Intelligence Unit

GLOBAL HEART HEALTH

Evaluating efforts to promote healthy hearts

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CONTENTS

- 2 About this report
- 4 Executive summary
- 7 Introduction
- 9 CHAPTER 1 Heart health strategies and public-health policies under the spotlight
- 16 CHAPTER 2 A focus on best practice and integrated care
- 28 CHAPTER 3 Looking ahead: key issues for policymakers
- **33** Conclusion
- **35** Appendix: Methodology and Infographic

ABOUT THIS REPORT

Global heart health: Evaluating efforts to promote healthy hearts is an Economist Intelligence Unit report, commissioned by Novartis, which examines global policies for diagnosing and treating heart disease. The findings of this report are based on a scorecard created by The Economist Intelligence Unit in the second half of 2016, a series of in-depth interviews with a range of senior healthcare experts—including healthcare practitioners, academics and policymakers—and additional desk research.

Our thanks are due to the following for their time and insight (listed alphabetically):

- Ricardo Baptista Leite, physician and member of parliament, Portugal
- Mark Dancy, consultant cardiologist, Imperial Healthcare NHS Trust, UK
- Huon Gray, national clinical director for heart disease, NHS England, UK
- Paul Heidenreich, professor of medicine and health research and policy, Stanford University, and chair, American College of Cardiology and American Heart Association's (AHA) Task Force on Performance Measurement, the AHA Council on Quality of Care and Outcomes Research and the AHA Get With the Guidelines Steering Committee, US
- Mark Huffman, assistant professor of preventive medicine-epidemiology, Northwestern University Feinberg School of Medicine, Chicago, and senior programme adviser to the World Heart Federation for its Emerging Leaders presidential initiative, US
- Peter Kearney, consultant cardiologist, Cork University Hospital, Ireland, and head of advocacy, European Society of Cardiology
- Susanne Logstrup, director, European Heart Network, Brussels
- Nikos Maniadakis, professor of health services organisation and management, National School of Public Health, Greece
- Paulo Nicola, epidemiologist, University of Lisbon, and former consultant to the deputy secretary of state of the minister of health, Portugal
- Pekka Puska, director-general, Finnish National Institute for Health and Welfare, Ministry of Health, Finland
- David Sim Kheng Leng, senior consultant, National Heart Centre, Singapore
- Ioana Ursu, director and founder, Mapping Health, and outgoing state secretary for health, Ministry of Health, Romania
- Hans van Laarhoven, manager, patient advocacy team, De Hart & Vaatgroep, Netherlands

- Dennis van Veghel, director, Meetbar Beter Foundation, Netherlands
- David Wood, Garfield Weston professor of cardiovascular medicine, International Centre for Circulatory Health, Imperial College London, UK

We also interviewed sources from the European Commission, who chose to remain anonymous.

The Economist Intelligence Unit bears sole responsibility for the content of this report. The findings and views expressed in the report do not necessarily reflect the views of the sponsor. Andrea Chipman was the author of the report, and Martin Koehring was the editor.

May 2017

EXECUTIVE SUMMARY

Although health systems have made great strides in reducing the toll of cardiovascular disease (CVD) over the past few decades, heart diseases still account for nearly one-third of global deaths. They also create a growing burden on health systems and the wider economy, measured for example in disability-adjusted life years (DALYs), as more people live with heart diseases for longer. As hospitalisation costs rise, there is likely to be growing pressure on health systems to develop adequate prevention and intervention policies to boost heart health.

In the second half of 2016 The Economist Intelligence Unit created a scorecard to help to assess the burden of, and government policy approaches to, diseases of the heart. Heart disease can take many forms, such as coronary heart disease (including heart attack and angina), arrhythmias (including atrial fibrillation) and heart failure. The scorecard is designed as a tool to allow comparisons between the individual policies of countries rather than comparing the total scores of countries.

The Economist Intelligence Unit assessed the approaches of 28 countries to heart health and scored them according to 21 indicators within five broader domains: (1) strategic plan; (2) public-health policies; (3) best practice; (4) access and provision; and (5) patient focus. The scorecard found significant variations in performance against the indicators, both between and within regions, something that experts interviewed for this paper confirmed.

Our research and interviews have shown that while strong progress has been made on extending the lives of those who might have suffered premature death from coronary heart disease a generation ago, many are still facing severe debilitation in later years. In addition, a lack of sufficiently integrated care between primary and secondary healthcare makes it difficult to properly manage patients and ensure that guidelines are being followed. Finally, experts emphasise the importance of primary care in collecting information on outcomes and in reducing rates of readmission to hospital after acute events. In order to cope with the growing needs of ageing populations, health systems will have to focus increasingly on managing diseases of the elderly (including heart health problems), for example through community-based services.

Key findings

Many countries have established strategic plans for heart health, but they are often not sufficiently comprehensive and lack adequate implementation. The lack of an overarching vision for heart health makes it more difficult for policymakers to understand the complexity of heart disease and its relationship with other chronic conditions, and to budget accordingly for prevention and treatment. At the same time, the absence of disease-specific plans is likely to make it more difficult to collect data on individual heart diseases and treatment outcomes. Following strategic plans through with clear action could translate into better outcomes, while the introduction of disease-specific strategies could help to address the areas of highest priority.

Strong public-health programmes and primary care are crucial for reducing mortality rates further but remain patchy in many places. Most countries in the scorecard have public-health plans in place for risk factors for heart disease, including smoking, obesity and sedentary lifestyles. However, a smaller number have specific awareness plans for heart health. Meanwhile, there is little in the way of dedicated region-wide public-health programmes focusing on heart health and other non-communicable diseases (for example in the EU). More focused, better organisation and improved outreach and resource allocation could help to make prevention programmes more efficient.

The majority of countries surveyed provide integrated care pathways for one or more heart diseases, but there is room for improvement, especially in terms of comprehensive monitoring systems. Many countries are adopting elements of best-practice clinical guidelines relating to heart health. Almost two-thirds provide integrated care pathways for one or more heart diseases. However, only around one-fifth of countries surveyed have a monitoring system (such as a registry) in place for all heart diseases covered in the scorecard, and many of these are still struggling owing to pressures on funding. A move towards specialist heart centres, which has been debated in the UK, for example, could help to accelerate the delivery of more integrated care. "It would be very good to have hospitals concentrate on a smaller number of medical conditions, specialising more in depth and investing in knowledge and spreading and sharing knowledge through a network," says Dennis van Veghel, director of the Dutch Meetbar Beter Foundation, a charity that aims to improve transparency and the quality of care for patients with heart diseases.

Access and provision of heart health varies significantly. The extent of government financial support for healthcare is one of the most significant variables for heart health. While most countries are good at fulfilling national guidelines, availability of cardiac rehabilitation programmes and regular referral to them is frequently dependent on countries' income levels. Inequalities in access to primary and secondary prevention programmes, as well as to cardiac interventions, exist both within and between countries. There is a strong argument to be made for placing greater emphasis on cardiac rehabilitation, given that there is good evidence that it prevents secondary cardiac events, keeps people from ending up in hospital and helps patients to return to work.

Better involvement of patients could improve delivery of care and increase knowledge about the scope of heart disease. A majority of countries have patient advocacy organisations to promote heart health and provide patient education programmes of varying extent and depth. However, few employ relevant health status surveys or use e-health to deliver care and collect patient data. Fragmented policies and comparatively little in the way of patient-focused programmes are underlined by a lack of comprehensive data. This makes it difficult to adequately assess the impact of heart disease on national health systems and undermines efforts to get more value out of healthcare spending.

