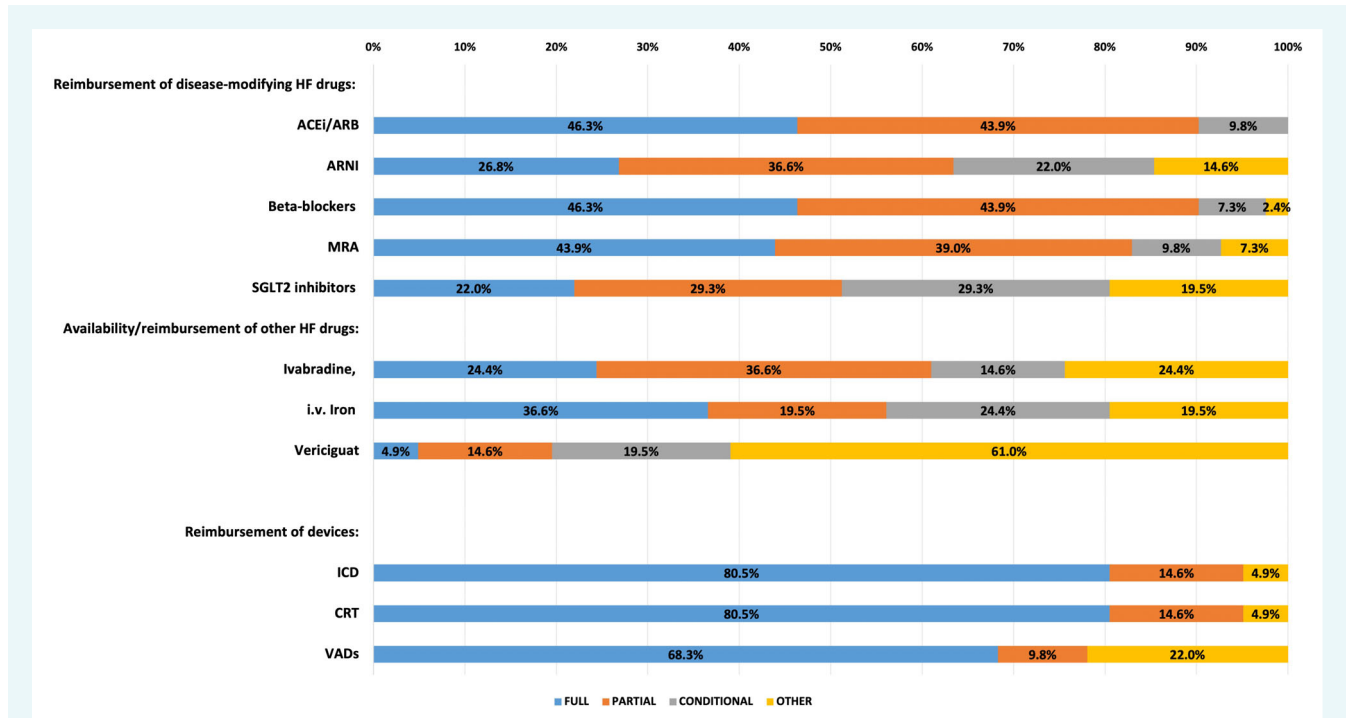


Figure 11 Reimbursement of guideline-directed heart failure medications and devices. ACEi, angiotensin-converting enzyme inhibitor; ARB, angiotensin II receptor blocker; CRT, cardiac resynchronization therapy; HF, heart failure; ICD, implantable cardioverter-defibrillator; i.v., intravenous; MRA, mineralocorticoid receptor antagonist; SGLT2, sodium–glucose cotransporter 2; VAD, ventricular assist device.