Earlier intervention can help to increase healthy life years in older age. In particular, patient involvement from the early stages of cardiac disease can lead both to greater self-management and to improved quality of care for older patients. Moreover, better control over hypertension, diabetes and other chronic diseases and better management of heart failure can yield gains for elderly patients. Stronger integration between primary and secondary care, through the creation of cardiac care networks, for example, can also help with the overall management of cardiac conditions.

INTRODUCTION

Health systems have made great strides in reducing the toll of cardiovascular disease (CVD) over the past few decades. Yet heart diseases kill nearly 18m people worldwide, according to the World Health Organisation (WHO), accounting for nearly one-third of global deaths. In Europe CVD is the top killer, accounting for 37.5% of all deaths in the EU in 2013.¹ The burden of the disease goes beyond mortality, creating a growing health and economic burden on health systems and the wider economy. The CVD burden in terms of disability-adjusted life years (DALYs), which measure the impact of continuing ill health in terms of years of healthy life lost, has risen rapidly on a global scale in recent decades.² (See chart 1.)

Chart 1



Source: Institute for Health Metrics and Evaluation, Global Burden of Disease Study 2015 (GBD 2015), GBD Results Tool. Available at: http://ghdx.healthdata.org/gbd-results-tool

The WHO's global action plan for the prevention and control of non-communicable diseases (NCDs) for the 2013-20 period calls for a 25% relative reduction in premature mortality from CVD and three other disease categories by 2025.³ The concerns of health systems go beyond mortality, as more people live with CVD longer amid population ageing and improved care. Many heart disease patients, such as heart-failure patients, have seen a drop in early mortality, for example in the US.⁴ However, these successes have meant that more patients are likely to live with conditions such as hypertension, stroke, coronary heart disease and heart failure for longer periods of time. A key challenge facing healthcare providers and policymakers is how to extend healthy life years.

¹ Eurostat, Cardiovascular diseases statistics. Available at: http:// ec.europa.eu/eurostat/statisticsexplained/index.php/Cardiovascular_ diseases_statistics

² WHO, Metrics: Disability-Adjusted Life Year (DALY). Available at: http://www. who.int/healthinfo/global_burden_ disease/metrics_daly/en/

³ WHO, Global action plan for the prevention and control of NCDs 2013-2020. Available at: http://www.who.int/ nmh/publications/ncd-action-plan/en/

⁴ "Heart failure patients living longer, but long-term survival still low", American Heart Association, May 15th 2013. Available at: http://newsroom.heart. org/news/heart-failure-patients-livinglonger-but-long-term-survival-still-low A 2012 Oxford University study estimated the annual cost of heart disease to the EU economy alone at €196bn (US\$209bn), comprising direct healthcare costs (54% of the total), informal care costs (22%), productivity loss due to mortality (14%) and productivity loss due to morbidity (10%).⁵

As hospitalisation costs rise, and with heart failure accounting for the largest share of the hospitalisation costs of those over the age of 65,⁶ there is likely to be growing pressure on health systems to develop adequate prevention policies and programmes to protect heart health as well as improve patient care. In particular, a key challenge will be how to improve healthy life years as life expectancy increases for those living with heart disease and co-morbidities, such as obesity, diabetes and cancer.

This report will first examine heart health strategies and public-health policies. It will then look at the adoption of best practice and integrated care. Finally, it will provide an outlook on the key issues for policymakers. The Appendix includes a description of the methodology behind our heart health scorecard as well as an infographic summarising the scorecard's key findings.

⁵ European Heart Network and European Society of Cardiology, European Cardiovascular Disease Statistics: 2012 edition, September 2012. Available at: http://www. ehnheart.org/component/downloads/ downloads/1436

⁶ N Azad and G Lemay, "Management of chronic heart failure in the older population", *Journal of Geriatric Cardiology*, 2014 Dec; 11(4): 329–337.

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CHAPTER 1 HEART HEALTH STRATEGIES AND PUBLIC-HEALTH POLICIES UNDER THE SPOTLIGHT

One of the key difficulties in addressing heart disease is the absence of detailed strategic plans for promoting heart health. A strategic plan for heart health is a national disease programme/strategic plan to guide the control of heart diseases at national level, with the intended actions to achieve the goals of a given programme.⁷ Although 71% of the countries in the scorecard have developed a strategy or national plan, only 15% of these plans are fully comprehensive, and none of the participating countries has a disease-specific plan in place (see chart 2).

The lack of an overarching vision of heart health makes it more difficult for policymakers to understand the complexity of heart disease and how it relates to other chronic conditions, and to budget accordingly for prevention and treatment. At the same time, the absence of disease-specific plans is likely to make it more difficult to collect data on individual heart diseases and treatment outcomes. Health systems can take lessons from the North Karelia experience in Finland (see below), for example, about the importance of comprehensive, detailed public-health programmes to both reduce disease prevalence and collect data on patients that can be applied to prevention and treatment programmes.

Chart 2



Note: The scorecards assessed 28 countries in total.

Source: Economist Intelligence Unit, Heart Health Country Scorecards.

⁷ WHO, Health Systems Strengthening Glossary. Available at: http://www. who.int/healthsystems/hss_glossary/en/ index7.html

Major gaps in strategic plans

Eight of the 28 countries surveyed have no strategic heart health plan of any sort; of these, five are in Europe (Austria, Belgium, Finland, France and Germany), the others are Egypt, Nigeria and Saudi Arabia. Moreover, an additional four countries have not updated their plan in the last five years. There is significant variation in the extent to which the strategic plans that do exist outline how policymakers should implement awareness-raising campaigns, primary or secondary prevention, diagnosis, treatment, multidisciplinary teams or cardiac rehabilitation. Finally, the majority of plans reviewed fail to include the input of patients and caregivers, or in some cases even patient-specific outcome objectives. Only a handful describe in detail how the plan will be implemented, monitored and funded.

In terms of scope, only three countries (Canada, Russia and the US) have a fully comprehensive strategic plan, that is, a plan which addresses historical patient numbers and estimates future trends in patient numbers; focuses on access to innovation; and includes at least three of the following elements: awareness-raising campaigns, primary prevention, secondary prevention, diagnosis, treatment, multidisciplinary teams and cardiac rehabilitation.

There are also limitations regarding the goals identified in most plans, with many listing only objectives for treatment pathways, rather than for outcomes as defined by patients. Only five countries (Korea, Portugal, Spain, the UK and the US) get top marks in this category for giving patients/caregivers a role in the development of outcome objectives.

"We have 53 member countries and cover a large geographical area, including central and eastern Europe and North Africa, but what is very striking is that even within western and central Europe you have variation," says Peter Kearney, the head of advocacy for the European Society of Cardiology (ESC) and consultant cardiologist at Cork University Hospital in Ireland. "Basic [cardiac] management principles apply and need to be in place to a varying extent, but when it comes to a plan being meaningful for a given country, it must be tailored."

A 2009 report from the European Heart Network, a Brussels-based alliance of heart foundations and cardiovascular patients' organisations throughout Europe, outlined a suggested model for the key elements of a comprehensive national strategy, including identification of the scale of the problem, goals to be achieved within a specific timeframe, consideration of policy options, commitment of resources, and a detailed action plan identifying population groups and action points. The model also includes elements for developing and implementing the strategy, developing and endorsing guidelines and standards for practice, progress reports, monitoring and public reporting and accountability.⁸

⁸ European Heart Network, Cardiovascular disease prevention in Europe - the unfinished agenda, September 2009, p. 28. Available at: http://www.ehnheart.org/component/ downloads/downloads/696 A number of low- and middle-income countries (India, Romania and Russia), along with comparably less wealthy European countries (Poland and Greece), get the top scores for providing strategic plans with timeline, monitoring and budgets. Yet in many cases, implementation falls short of the mark. Ioana Ursu, director and founder of Mapping Health, a consultancy based in Romania, notes that despite a stated commitment to reducing cardiovascular disease in her country, the government has often failed to back policy commitments with earmarked funding; similarly, efforts to develop guidelines are often delayed by internal bureaucracy, she says.

Dr Ursu, who was state secretary for health in Romania's Ministry of Health until December 2016, observes that although her country's ranks compare well with those of other medium-income countries examined in the scorecard, this is more attributable to Romania's decision to build infrastructure than to a willingness to "take a systemic approach to cardiovascular disease". Although the country has built new CVD units in three major cities with support from public-private partnerships, guidelines and protocols for treating heart disease lag behind, as does the establishment of disease-specific plans, she adds, making it even more difficult to gather information about its impact. "How can you monitor something you haven't started measuring?"

In some cases, the division of policymaking and budgetary responsibilities between strategy-making bodies and public-health services can make implementation more difficult. In the UK, for example, the gap between strategy and practice is due in part to the fact that "organisations responsible for establishing direction and what would be ideal are not always the same ones as those charged with implementing it and actually bearing the cost of it", says Huon Gray, national clinical director for heart disease at the National Health Service (NHS) England.

NHS England signed up to a new CVD Outcomes Strategy (CVDOS) in 2013. However, owing to major organisational changes within the NHS the strategy was not implemented in its entirety, although a diabetes prevention programme was introduced. The CVDOS did emphasise the importance of seeing CVD as a single condition with multiple clinical expressions, according to Professor Gray.⁹ He explains: "National priorities are now focused on implementing the [NHS] Five Year Forward View (5YFV), a document that a number of organisations, including NHS England and Public Health England, have jointly produced. This places a great emphasis on prevention of disease and, as such, includes a focus on CVD risk factors. If you go through CVDOS, a number of its action points are relevant to priorities in the 5YFV, but CVD objectives are not articulated as a unified strategy. Whether the different elements of the strategy have or have not been implemented is dependent on a range of different factors, including financing and differing local priorities."

In the US, where the health system is more fragmented, a number of heart plans exist simultaneously, according to Mark Huffman, assistant professor of preventive medicineepidemiology at Northwestern University Feinberg School of Medicine in Chicago, as ⁹ NHS England, National Service Framework for Coronary Heart Disease, March 2000. Available at: https://www. gov.uk/government/uploads/system/ uploads/attachment_data/file/198931/ National_Service_Framework_for_ Coronary_Heart_Disease.pdf well as senior programme adviser to the World Heart Federation for its Emerging Leaders presidential initiative. These plans include, but are not limited to, Healthy People 2020 by the US Centres for Disease Control and Prevention (CDC), the American Heart Association's 2020 Strategic Impact Goal, the National Forum for Heart Disease and Stroke Prevention's Public Health Action Plan,¹⁰ the National Salt Reduction Initiative,¹¹ as well as the National Physical Activity Plan and Go Red for Women, both by the American Heart Association.^{12,13,14}

Gaps in implementation are largely down to the way in which the US handles health in general, Professor Huffman says. "Is it a commodity or a right? Who is responsible for it? Some of these things may not be the responsibility of just one organisation."

Meanwhile, several of those interviewed say the EU has no overarching strategy for heart disease, let alone an EU-wide approach tailored to specific heart diseases. "We have worked on EU co-funded projects addressing cardiovascular diseases," says Susanne Logstrup, director of the European Heart Network in Brussels. "However, the European Commission has made it clear that they don't want disease-specific approaches; this is somewhat contradicted by the strong EU focus on cancer. We think that it would make sense to add specific EU activities on cardiovascular diseases, building on the experience with cancer. After all, cardiovascular diseases remain the first cause of death in the EU—49m people live with these diseases, which comes with a price tag of €210bn to the EU economy."¹⁵

Public-health policies in place, but not fully effective

With or without strategic plans for heart health, prevention is a crucial element of the response to the growing disease burden—and public-health policies are instrumental for prevention. "The epidemiological data on decline in premature mortality from CVD in high-income countries show that this is primarily attributed to primordial prevention [prevention of risk factors themselves], but also to primary and secondary prevention directed at patients," says David Wood, Garfield Weston professor of cardiovascular medicine at the International Centre for Circulatory Health at Imperial College London.

Countries in the scorecard are generally doing well in terms of public-health campaigns on the most important risk factors for heart health, although few have run focused heart health campaigns. The vast majority (82%) of countries have public-health policies on the most important risk factors for heart health, namely tobacco use, physical activity and healthy diets. Only Austria (tobacco use, physical activity), Egypt (physical activity, healthy diets), France (tobacco use), Nigeria (all three areas) and Romania (physical activity) have gaps in their respective policies.

Yet there is much more variation in the extent to which countries assessed in the scorecard run awareness campaigns specifically directed at major heart diseases. In fact, only one-quarter of them—Canada, Finland, Poland, Portugal, Romania, Russia

¹⁰ National Forum for Heart Disease and Stroke Prevention, The Public Health Action Plan to Prevent Heart Disease and Stroke. Available at: http://www. nationalforum.org/content/publichealth-action-plan-prevent-heartdisease-and-stroke)

¹¹ City of New York, Sodium Initiatives. Available at: https://www1.nyc.gov/ site/doh/health/health-topics/nationalsalt-reduction-initiative.page#nationalsalt-reduction-initiative

¹² CDC, Healthy People 2020. Availableat: https://www.cdc.gov/dhdsp/hp2020.htm.

¹³ American Heart Association, "National Physical Activity Plan aims to get Americans moving again", April 20th 2016. Available at: http://news. heart.org/national-physical-activityplan-aims-to-get-americans-movingagain/

¹⁴ American Heart Association, "Go Red for Women". Available at: https://www. goredforwomen.org/

¹⁵ European Heart Network, European Cardiovascular Disease Statistics 2017. Available at: http://www.ehnheart.org/ cvd-statistics.html and the US —have run focused heart health campaigns for one or more specific age group as well as for health professionals (see chart 3).



Source: Economist Intelligence Unit, Heart Health Country Scorecards.

Although many countries have programmes in place to confront risk factors for heart disease, such as smoking or obesity, most have further work to do to on primary prevention. The European Society of Cardiology (ESC) has carried out three surveys entitled EUROASPIRE (European Action on Secondary and Primary Prevention through Intervention to Reduce Events), with a focus on lifestyle and risk-factor management and the use of therapies in cardiac patients and at-risk populations in Europe. The survey showed an enormous gap between the standards specified in the guidelines and the level of preventive care. A 2011 article summing up the results of the surveys concluded that "risk-factor management in patients with coronary heart disease and those at high risk of developing CVD in Europe is far from optimal".¹⁶

In Portugal, for example, less than 3% of the general budget for health goes to publichealth programmes, according to Ricardo Baptista Leite, a physician and member of the Portuguese parliament. This amount is divided into 11 separate disease areas, funded through the country's lottery programme. "Despite the fact that cardiac disease is the main cause of death in Portugal and we have one of the highest incidences of stroke, we invest very little in public health," he says, noting that cardiac diseases received just €300,000 in 2015, compared with around €7m-8m for HIV/AIDS. "Both are insufficient, but if you look at mortality and morbidity associated with heart disease, giving €300,000 is close to doing nothing."

¹⁶ K Kotseva, "Lessons from EUROASPIRE I, II, and III surveys," *Heart Metabolism*, 2012; 50:32-35.