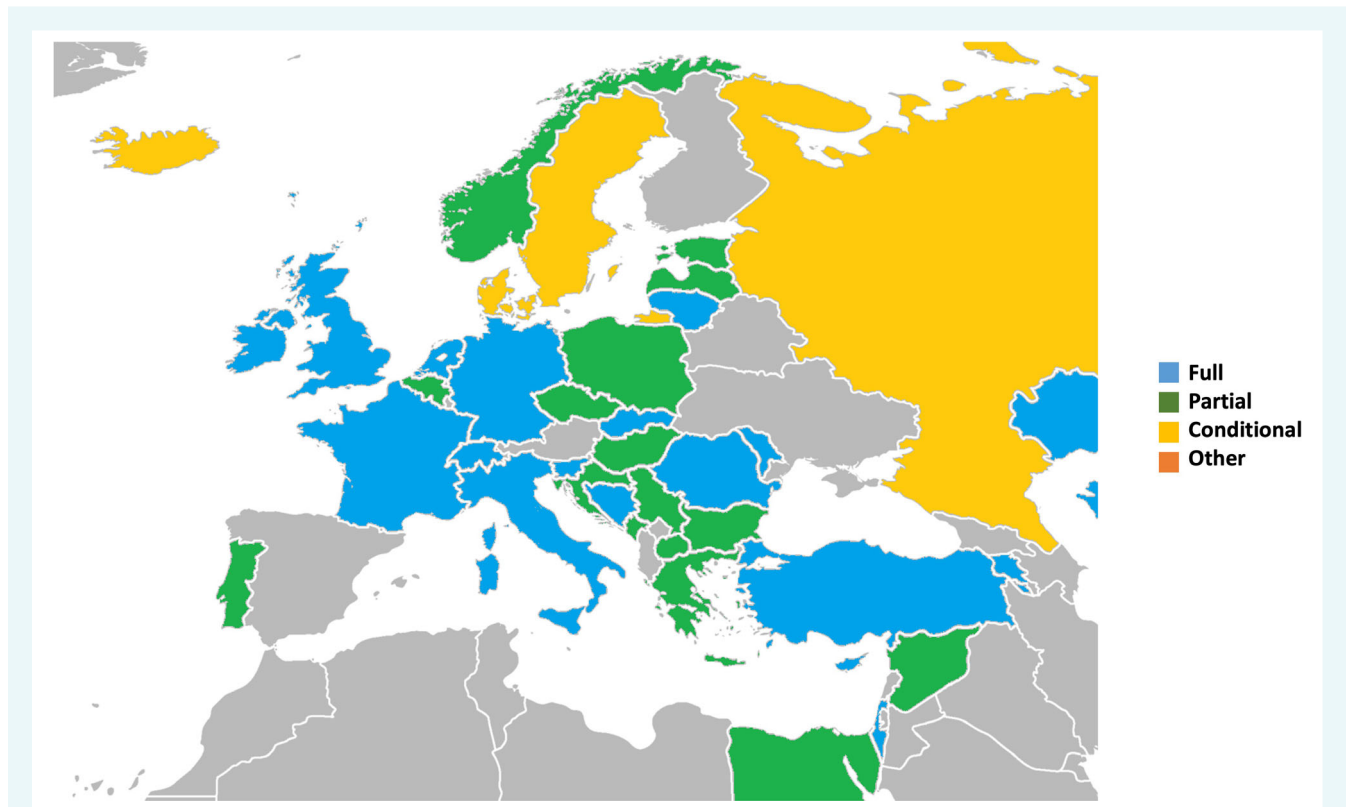


Figure 12 Reimbursement of angiotensin-converting enzyme inhibitors/angiotensin II receptor blockers.

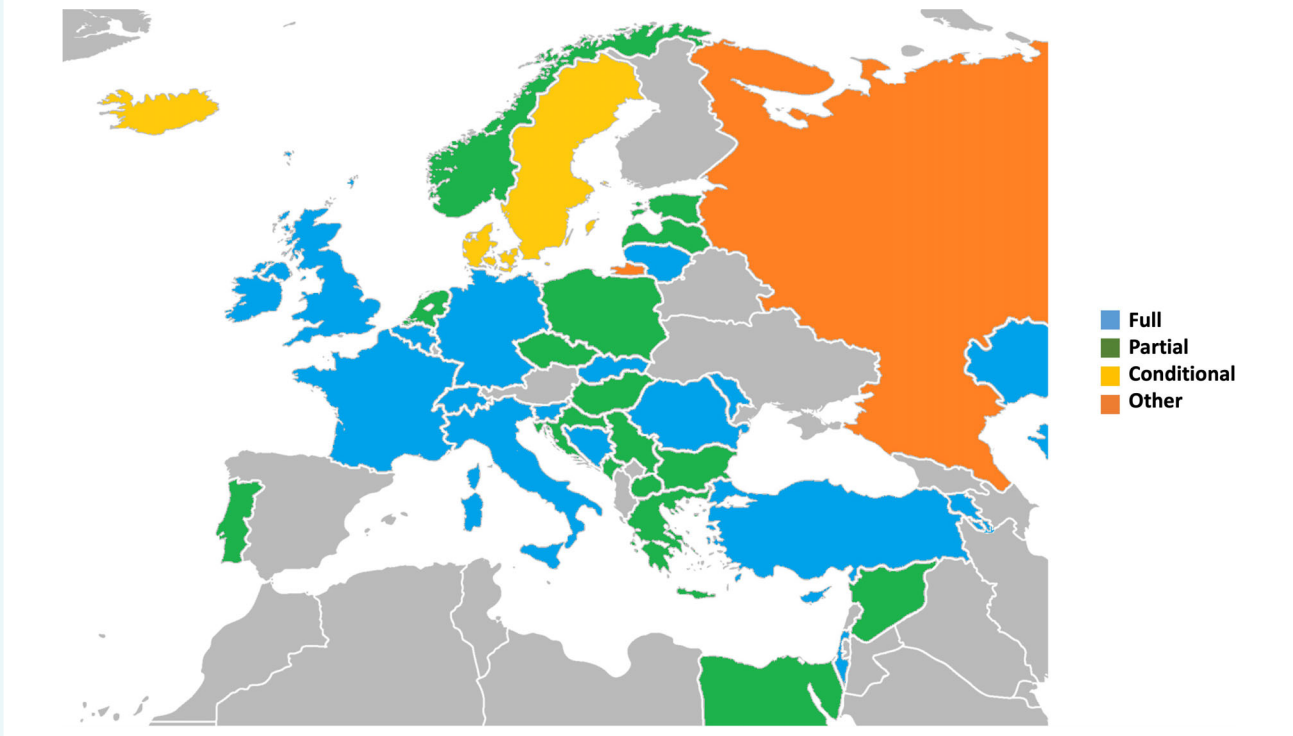


Figure 13 Reimbursement of beta-blockers.