Major differences in performance in specific CVD areas often highlight the key role of primary and preventive care. Portugal performs well in the area of coronary heart disease, where there are public education programmes emphasising the importance of recognising heart attacks and getting emergency care for patients within two hours, according to Paulo Nicola, an epidemiologist at the University of Lisbon and former consultant to the deputy secretary of state of the minister of health. By contrast, Portugal does less well in terms of stroke, which is in large part due to a huge prevalence of hypertension, much of it not that well controlled, he says.

Countries also need to identify their most pressing public-health problems and ensure that they target them effectively with their prevention strategies, Ms Logstrup says. She notes that in Europe there are big differences, for example in smoking prevalence.

Inconsistent emphasis on the key risk factors for heart disease can undercut progress. In the US, strong efforts to reduce tobacco use contrast with a more muddled approach to food intake, according to Professor Huffman. "Diet remains fraught with lots of disagreement, and we don't have a great surveillance of the food supply at the brand level."

Finland has paid enormous attention to prevention programmes and developing online healthcare portals for patients, leading to a dramatic reduction in mortality over the past 30 years, according to Pekka Puska, director-general of the Finnish National Institute for Health and Welfare at Finland's Ministry of Health. The country introduced the first tobacco legislation in 1970, and by 2014 rates of daily smoking by adults had fallen to 15.4%, from 23% in 2004—well below the OECD average of 19.3%.¹⁷ If trends continue, Professor Puska adds, the smoking rate should be below 5% by 2030.

CASE STUDY A laser-sharp focus on population health: the North Karelia project

An example of the successful use of comprehensive public-health programmes to reduce mortality from heart disease is a project begun in North Karelia, Finland, which has now become a leading reference point for global public-health efforts in the area of cardiovascular disease (CVD).

The North Karelia project was initially developed as a pilot project in 1972 in response to growing public concerns about significantly high cardiovascular mortality rates in eastern Finland. Following the epidemiological model of the Framingham Heart Study in the US and other similar research, Finnish publichealth officials realised that risk factors in the region could only be reduced by focusing on lifestyle changes, especially those related to dietary habits and smoking.

A team of public-health officials, supported by experts from the World Health Organisation (WHO), worked intensively to alter lifestyle habits in the region, leading ultimately to a drop in

¹⁷ OECD, OECD Health Statistics 2016. Available at: http://www.oecd.org/els/ health-systems/health-data.htm population-level smoking, a reduction of blood pressure and cholesterol levels and the adoption of healthier eating habits.¹⁸ at the start of the study, were halved, cholesterol rates dropped and coronary heart disease mortality decreased by 82% for working-age men and 84% for working-age women.^{19,20}

Between 1972 and 2012 adult smoking rates, which had been over 50% for men

Meanwhile, poorer countries are continuing to struggle with insufficient primary prevention of heart disease, especially where health insurance coverage is fragmented. In Romania, for example, a lack of messaging about healthy eating and exercise has meant that the diet of much of the population is still largely meat-based and high in fat, while lifestyles are increasingly sedentary, Dr Ursu says, leading to high levels of obesity and hypertension. Escalating pressures on the primary-care system are exacerbating the problem. "The burden of diseases has not really been measured in Romania for the last 20 [years]. Policy needs to be streamlined and priorities set. There is an institute for public health under the ministry, but realistically, they can't initiate legislative measures."

One criticism levelled at EU institutions is the lack of an overarching policy for heart disease prevention that includes an emphasis on cardiac rehabilitation, among other measures. "We've had some success in engaging with the EU to promote better preventive policies," says Dr Kearney. "But it's very fragmented; there are no high-level initiatives that have taken off." As a result, he says, many areas of primary prevention, including tobacco control and food policy, are managed at the national level.

According to an EU source, the Commission does not help to shape specific strategies on single diseases but supports member states as they work to tackle chronic diseases and disorders, including heart diseases. "The role of the Commission is to support member states where the EU added value is highest. For cancer, for example, EU value lied in screening guidelines for particular cancers."

Identifying who is most likely to be at risk for heart disease, meanwhile, is a major challenge for health systems and is in large part dependent on income. "If you were to screen and pick up all of those people, you would face an enormous burden in terms of treatment and drugs," says Professor Wood, who is principal investigator for the EUROASPIRE surveys. "It would make sense to set a much higher threshold, which matches your ability to treat those patients. National adaption is essential."

Better auditing and monitoring of how countries keep to guidelines is needed, Professor Wood adds. "Even in the UK, we have a long way to go in providing optimal preventive care. We are identifying people as high-risk at a 20% level. The management of that risk is comparatively poor."

18 Р Puska, E Vartiainen et al. "Background, Principles, Implementation, and General Experiences of the North Karelia Project", Global Heart, 2016 Jun;11(2):173-8.

¹⁹ A Heloma and P Puska, "Tobacco Control from North Karelia to the National Level", *Global Heart*, 2016 Jun;11(2):185-9.

²⁰ P Jousilahti, T Laatikainen et al, "40year CHD Mortality Trends and the Role of Risk Factors in Mortality Decline", *Global Heart*, 2016 Jun;11(2):207-12.

CHAPTER 2 A FOCUS ON BEST PRACTICE AND INTEGRATED CARE

As we have seen in Chapter 1, there are clear gaps in the extent to which countries around the world are taking a strategic view of heart health and address risk factors to prevent heart disease in the first place. Those interviewed for this paper generally agree that while health systems looking to lessen the burden of heart disease must adhere to best practices and guidelines, there is no one policy or set of policies which apply across all countries. "In terms of pathophysiology, disease behaves pretty much the same across the globe, and an inter-heart study found that all of the classical risk factors are important everywhere," Dr Kearney observes.²¹ He points out, however, that approaches to heart health—and in particular the use of device therapy—are influenced by both the structure of the health system in an individual country and by the financial resources available to policymakers.

This chapter focuses on how countries approach clinical best practice, access to care, resources dedicated to heart health, and placing the patient at the centre of care. As we will see, there are major disparities in the provision of service, adherence to best clinical practice, and the extent to which patients are involved in managing their own care. To some extent, this is due both to structural differences between health systems and to inequities in financial resources.

These disparities contribute to a lack of integrated pathways for patients with some heart diseases, the inefficient use of financial resources, and the challenge of achieving patient compliance and self-management among heart disease patients. To overcome these challenges, creating multidisciplinary teams for cardiac care should be a priority for more developed healthcare systems. They should also strive to make sure cardiac rehabilitation programmes are in place, and that all eligible patients are referred to them. In less developed systems, which face workforce issues, there should be a greater emphasis on monitoring and auditing to determine where gaps in service exist, and to help to collect more information that can provide the basis for investment decisions. Many countries continue to struggle with coverage and high levels of out-of-pocket expenditure; putting a greater emphasis on primary and preventive care is likely to be a good use of scarce funds.

Problems with integrated care

Our heart health scorecard indicates particular variations when it comes to the existence of multidisciplinary care practice, with all of the low-income countries and four of the middle-income ones examined in this study failing to provide integrated pathways or multidisciplinary teams for any heart conditions.

²¹ S Yusuf, S Hawken *et al*, "Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study", *The Lancet*, 2004; 364: 937–52. The lack of sufficiently integrated care pathways, or the existence of integrated care for only certain heart diseases, is a major obstacle to better heart health in many countries, especially lower- and middle-income countries included in our study. The lack of multidisciplinary care pathways has a number of consequences: it makes it more difficult to practice secondary prevention in those patients who have already experienced a cardiac event; it increases the likelihood of repetition, duplication of treatment and delays in getting care; and it makes it more difficult to gather and share information on treatment outcomes.

Many of the imbalances detailed above make it more difficult to create fully integrated care pathways across all disease areas, although nearly two-thirds of the countries in the scorecard—including all OECD countries with the exception of Greece, the US and Turkey—provide integrated pathways for one or more types of heart disease. By contrast, most of the low- and middle-income countries have no multidisciplinary pathways at all.

There is a similar division in the area of monitoring and auditing (see chart 4). Most European countries possess monitoring systems (eg, registries) for all specific heart diseases; a disease registry is a tool for tracking the clinical care and outcomes of a defined patient population.²² By contrast, developing countries, with the exception of China, Russia and Turkey, have either no monitoring system in place or systems for just one heart disease. But overall only around one-fifth of countries have a monitoring system in place for all heart diseases covered in the scorecard (ie, at least one for coronary heart disease, arrhythmia and heart failure).

And even in the US, which has been a model for many of the best-practice guidelines adopted by the global community for the prevention and treatment of CVDs, the process of maintaining a comprehensive surveillance and systemic review of all clinical guidelines remains a challenge, Professor Huffman says.

> ²² Agency for Healthcare Research and Quality, Computerized Disease Registries. Available at: https://healthit. ahrq.gov/key-topics/computerizeddisease-registries

Chart 4

Existence of national or regional monitoring systems, such as disease registries on heart diseases



However, even the countries with the most advanced auditing processes are struggling owing to pressures on funding. According to Professor Puska, national monitoring, in terms of clinical services, is more problematic, with money tight in Finland's public health service.

Several of those interviewed suggest that a move towards specialist heart centres, which has been debated in the UK, for example, could help to accelerate the delivery of more integrated care. "So far you haven't seen many initiatives to build networks around expert centres," says Dennis van Veghel, director of the Dutch Meetbar Beter Foundation, a charity which aims to improve transparency and quality of care for patients with heart diseases. "It would be very good to have hospitals concentrate on more specialised care and on investing in knowledge and spreading and sharing through a network."

Mark Dancy, a consultant cardiologist with Imperial Healthcare NHS Trust in the UK, notes that heart-failure patients frequently end up in hospital, where they are stabilised by one set of doctors who do not know them (heart-failure teams are too small to cover emergencies), and if they are readmitted, they are often under a different team, so the same mistakes are made repeatedly. "If you have the same team, they know [individual patients] don't tolerate a certain drug well."

To be sure, integration covers prevention as well as treatment, says Ms Logstrup at the European Heart Network. She adds that having a population trained to do cardiopulmonary resuscitation (CPR) and a well-organised ambulance service able to reach people quickly is also crucial to and part of good care.

Weakness in access, provision and funding

Access, provision and funding are among the weakest areas for the countries in the scorecard.

Less than one-half of the countries surveyed implement clinical guidelines on cardioprotective interventions or provide early access to new drugs or medical devices where there is an unmet need. In general, emerging economies in the survey dedicate fewer resources to heart health than developed countries.

In just under one-half of the 28 countries in the scorecard at least 20% of all health expenditures were out-of-pocket; in lower-middle income countries, such as India, Egypt and Nigeria, out-of-pocket expenditures were equal to more than half of all spending, while in other emerging markets, such as Mexico and Russia, more than 40% of expenditures were not publicly financed (see chart 5).

Chart 5





Source: World Health Organisation, Global Health Observatory (GHO) data, 2014.

Perhaps in part as a result of high levels of out-of-pocket spending, coverage of recommended care pathways, such as cardioprotective interventions (based on national clinical guidelines on the prevention and treatment of heart disease) and cardiac rehabilitation (including components of health education, advice on cardiovascular risk reduction, physical activity and stress management), is patchy. Just ten countries (Austria, Belgium, Canada, France, Italy, Japan, Korea, Portugal, the UK and the US) make provisions for the full implementation of national clinical guidelines for cardioprotective interventions. And just nine countries (Austria, Austria, Belgium, France, Germany, Ireland, Italy, Mexico and the UK) not only have cardiac rehabilitation programmes in place but also refer a majority of patients to them (see chart 6).

Chart 6



Access is intrinsically linked to the nature of the health system. "The health systems in countries have several aspects that are key to the way they work, whether they are mostly publicly funded or more based on insurance, where people choose the way they wish to access healthcare," says Dr Nicola. "If there is strong primary healthcare that works as a gatekeeper, that is quite different from [a situation in which] people have direct access to the hospital to control their disease."

In the Netherlands, a market-oriented system, in which health insurance purchasing and individual hospital strategic plans largely determine treatment, has complicated the process of standardising heart health, according to Dr van Veghel. "Diagnostic catheterisations are performed in all hospitals," he says. "Now insurance companies are talking about performing them only in hospitals where they perform percutaneous coronary interventions (PCIs)—a non-surgical procedure to unblock clogged arteries. Concentration and specialisation can be expected."

By contrast, neighbouring Belgium, whose population is only two-thirds the size of that of the Netherlands, has twice the number of heart and PCI centres. If the Dutch government had a strategic plan in place, it might find it easier to make changes in healthcare delivery, rather than insurance companies attempting to use purchasing to push the market in that direction, Dr von Veghel adds.

He notes, however, that the Netherlands has made strong progress in moving towards value-based healthcare based on transparency and patient-oriented healthcare delivery, with almost all centres in the country currently publishing outcomes relevant to patients.

Ms Logstrup points out that the economic realities vary significantly across regions. "While of course it helps to be a rich country, you can provide good care even if you are not a wealthy country, but you have to plan and make sure people have access to the appropriate service at the right time." She observes that cardiac rehabilitation should be seen as cost-effective, given that there is good evidence it prevents secondary cardiac events, keeps people from ending up in hospital and helps patients return to work. She adds that rehabilitation programmes should be organised in a manner convenient for patients so that they do not need to travel too far, for example.

In countries such as Romania, the lack of access to cardiac rehabilitation is connected to the fact that access to innovative drugs and surgical interventions is slower than in other European countries, in large part owing to bureaucratic delays in getting innovative products on approved lists, Dr Ursu says. Dr Kearney agrees that although cardiac rehabilitation is "really valuable and hugely appreciated by patients, it is patchily applied".

The use of expensive devices for secondary prevention and treatment, such as cardiac rehabilitation, is one of the areas where gaps persist. Dr Nicola notes that health "was quite protected in Portugal during the economic crisis", although he acknowledges that factors outside the health system, including unemployment and other stresses, no doubt affect public health.

In lower-income countries, secondary prevention may be too expensive to use as standard. Dr Kearney says that treatment for cases involving aortic valve replacements usually costly transcatheter aortic valves—"are a struggle even in western Europe".

In Romania, access to devices used in heart transplants—which can cost up to €1m has traditionally been limited because of their high costs, Dr Ursu says. "Most devices are very expensive, so what happens is you have a model where [the manufacturer] gives you the device and you are paying for the usage of it." A patient's ability to access a new technology will often depend on the physician they see, with one physician/ manager frequently having exclusive access to the use of a machine, which increases the scope for corruption.

Access to appropriate care is often undermined by deficits in primary care. For example, Greece suffers from an underdeveloped and fragmented primary-care system, in which a UK-style national health service introduced in the 1980s co-exists with a German-style social-insurance system and a significant private sector, says Nikos Maniadakis, professor of health services organisation and management at the National School of Public Health in Athens. With out-of-pocket financing that exceeds one-third of total expenditure, the system is also underfunded. "People with CVD are managed to a large extent in the community setting, and if you don't have very good primary-care services integrated with secondary ones, it's very difficult to implement good pathways and guidelines," he says. "People use the [hospital] system more because there is no gatekeeping."