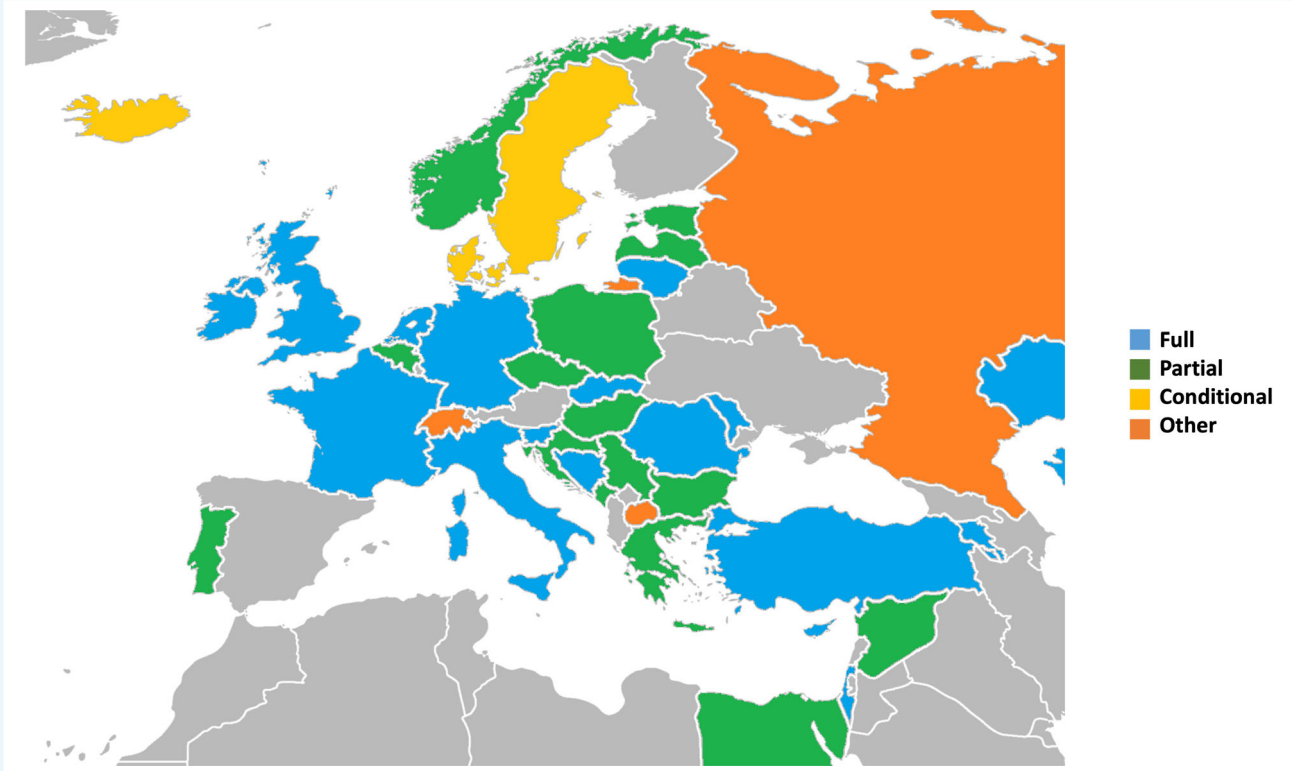


Figure 14 Reimbursement of mineralocorticoid receptor antagonists.

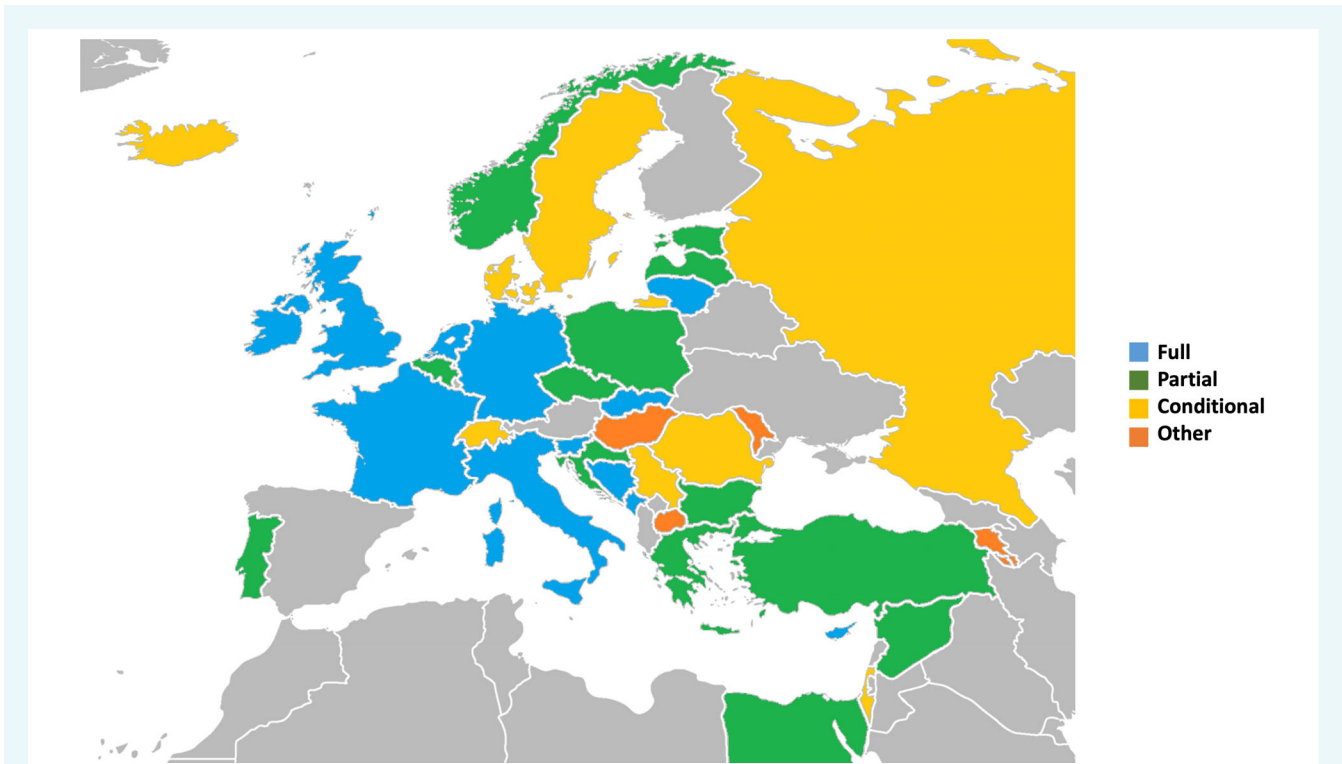


Figure 15 Reimbursement of sacubitril/valsartan.