The situation is similar in some wealthy Asian countries, which tend to be better at tertiary than primary care, with a general lack of awareness of chronic disease among both doctors and patients and a continued reliance on the fee-for-service model of medicine, says David Sim Kheng Leng, senior consultant at Singapore's National Heart Centre. "Singapore has done very well in the setting of acute medicine. But the management of chronic diseases such as diabetes and heart failure is still suboptimal. Doctors tend to avoid managing chronic illness such as heart failure and prefer to do more intervention procedures such as coronary stenting [due to a big difference in salary]."

Secondary and tertiary heart healthcare has also been under pressure—often for financial reasons. Several of those interviewed observe that heart health indicators slipped in many European countries during the financial crisis, especially in EU member states such as Greece, Portugal and Spain, where the direct effects of the global financial crisis were combined with the pressure of the knock-on effects of financial bailout agreements with multinational institutions following the sovereign debt crisis. This is particularly true for indicators of access to care. "We see that unmet need has been going up in recent years, and things have been getting worse, but actually this unmet need, which has do to with access issues (waiting lists, financial and geographical barriers and restrictions to the provision of care) have been there before, and have been exacerbated significantly as a result of the crisis," says Professor Maniadakis.

He notes that although the budget of Greece's National Health System (ESY) has stayed constant as a percentage of GDP, at about 9% in recent years, the 30% drop in GDP over that time means that public expenditure on health has fallen to around €12bn, from €17bn in 2009.

Not surprisingly, access to innovation is another area that appears to be linked closely to economic development. The only countries with no expedited regulatory approval programmes for innovative drugs and devices relevant to heart disease patients when there is an unmet medical need are three lower-middle-income countries, Egypt, India and Nigeria, two upper-middle-income countries, Mexico and Turkey, and only one high-income country, Saudi Arabia. By contrast, the highest-scoring countries in this category—those that do not only have specific regulatory processes or expedited regulatory approval but also other mechanisms in place that allow for early access to drugs and technologies in the presence of unmet medical need—are all high-income countries.

In many parts of Asia as well, funding constraints mean that most patients cannot afford evidence-based treatment, according to Professor Sim.

Sometimes innovations face obstacles from insurance companies. In the Netherlands, some treatments are paid for only after they have been approved by the government, according to Dr van Veghel. As a result of politics and restricted purchasing by insurance companies, some procedures, such as left-ventricular assist device heart-valve replacements and transcatheter aortic valve implantations are performed far less often in the Netherlands than in Germany, for instance, Dr van Veghel says.

Finally, as far as human resources dedicated to heart health are concerned, there are huge variations between the countries assessed in the scorecard. High-income countries tend to be able to dedicate more human resources to heart health (see chart 7). However, this does not necessarily go hand in hand with other areas of access and provision. For example, although Greece leads in terms of the number of cardiologists per 100,000 population, it receives relatively weak scores for financial support, cardioprotective interventions, cardiac rehabilitation and access to innovation.

Chart 7



Note: Numbers for Austria are not available because cardiology is an internal medicine specialty in the country. Sources: European Society of Cardiology, Eurostat, journal literature, health ministries, national medical associations or cardiological societies.

Patient focus remains a work in progress

Countries assessed in the scorecard generally have work to do in the domain of patient focus. A majority of countries have patient advocacy organisations to promote heart health and provide patient education programmes, but only 11% employ relevant health status surveys, and just 25% of those surveyed use e-health to deliver care and to collect patient data.

Only three of the 28 countries surveyed (Finland, Korea and Mexico) have specific CVD or heart disease-specific patient health surveys in place in clinical practice.

Countries generally perform better in the area of patient health literacy, with all but the three poorest countries (Egypt, India and Nigeria) having such programmes in place and 12 countries fulfilling the highest standard of delivering self-management-focused programmes co-ordinated by healthcare personnel.

There is an especially wide discrepancy in the area of patient advocacy. Five countries of varied income levels have very little patient advocacy or none at all for heart health (China, Poland, Russia, Saudi Arabia and Turkey). Although Egypt has recently seen the establishment of an Egyptian Association for Care of Heart Failure Patients, the

organisation had been active for less than a year at the time of writing.^{23,24} However, 15 countries get the highest score in this category as they do not only have patient advocacy in place, but their patient advocacy organisations also collaborate with government and/or national health organisations to promote heart health.

Strong patient advocacy is one important way to boost patient involvement in heart health. "In those countries where you have strong organisations, heart foundations or specific cardiovascular patient organisations, you will probably see that there will be more of an involvement of patients in certain debates about healthcare policy," says Ms Logstrup.

One factor potentially undermining the role of patient advocacy groups is the fact that they are often heavily funded by industry, Dr Kearney observes. "As such, we aren't sure they are the right entities for us to be talking to, but unless we talk to them, they will look for support wherever they can get it."

And despite the impact of heart disease on individuals and the wider society, given the typical age for the onset of the condition and its symptoms, cardiac patients are often less likely and less able to organise than those suffering from cancer, for example, and many infectious diseases. In Portugal, notes Dr Baptista Leite, "CVD has a far lower profile than other illnesses, such as rheumatoid arthritis and HIV/AIDS. Despite the epidemiological burden of heart disease in our country, this hasn't translated into patient movements and patient associations." This is probably in part attributable to the relative frailty of those living with cardiac conditions, he adds, as well as the fact that the main risk factor for strokes and heart attacks is hypertension, which is frequently a "silent disease".

Much depends on the co-operation between different healthcare stakeholders. "The situation differs a lot between hospitals, and between patient organisations and patients themselves," says Hans van Laarhoven, manager of the patient advocacy team at De Hart & Vaatgroep, a Dutch organisation for heart disease patients. "It depends on how willing they are to invest in engagement and involvement. I think in the Netherlands there is quite a level playing field between healthcare professionals and patients, maybe more so than in other European countries." He points to a healthy skepticism of authority on the part of Dutch patients. There are some 400 patient groups in the country, ranging from a few volunteers to larger organisations employing up to 30 people.

Yet, despite these efforts, even Mr van Laarhoven acknowledges that there are only a limited number of patients truly involved in decision-making."There are still many healthcare professionals who are not interested in patient involvement. Shared decisionmaking in practice is still very low. Many patients don't even want to be involved in decision-making because it brings some obligations—changing liflestyle, taking medicine on time, etc." ²³ iHHub, Egyptian Association for Care of Heart Failure Patients. Available at: http://www.ihhub.org/membersarea/resource-centre/organisations/ egyptian-association-for-care-of-heartfailure-patients/

²⁴ "Patients speak out at launch of first Egyptian heart failure association", Ahram Online, April 4th 2016. Available at: http://english.ahram.org.eg/ NewsContent/7/48/198699/Life--Style/ Health/Patients-speak-out-at-launchof-first-Egyptian-hea.aspx Nonetheless, the ways in which patients engage in healthcare are changing dramatically, and this is likely to have an impact on the focus on patients. In the US, the leading primary healthcare provider is arguably the pharmacy and healthcare chain Walgreens, Professor Huffman observes, because there are more Walgreens outlets than conventional providers in low-income neighbourhoods, and more than 80% of the US population live close to a store.

Innovations in technology are also enhancing patient self-care while occasionally adding to more pressures on physicians, Professor Huffman adds. E-health and self-management are being used in many parts of the world to empower patients with CVD, but just seven countries examined in the scorecard (Australia, Austria, Canada, Finland, Mexico, the UK and the US) use information and communications technology (ICT) both to deliver care (eg, telemedicine) and to collect patient data (eg, home monitoring) in the heart health space (see chart 8).