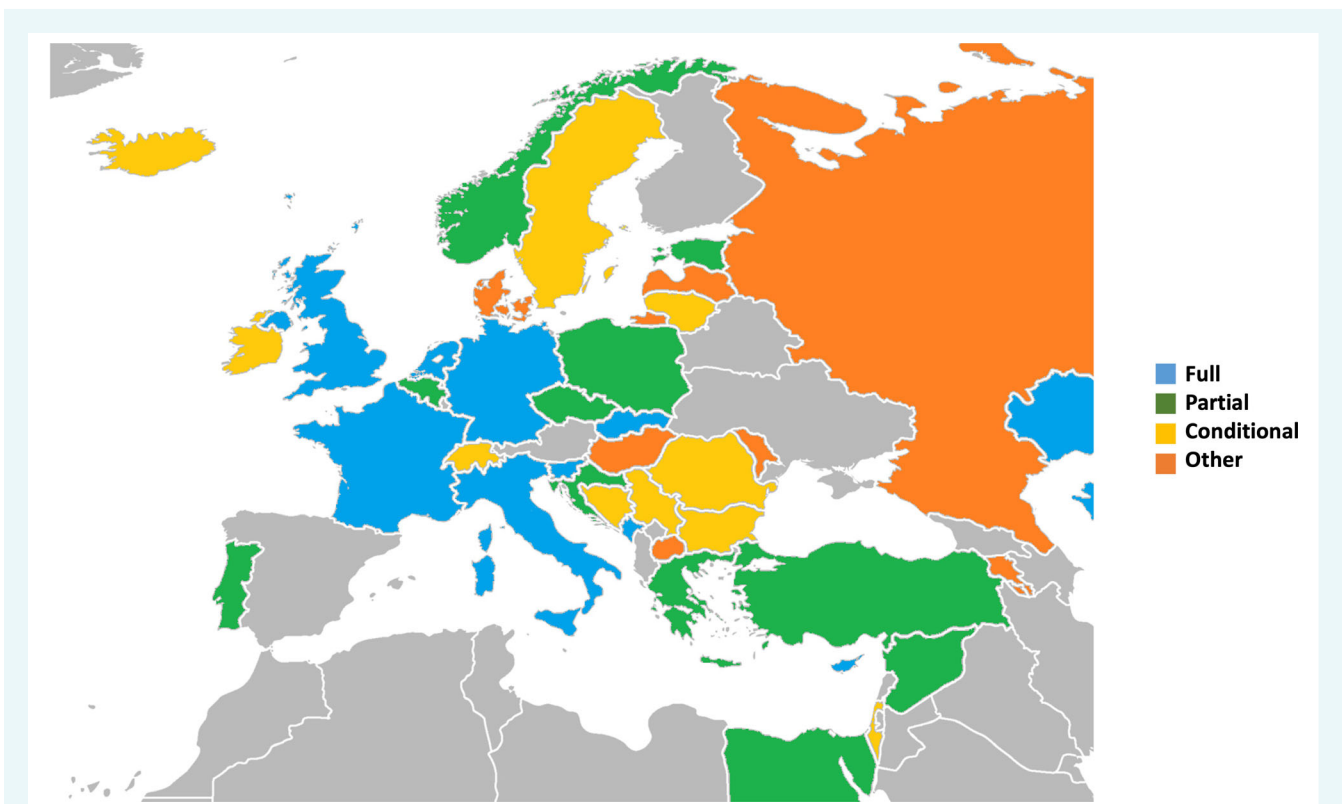


Figure 16 Reimbursement of sodium–glucose cotransporter 2 inhibitors.

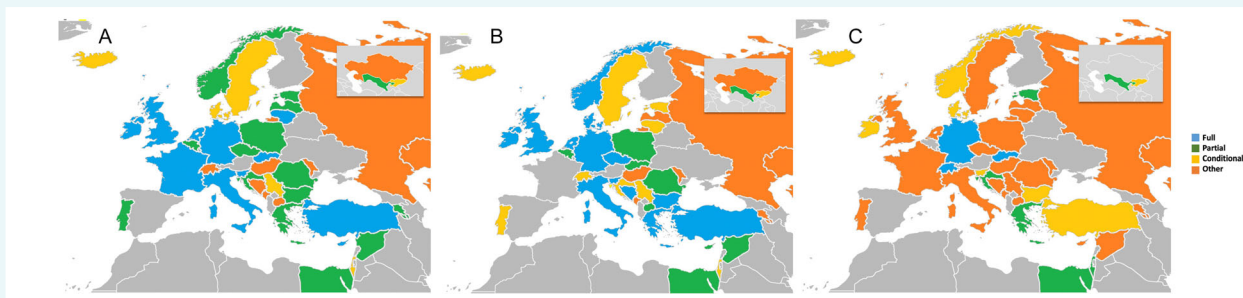


Figure 17 Reimbursement of (A) ivabradine, (B) intravenous iron supplementation, (C) vericiguat.

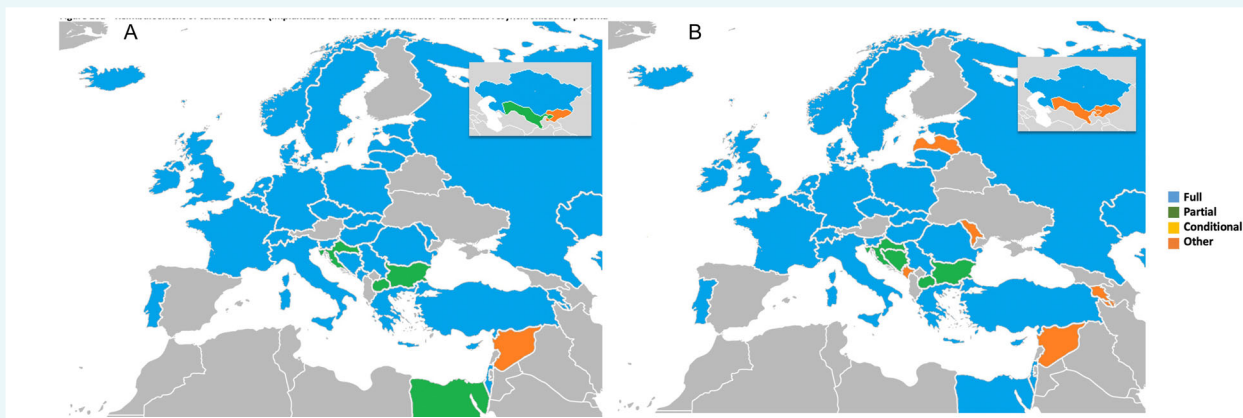


Figure 18 Reimbursement of (A) implantable cardioverter-defibrillator/cardiac resynchronization therapy, (B) long-term mechanical circulatory support.