Chart 8

The use of information and communications technologies (ICT) to enable better delivery of care and patient experience for people living with heart diseases _____



Percentage of countries without regular use of ICT technologies (e-health) for heart health

Percentage of countries where electronic health records have been implemented by the government or the major system provider(s) in the country

Percentage of countries where electronic health records have been implemented by the government or the major system provider(s) in the country and ICT methods for delivery of care are used (eg, telemedicine)

Percentage of countries where electronic health records have been implemented by the government or the major system provider(s) in the country and that use ICT methods for both delivery of care (eg, telemedicine) and collecting patient data (eg, home monitoring)

Note: The scorecards assessed 28 countries in total. Source: Economist Intelligence Unit, Heart Health Country Scorecards. "Things are changing so fast in terms of expectations and the ways we communicate with our patients, and I think the system hasn't quite caught up," notes Professor Huffman. "Patients love emailing, but it's hard to keep up with—how do you make sure practitioners don't spend more time clicking away than talking?"

Although patient self-management schemes can be valuable, Dr Dancy says, they "need to be very much tailored to the interest and intelligence of the patient". He adds that because of the complexity of the condition, heart-failure patient protocols are more difficult to design than protocols for patients with cancer, diabetes or other cardiac conditions, such as atrial fibrillation and coronary artery disease. As a result, most heart-failure patients in the UK see nurse specialists.

Cultural factors can also inhibit efforts to make patients more responsible for their care. In Asia, Professor Sim notes, doctors are still accustomed to a "parenting style" of medicine, and patients tend to leave the decisions to their physician.

Even in Europe, Ms Logstrup observes, many doctors still believe they "know more" about cardiac conditions than their patients and therefore do not need to seek their input. The European Heart Network has published a Patients' Charter that calls for a number of commitments on the part of healthcare providers, among them that providers ensure that patients fully understand the nature of their diagnosis and all medical consequences, and that they be kept informed about all developments related to their condition, including the benefits of rehabilitation; that patients have "wide access" to healthcare professionals for any questions about treatments and their risks; that eligible patients have access to rehabilitation as well as help to return to live in their own homes afterwards, if they prefer; and that patients themselves have an obligation to comply with all treatments and medication and report promptly to medical or nursing staff any changes in their medical condition.²⁵

Some of the European Heart Network's patient groups have also been engaging in research, helping to design protocols so that the research achieves patient objectives as well as looking for ways to ensure that patients not only agree to be enrolled in clinical trials but stay involved.

In developing countries, meanwhile, technology is increasingly being used in ways that higher-income countries can learn from, those interviewed say. In India, some doctors communicate via WhatsApp, which allows junior doctors to share electrocardiogram results with supervisors, an approach that might come up against privacy concerns in the US and many European countries, Professor Huffman suggests.

Health systems in Europe and North America appear at least to be recognising the value of organising prevention, diagnosis, treatment and care around cardiac patients themselves. Yet efforts to increase the active involvement of patients in their own treatment, and of patient organisations in the formulation of policy, are clearly in the early stages in these regions and not yet on the agenda elsewhere in the world.

²⁵ European Heart Network, EHN Charter for European CVD Patients. Available at: http://www.ehnheart.org/patients/ charter/publication/556-ehn-charterfor-european-cvd-patients.html

CHAPTER 3 LOOKING AHEAD: KEY ISSUES FOR POLICYMAKERS

The ability of countries around the world to build on advances in heart health and continue to reduce mortality and morbidity will depend in large part on the ability of governments and health systems to get to grips with several crucial challenges: the capacity to translate gains in life expectancy into an extension of healthy life years for elderly populations, which are growing larger in most countries; better integration of care to help manage heart failure and other heart conditions, in part through better delivery of primary care; and a stronger focus on patients.

Both the UN high-level meeting on NCDs and the WHO Global Action Plan to achieve a 25% reduction in NCDs by 2025 include lifestyle targets and other risk-focused targets, according to Professor Wood. He adds that the UN is due to report back in September 2018 about the extent to which national governments have developed their own plans. "The high-income countries are more advanced, and the middle- and low-income countries are where the challenge is greatest for cardiovascular disease across the spectrum. The overall message was that progress is slow."

The pressure will be heaviest on health systems in middle- and lower-income countries, which are still coping with infectious diseases such as HIV/AIDs and tuberculosis while facing the growing challenge of chronic diseases. For example, guidelines for heart health, already well established in high-income countries through organisations such as the European Association of Cardiology, will need to be carefully tailored for countries with scarcer resources, says Professor Wood, noting that in lower-incomes countries "guidelines developed in Europe or the US are simply adopted even though they may not be appropriate".

Individual governments, meanwhile, are looking at reorganising the ways in which they deliver cardiac care, such as in the Netherlands, where there are talks about overriding local decision-making in favour of establishing a national health fund to decide how, where and what kind of healthcare can be delivered.

All countries will need to make choices about where to invest stretched finances to achieve the greatest good. This is likely to involve a more value-based approach to cardiac care. "There should be a hierarchy of outcomes based on the wealth of the nation," says Paul Heidenreich, professor of medicine and health research and policy at Stanford University in the US and chair of the American College of Cardiology and American Heart Association's (AHA) Task Force on Performance Measurement, the AHA Council on Quality of Care and Outcomes Research and the AHA Get With the Guidelines Steering Committee. "Ideally, all interventions, for example cardiac rehabilitation, would have a value judgment for health gain and cost. Each country would also have a wealth-based value threshold above which they should provide the service."

The most developed health systems have made significant gains in reducing premature mortality and morbidity, but now they need to address the even more challenging problem of improving and extending healthy life years for those who have been living with cardiac conditions for an extended period of time. The establishment of integrated cardiac care networks will make it more likely that patients in these systems will have access to the best care, including cardiac rehabilitation and other interventions that are key to secondary prevention. Health providers should also identify ways of involving patients in their care that will improve quality of life. Policymakers in lower-income countries—many of which are only beginning to see the widespread impact of chronic conditions such as cardiovascular disease—should focus on increased investment in health systems in general, and in primary care in particular.

Increasing healthy life years

For patients who have had an acute heart attack or stroke, comprehensive care can reduce the risk of another event and extend life expectancy, amounting to a "big return on investment" for such interventions, Professor Wood says. The same applies to the management of hypertension and diabetes, although the data are not so strong, he adds. He also notes that if risk factors are managed well, they can reduce the risk of a first event.

Still, Professor Wood warns that it remains to be seen if general practice can deliver high-quality management of chronic diseases. "It's not unusual for an interventional cardiologist or cardiac surgeon to reassure a patient that their problem has been sorted—through grafting or stent—but the disease is ubiquitous and the interventionist has only sorted one part of it."

Professor Gray notes that although England has done well at reducing premature deaths from CVD, "where we are more challenged is to do with issues affecting ageing populations, the large number of people living above 80 and the CVD that goes with that—renal, stroke and heart failure".

Moreover, while the most developed countries have experienced consistent falls in mortality from heart disease over the past few decades, it remains unclear whether money saved from increasing productivity and longer life expectancy for patients with heart conditions is undercut by extended periods of poor health at a later stage of life. "What is rarely taken into account is what happens to patients who are managed appropriately later in life," says Dr Dancy. "If we get things right with patients with coronary artery disease, they will have the privilege of dying of something else."