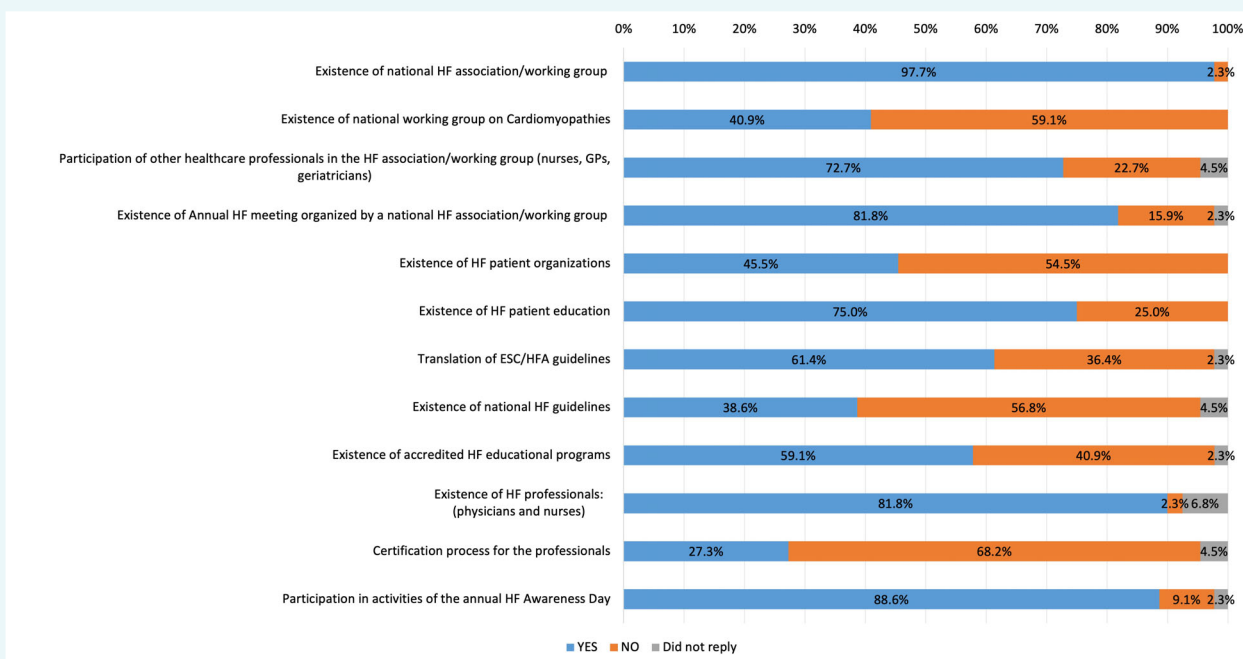


Figure 19 Structure and organization of professional and patient organizations.

in 61% and 56% of countries, respectively (Figure 17A,B). Vericiguat was fully reimbursed in Germany and Switzerland only, and partially reimbursed in Croatia, Egypt, Estonia, Greece and Uzbekistan, whilst in other countries (61%), this medication was unavailable (Figure 17C).

Both cardiac resynchronization therapy and implantable cardioverter-defibrillator devices were fully/partially reimbursed in 95% of countries, but not in Kyrgyzstan and Syria (Figure 18A). Provision of long-term MCS devices was reimbursed in 78% of countries (Figure 18B), except Armenia, Kyrgyzstan, Latvia, Moldova, Montenegro, Bosnia and Herzegovina, Syria and Uzbekistan, where these procedures were not routinely available.

Finally, public funding in some countries was conditional on factors such as: the type of medications or services provided, set thresholds for out-of-pocket annual expenses (Norway and Sweden), patient employment status, household income levels, degree of disability, and social categories.

Professional and patient organizations, education, awareness, and advocacy

All countries provided data in this section (Figure 19). National HF societies or working groups were available in all countries (98%) except Malta, with participation of other healthcare professionals (apart from cardiologists) in 73%. On the other hand, a working group on cardiomyopathies was available in 41% of countries. HF specialists and nurses engaged in the care of HF patients were reported in 82% of countries, whilst only 27% required official certification. Annual HF meetings/congresses were organized in 82% of countries, ESC guidelines were translated in 61% and national HF guidelines were available in 39% of countries. Accredited educational programmes/courses were available in 59% of countries and participation in ESC/HFA-organized registries/surveys was reported in 81% of countries. National HF registries were reported in 43% of countries. HF patient organizations were present in 45% of countries, and patient education was provided in 73% of countries. HF awareness day celebration was organized in 89% of countries.

Discussion

The European HF Survey provides unique, detailed assessment of HF management resources, medications and devices, as well as structure and activities of HF professional and patient organizations engaged in education, awareness, and advocacy about HF in Europe. These data are highly relevant for understanding the feasibility of implementing guideline recommendations and quality indicators in the care and outcomes of patients with HF.^{6,7}

The current survey encompasses more countries than previous initiatives, reflecting the broad geographical and socioeconomic diversity of the ESC member countries.^{3,4} It reveals that a significant proportion of European countries still lack systematic capture or public access to HF management statistics, particularly regarding innovative diagnostic and treatment options. Furthermore, the document highlights significant heterogeneities in all areas of care, reflecting socioeconomic inequities, differences in

national healthcare service organization, and variable reimbursement policies. Compared with earlier HFA surveys, there remains a gradient across borders in the availability and funding of all diagnostic and therapeutic resources, with fewer resources available or reimbursed in lower-to-middle-income countries compared to high-income countries, with a few exceptions, possibly due to specific national policies or regulations.^{3,4}

Diagnostic capacities

The present document offers a more detailed information on the availability of essential (i.e. NP assessment in different settings) and specialized diagnostic modalities (i.e. CMR, cardiac CT/CTCA, CPET and EMB) important for understanding the breadth of diagnostic capabilities in HF, including patient phenotyping and aetiologic profiling.⁸ Accordingly, the average number of centres offering emergency department NP testing has nearly doubled compared with the 2019 HFA Atlas (median, 3.6 per million), and contemporary availability of NPs is even higher for inpatients. Fewer countries now report the absence of NP testing. After the 2019 HFA Atlas highlighted significant international disparities in emergency department NP utilization, especially in Eastern European and former Soviet Union countries,⁴ an HFA-led initiative ('Peptide for Life' in the emergency department) demonstrated that raising awareness and increasing the availability of NP testing can significantly enhance their utilization in emergency settings in the Western Balkan region.⁹ However, an important observation of this survey is a striking underreporting and underutilization of NP testing in community settings. Only a minor proportion of countries provided data on community services access to NP assessment, whilst in a significant proportion of European countries these services were either unavailable or hampered by logistic or reimbursement limitations. This practice may result in underdiagnosis and undertreatment of outpatients with HF, especially among the individuals with mild or atypical symptoms (e.g. elderly, female, HF with preserved ejection fraction) or those with limited access to higher levels of care.^{10,11} Pathways have been suggested by the HFA/ESC for greater adoption of NP testing in community settings,¹² but our data indicate that availability and reimbursement issues at national levels impose a significant barrier. Furthermore, despite a signal of an overall improvement in the availability of specialized diagnostic modalities (e.g. CMR or CPET) compared with the 2019 Atlas Survey (median, 1.2 and 1.0 per million people, respectively), significant international disparities (mostly driven by socioeconomic inequities) remain evident. These disparities underscore a gap between guideline recommendations and the actual clinical capacities for diagnostic precision and risk assessment in conditions such as ischaemic heart disease, cardiomyopathies, valvular heart disorders, and advanced HF.^{13–15} This gap was highlighted by a recent observation from the EURObservational Research Programme Registry, which found that CMR was used for diagnostic assessment in only 29.4% of patients with cardiomyopathies across Europe.¹⁶ Notably, EMB appears to be particularly underutilized. A significant proportion of countries either lack data on this procedure or report none to modest availability, despite its recent endorsement for specific clinical situations.^{7,17}

Therapeutic aspects

Median number of HF centres providing a dedicated team of healthcare professionals included in the multidisciplinary management of HF has apparently increased compared with the 2019 HFA Atlas (median, 1.16 per million).⁴ Still several countries reported the absence of such institutions, whilst a significant proportion reported having <1 to 3 such centres per million people which may be insufficient to accommodate the growing complexity of diagnostic and therapeutic requirements in HF.⁴ Furthermore, insufficient number of HF centres at different levels of care may hamper patient access, referral and transition of care (from primary to tertiary and vice versa), resulting in diagnostic and therapeutic delays.¹⁸ Furthermore, formal national accreditation of HF centres was not required in any of the participating countries except in Germany, which may contribute to national and regional heterogeneity in the availability and service portfolio of HF centres. The HFA has recognized the need for providing universal accreditation and certification of healthcare institutions at different levels of care for the management of patients with HF according to evidence-based standards, within the HFA/ESC Quality of Care Centres programme and, more recently, the ICARE-HF project.¹⁹ This initiative marks a significant step towards unifying standards of care and providing multidisciplinary team management for patients with HF, but our results suggest a persisting need to engage more HF centres in many of the European countries.

Provision of therapeutic modalities pertinent to the management of HF patients including devices therapies, cardiac surgery and valvular interventions have recently been discussed in the ESC Atlas of Cardiology and ESC Atlas of Interventional Cardiology and therefore were not addressed in the present survey.^{20,21} The present document builds on previous data by discussing the availability of specific management resources for patients with acute or advanced HF, as well as the provision of appropriate transition of care and post-discharge follow-up, both of which have significant prognostic implications in HF.²²

Despite advances in healthcare infrastructure, including greater number of HF centres, there has not been a noticeable improvement in the availability of heart transplantation across the ESC member countries compared to the 2019 HFA Atlas Survey.⁴ This stagnation likely reflects a combination of medical, socioeconomic, and regulatory barriers that hinder the greater adoption and accessibility of this important therapeutic option for advanced HF.

However, compared to the 2019 HFA Atlas Survey, the present study suggests greater uptake of medical procedures in acute and advanced HF, including availability of centres providing short-term and long-term MCS and ultrafiltration/renal replacement therapy. Despite these improvements, disparities persist in the availability of these specialized procedures, particularly in low-to-middle-income countries, with several countries still reporting a lack of these treatment options. The HFA/ESC led initiatives may help overcome these disparities by suggesting feasible implementation protocols and providing expert training and by stimulating greater international collaboration in patient care.^{19,23}

Another important insight of the present study includes greater availability of in-hospital and outpatient cardiac rehabilitation for patients with HF compared with earlier surveys, but these capacities remain disproportionately more available in countries with greater financial resources and density of healthcare institutions (e.g. HF centres). In line with the guideline recommendations, systematic structured post-discharge follow-up of HF patients has been largely adopted across Europe, which is critical for therapeutic optimization, safety monitoring and early recognition of worsening HF.^{7,24} However, several countries still lack this important aspect of patient care, whilst in many countries patient follow-up is confined to HF centres, further accentuating the importance of these institutions for achieving contemporary standards of care.

Reimbursement of heart failure treatment

The present survey provides a comprehensive overview of reimbursement of drugs, devices, and procedures for HF management across participating countries. The extent of reimbursement plays a critical role in the implementation and accessibility of these treatments, particularly in low-to-middle-income countries, where affordability issues and access to innovative treatments impose significant limitations.^{25,26} A recent multinational survey documented a marked variation in retail prices of GDMT and lower affordability and accessibility of GDMT in lower-to-middle-income countries, which is confirmed by this survey.²⁷ While essential medications like ACEIs/ARBs, beta-blockers, and MRAs are widely available and mostly fully reimbursed, there are significant gaps in the funding and availability of newer and advanced therapies across Europe. Although more countries report reimbursement of HF medications compared with the 2019 HFA Atlas Survey,⁴ only several high-income countries provide full reimbursement of sacubitril/valsartan, SGLT2 inhibitors, ivabradine and intravenous iron supplementation, whilst vericiguat remains unavailable in most European countries. In a significant part of the Central/Eastern Europe and former Soviet Union countries, reimbursement of HF medications is either partial or conditional (including patient out-of-pocket expenses), and such policies bear consequences for implementing guideline recommendations despite confirmed cost-effectiveness.^{27–30} Importantly, most countries provide full reimbursement of device and procedural therapies, but there remains a significant proportion where these modalities are either unavailable or unaffordable. Stronger initiatives led by HFA/ESC and NHFS are necessary to help foster national treatment monitoring programmes and develop policies to ensure appropriate distribution of healthcare budgets to essential and novel treatment options.²⁵ Providing more comprehensive and equitable reimbursement policies is crucial for improving HF management and patient outcomes.³¹

Heart failure societies and educational efforts

The widespread presence NHFS/working groups indicates a strong organizational framework dedicated to advancing HF care,

awareness and advocacy. However, the present survey emphasizes the need to further develop working groups dedicated to specific patient populations (e.g. cardiomyopathies, congenital heart disease) to improve standards of care and provide targeted management.¹³ The presence of these societies/working groups has a crucial role in promoting guideline implementation, education and research, as exemplified by the successful completion of this survey.^{3,4} There is also evidence of the more extensive multidisciplinary engagement and greater involvement of patient organizations compared with earlier surveys, but there is still a need for more extensive engagement of HF nurses in collaborative care and education in many of the participating countries. The present survey underscores the requirement for stronger development of formal HFA/ESC or national certification of HF professionals (physicians and nurses) and improved access to evidence-based medicine through provision of translated versions and national adaptations of ESC guidelines. There is also a need for implementation of accredited educational platforms (HFA-led educational courses, master studies, etc.), and activities aimed at empowerment and advocacy for HF patients across the ESC member countries.

Limitations

Several limitations deserve acknowledgment. The quality and completeness of collected data may be hampered by insufficient availability and underreporting of HF management statistics in many of the participating countries. The lack of data may not necessarily indicate a lack of resources but rather a lack of systematic data capture. Additionally, provision of temporal trends was not feasible due to methodological differences compared with previous HFA surveys.

Conclusions

The European HF Survey is the result of a decade long collaborative effort of HFA/ESC and NHFS to monitor HF epidemiology, resources for its management, educational and advocacy activities. This unique effort has been instrumental in understanding changes in HF burden and assessing the capacities of different healthcare systems to meet the evolving demands for its management. The results of previous surveys have inspired new and ongoing initiatives to improve and unify standards of care.^{9,19} Since the 2019 HFA Atlas Survey, an evident progress has occurred in developing HF centres, providing access to modern diagnostic and therapeutic modalities and reimbursement of fundamental HF medications. However, the present survey underscores persistent international disparities in availability, access and affordability of resources and medications and the need for standardized institutional and professional accreditation for HF care. There is also the need for wider involvement of HF nurses and patient organizations in collaborative care and education and stronger activities to improve public recognition of the HF burden. Addressing these gaps will be crucial for the more effective guideline implementation and improvement of quality of HF care across Europe.

Supplementary Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Conflict of interest: none declared.

References

- Groenewegen A, Rutten FH, Mosterd A, Hoes AW. Epidemiology of heart failure. *Eur J Heart Fail* 2020;**22**:1342–1356. <https://doi.org/10.1002/ehf.1858>
- Savarese G, Becher PM, Lund LH, Seferovic P, Rosano GMC, Coats AJS. Global burden of heart failure: A comprehensive and updated review of epidemiology. *Cardiovasc Res* 2023;**118**:3272–3287. <https://doi.org/10.1093/cvr/cvac013>
- Seferovic PM, Stoerk S, Filippatos G, Mareev V, Kavoliuniene A, Ristic AD, et al.; Committee of National Heart Failure Societies or Working Groups of the Heart Failure Association of the European Society of Cardiology. Organization of heart failure management in European Society of Cardiology member countries: Survey of the Heart Failure Association of the European Society of Cardiology in collaboration with the Heart Failure National Societies/Working Groups. *Eur J Heart Fail* 2013;**15**:947–959. <https://doi.org/10.1093/eurjhf/hft092>
- Seferović PM, Vardas P, Jankowska EA, Maggioni AP, Timmis A, Milinković I, et al.; National Heart Failure Societies of the ESC member countries. The Heart Failure Association Atlas: Heart failure epidemiology and management statistics 2019. *Eur J Heart Fail* 2021;**23**:906–914. <https://doi.org/10.1002/ehf.2143>
- Seferović PM, Polovina M, Savarese G, Milinković I, Stanisavljević D, Lund L, et al. Insights into the European heart failure epidemiology. *Eur J Heart Fail* 2025;**27**:1950–1960. <https://doi.org/10.1002/ehf.3710>
- Aktaa S, Polovina M, Rosano G, Abidin A, Anguita M, Lainscak M, et al. European Society of Cardiology quality indicators for the care and outcomes of adults with heart failure. Developed by the Working Group for Heart Failure Quality Indicators in collaboration with the Heart Failure Association of the European Society of Cardiology. *Eur J Heart Fail* 2022;**24**:132–142. <https://doi.org/10.1002/ehf.2371>
- McDonagh TA, Metra M, Adamo M, Gardner RS, Baumhach A, Böhm M, et al.; ESC Scientific Document Group. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC). With the special contribution of the Heart Failure Association (HFA) of the ESC. *Eur J Heart Fail* 2022;**24**:4–131. <https://doi.org/10.1002/ehf.2333>
- Rosano GMC, Moura B, Metra M, Böhm M, Bauersachs J, Ben Gal T, et al. Patient profiling in heart failure for tailoring medical therapy. A consensus document of the Heart Failure Association of the European Society of Cardiology. *Eur J Heart Fail* 2021;**23**:872–881. <https://doi.org/10.1002/ehf.2206>
- Bayes-Genis A, Kriljanac G, Zdravković M, Ašanin M, Stojšić-Milosavljević A, Radovanović S, et al.; Young Investigators of the Peptide for Life Initiative. The 'Peptide for Life' initiative in the emergency department study. *ESC Heart Fail* 2024;**11**:672–680. <https://doi.org/10.1002/ehf2.14625>
- van Riet EES, Hoes AW, Limburg A, Landman MAJ, van der Hoeven H, Rutten FH. Prevalence of unrecognized heart failure in older persons with shortness of breath on exertion. *Eur J Heart Fail* 2014;**16**:772–777. <https://doi.org/10.1002/ehf.110>
- Lam LL, Cameron PA, Schneider HG, Abramson MJ, Müller C, Krum H. Meta-analysis: Effect of B-type natriuretic peptide testing on clinical outcomes in patients with acute dyspnea in the emergency setting. *Ann Intern Med* 2010;**153**:728–735. <https://doi.org/10.7326/0003-4819-153-11-201012070-00006>
- Docherty KF, Lam CSP, Rakisheva A, Coats AJS, Greenhalgh T, Metra M, et al. Heart failure diagnosis in the general community – Who, how and when? A clinical consensus statement of the Heart Failure Association (HFA) of the European Society of Cardiology (ESC). *Eur J Heart Fail* 2023;**25**:1185–1198. <https://doi.org/10.1002/ehf.2946>
- Arbelo E, Protonotarios A, Gimeno JR, Arbustini E, Barriales-Villa R, Basso C, et al.; ESC Scientific Document Group. 2023 ESC Guidelines for the management of cardiomyopathies. *Eur Heart J* 2023;**44**:3503–3626. <https://doi.org/10.1093/eurheartj/ehad194>
- Crespo-Leiro MG, Metra M, Lund LH, Milicic D, Costanzo MR, Filippatos G, et al. Advanced heart failure: A position statement of the Heart Failure Association of the European Society of Cardiology. *Eur J Heart Fail* 2018;**20**:1505–1535. <https://doi.org/10.1002/ehf.1236>

15. Vahanian A, Beyersdorf F, Praz F, Milojevic M, Baldus S, Bauersachs J, et al.; ESC/EACTS Scientific Document Group. 2021 ESC/EACTS Guidelines for the management of valvular heart disease. *Eur Heart J* 2021;**43**:561–632. <https://doi.org/10.1093/eurheartj/ehab395>
16. Mizia-Stec K, Charron P, Blanes JRG, Elliott P, Kaski JP, Maggioni AP, et al. Availability and applicability of cardiac magnetic resonance imaging in diagnosis in cardiomyopathies: The Cardiomyopathy/Myocarditis registry of the EURObservational Research Programme of the ESC. *Eur Heart J* 2020;**41**:205. <https://doi.org/10.1093/ehjci/ehaa946.0205>
17. Seferović PM, Tsutsui H, McNamara DM, Ristić AD, Basso C, Bozkurt B, et al. Heart Failure Association of the ESC, Heart Failure Society of America and Japanese Heart Failure Society Position statement on endomyocardial biopsy. *Eur J Heart Fail* 2021;**23**:854–871. <https://doi.org/10.1002/ehf.2190>
18. Seferović PM, Polovina M, Adlbrecht C, Bělohávek J, Chioncel O, Gonçalvesová E, et al. Navigating between Scylla and Charybdis: Challenges and strategies for implementing guideline-directed medical therapy in heart failure with reduced ejection fraction. *Eur J Heart Fail* 2021;**23**:1999–2007. <https://doi.org/10.1002/ehf.2378>
19. Seferović PM, Piepoli MF, Lopatin Y, Jankowska E, Polovina M, Anguita-Sanchez M, et al.; Heart Failure Association Board of the European Society of Cardiology. Heart Failure Association of the European Society of Cardiology Quality of Care Centres Programme: Design and accreditation document. *Eur J Heart Fail* 2020;**22**:763–774. <https://doi.org/10.1002/ehf.1784>
20. Timmis A, Vardas P, Townsend N, Torbica A, Katus H, De Smedt D, et al. European Society of Cardiology: Cardiovascular disease statistics 2021. *Eur Heart J* 2022;**43**:716–799. <https://doi.org/10.1093/eurheartj/ehab892>
21. Barbato E, Noc M, Baumbach A, Dudek D, Bunc M, Skolidis E, et al. Mapping interventional cardiology in Europe: The European Association of Percutaneous Cardiovascular Interventions (EAPCI) Atlas Project. *Eur Heart J* 2020;**41**:2579–2588. <https://doi.org/10.1093/eurheartj/ehaa475>
22. Mebazaa A, Davison B, Chioncel O, Cohen-Solal A, Diaz R, Filippatos G, et al. Safety, tolerability and efficacy of up-titration of guideline-directed medical therapies for acute heart failure (STRONG-HF): A multinational, open-label, randomised, trial. *Lancet* 2022;**400**:1938–1952. [https://doi.org/10.1016/S0140-6736\(22\)02076-1](https://doi.org/10.1016/S0140-6736(22)02076-1)
23. Basir MB, Lemor A, Gorgis S, Patel KC, Kolski BC, Bharadwaj AS, et al. Early utilization of mechanical circulatory support in acute myocardial infarction complicated by cardiogenic shock: The National Cardiogenic Shock Initiative. *J Am Heart Assoc* 2023;**12**:e031401. <https://doi.org/10.1161/JAHA.123.031401>
24. Metra M, Tomasoni D, Adamo M, Bayes-Genis A, Filippatos G, Abdelhamid M, et al. Worsening of chronic heart failure: Definition, epidemiology, management and prevention. A clinical consensus statement by the Heart Failure Association of the European Society of Cardiology. *Eur J Heart Fail* 2023;**25**:776–791. <https://doi.org/10.1002/ehf.2874>
25. Chioncel O, Čelutkienė J, Bělohávek J, Kamzola G, Lainscak M, Merkely B, et al. Heart failure care in the Central and Eastern Europe and Baltic region: Status, barriers, and routes to improvement. *ESC Heart Fail* 2024;**11**:1861–1874. <https://doi.org/10.1002/ehf2.14687>
26. Khatib R, McKee M, Shannon H, Chow C, Rangarajan S, Teo K, et al.; PURE Study Investigators. Availability and affordability of cardiovascular disease medicines and their effect on use in high-income, middle-income, and low-income countries: An analysis of the PURE study data. *Lancet* 2016;**387**:61–69. [https://doi.org/10.1016/S0140-6736\(15\)00469-9](https://doi.org/10.1016/S0140-6736(15)00469-9)
27. Averbuch T, Esfahani M, Khatib R, Kayima J, Miranda JJ, Wadhera RK, et al. Pharmaco-disparities in heart failure: A survey of the affordability of guideline recommended therapy in 10 countries. *ESC Heart Fail* 2023;**10**:3152–3163. <https://doi.org/10.1002/ehf2.14468>
28. Dixit NM, Parikh NU, Ziaieian B, Fonarow GC. Economic modeling analysis of an intensive GDMT optimization program in hospitalized heart failure patients. *Circ Heart Fail* 2023;**16**:e011218. <https://doi.org/10.1161/CIRCHEARTFAILURE.123.011218>
29. Parizo JT, Goldhaber-Fiebert JD, Salomon JA, Khush KK, Spertus JA, Heidenreich PA, et al. Cost-effectiveness of dapagliflozin for treatment of patients with heart failure with reduced ejection fraction. *JAMA Cardiol* 2021;**6**:926–935. <https://doi.org/10.1001/jamacardio.2021.1437>
30. Cohen LP, Isaza N, Hernandez I, Lewis GD, Ho JE, Fonarow GC, et al. Cost-effectiveness of sodium-glucose cotransporter-2 inhibitors for the treatment of heart failure with preserved ejection fraction. *JAMA Cardiol* 2023;**8**:419–428. <https://doi.org/10.1001/jamacardio.2023.0077>
31. Zannad F, Alonso Garcia MA, Borer JS, Stough WG, Clutton-Brock T, Rosenberg Y, et al. Role of payers in the development of cardiovascular therapeutics: Misalignment between approval and reimbursement. *J Am Coll Cardiol* 2017;**70**:2822–2830. <https://doi.org/10.1016/j.jacc.2017.10.027>