While average life expectancy for EU citizens was 83.6 years for women and 78.1 years for men in 2014, average healthy life expectancy was just 61.8 years for women and

61.4 years for men, a gap of 21.8 and 16.7 years, respectively, Ms Logstrup points out.^{26,27} Health authorities need to target primordial prevention—such as reducing obesity rates—and identify healthy people with risk factors for heart disease, she says, adding that general practitioners (GPs) are often best placed to do the initial screening for risk factors and speak to patients about how to manage them.

Professor Huffman agrees, noting that as people survive heart attacks, they are more likely to die of heart failure, which is linked to ageing, raised blood pressure, obesity and diabetes. Despite a nearly 40% reduction in global premature mortality from cardiovascular diseases over the past 25 years, he says, the absolute burden of people dying from cardiac conditions has also increased by around 40% over the same period, largely because of population growth and ageing.²⁸ "This supports the rationale for achieving ideal cardiovascular health. The longer you can live healthily, the better you are going to live. You need to have a chance to optimise health throughout the lifespan."

Finland has also had a ten-year increase in life expectancy over the past 30 years, with more than 80% of this attributable to a reduction in heart disease, according to Professor Puska. "We find very clearly that most of these extra years are healthy years," he says.

In Portugal, which is one of the best performers in terms of prevention of years of life lost to coronary heart disease (see chart 9), a lack of satisfactory control over hypertension and other chronic diseases is undermining its performance in prevention and incidence of heart disease, Dr Nicola says. "There has been big attention to educating people and providing emergency care within two hours if they are having heart attacks, but we need better cardiac rehabilitation."

Chart 9





Note: Linear extrapolation using simple average estimates was used to replace missing values of potential years of life lost.

Source: Canadian Institute for Health Information (CIHI), Potential Years of Life Lost (PYLL): International Comparisons. Available at: https://www.cihi.ca/en/health-system-performance/per-formance-reporting/international/pyll

²⁶ Eurostat, Mortality and life expectancy statistics. Available at: http://ec.europa.eu/eurostat/statisticsexplained/index.php/Mortality_and_ life_expectancy_statistics

²⁷ Eurostat, Healthy life years statistics. Available at: http://ec.europa.eu/ eurostat/statistics-explained/index. php/Healthy_life_years_statistics

²⁸ GA Roth, MH Forouzanfar et al, "Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality", *The New England Journal of Medicine*, 2015; 372:1333-1341. Even in wealthier parts of Europe, progress in areas such as heart failure lags behind. "Particularly in heart failure, there are evidence-based treatments in terms of tablets and devices," says Dr Dancy. "You need to get patients access to that and diagnose them appropriately and get them to the right specialist, but there is a lot of contention about how you actually deliver it."

Dr Dancy points out that in the UK there are usually only a few specialists in heart failure in a given community, making it nearly impossible for them to see all of the patients individually. "How do you get the thinking from those [specialists] enacted throughout the community? One way is for everyone to see the specialists, and another is for those specialists to write guidance for other people to enact. GPs, nurse specialists, patient self-management—it doesn't really matter so long as whatever works is accessible to the patient and is done appropriately."

Better integration can help with management of heart disease

One other way to improve outcomes in patient care is to increase the integration of primary and secondary heart care with a focus on patient value, says Dr van Veghel. Thus far, he notes, there have been very few initiatives to build networks in cardiac care with this focus, whereas an example of such a network already exist for Parkinson's disease. Although the Dutch health system is developing networks in heart care in several areas, he says hospitals are still financed based on the number of patients they treat, constraining the development of networks.

More integrated care would help to improve the management of patients. Even wealthier countries, such as Finland, which rank highly on access to heart bypass surgery and other clinical interventions, secondary prevention is a weak point, Professor Puska says. "Cardiac patients spend very little time in the hospital after cardiac infarction. So many of the patients just disappear without proper advice and guidance to cardiac rehabilitation."

In Greece, where mortality rates for heart attack have also been improving as elsewhere in Europe, the use of PCI is not as widespread as it could be, and stroke and heart failure are still major challenges, largely owing to the lack of integrated healthcare delivery.

Professor Puska also agrees that better integration in healthcare delivery is key. "There should be better integration between primary and secondary healthcare. With one integrated system you can better channel patients through the treatments. [Finland is] a digital country, so we have a national health patient system. For providers, it's about trying to get them access to a unified system."

Focusing on primary care and the patient

Better primary care, and especially community care, can help to improve access to data on heart disease, while at the same time increasing patient self-management of their conditions.

"Portugal has one of the best indicators for cardiovascular mortality and quality of life," Dr Nicola observes. "I don't think it is due to any special planning but is due to training and diets, to primary healthcare that is very strong, and to the fact that people have good access to interventions and medications."

This is especially true in an unmodernised and underfunded system, such as that in Greece, says Professor Maniadakis, adding, "you need patient-centric systems, good databases, electronic patient records and IT technologies as the backbone, supporting efficient and evidence-based patient management", all of which are lacking.

Improving patient involvement, especially in self-monitoring of their conditions, can have real benefits in increasing quality of life, Ms Logstrup says. To the extent that mobile and e-health technology can be employed to help to keep older and frailer patients out of hospital, they should be seen as cost-effective, she adds.

Once again, better collection of data will be crucial, and more comprehensive guidelines and disease-specific registers are needed, Dr Kearney says, adding that a group within the European Society of Cardiology is looking at the application of guidelines across the continent as well as focusing on outcomes. "To a remarkable extent, we have a flurry of activity in the delivery of health and minimal assessment in terms of what we do."

The EU, which has helped to establish a European network of cancer registries, has not yet considered the same for cardiovascular diseases, Ms Logstrup observes. She adds that this could be because member states have not asked for it, which again may be because they are concerned about the cost associated with it.

Meanwhile, the importance of continuity of care has been shown to be especially relevant in countries such as Singapore, where a lack of such services in the community after patients are discharged has led to a high readmission rate to hospitals, observes Professor Sim. The government is currently playing catch-up, he says, by building more community hospitals and community-based services to cope with the growing needs of its ageing population.

CONCLUSION

Over the past few decades most parts of the world have made substantial progress in reducing mortality rates from heart disease. However, the CVD burden, in terms of disability-adjusted life years, has risen rapidly on a global scale in recent decades. This trend is expected to continue amid population-ageing, as more people with heart disease will be living longer. A key challenge facing healthcare providers and policymakers, therefore, is how to extend healthy life years.

The Economist Intelligence Unit scorecard has identified major gaps in strategic heart health plans; generally good public-health policies (albeit with a lack of awareness campaigns in some countries); income-related variations in adherence to best practice; weakness in access and provision; and the need to improve patient focus, which remains a work in progress in many countries.

Taking the scorecard results into account and adding key insights from heart health experts, this report has highlighted that while health systems looking to lessen the burden of CVD must adhere to best practices and guidelines, there is no one policy or set of policies that apply across all countries. Efforts to streamline guidelines have been under way, for example by the European Association of Cardiology. But national divergences are often influenced by the structure of the health systems, such as the nature of health insurance, as well as the financial resources dedicated to heart health.

The report has highlighted major gaps in policy on preventive care. The EU, for example, lacks an overarching policy for heart disease prevention that includes an emphasis on cardiac rehabilitation. Surveys have shown an enormous gap between the standard specified in guidelines and the level of preventive care. Priority-setting in funding, execution of public-health programmes and identification of at-risk populations remain issues in many countries. More recognition of the importance of reducing risk factors for heart disease, as well as improving patient focus and care, is necessary. An example of a successful comprehensive public-health programme is the North Karelia project in Finland.

Secondary prevention is also lacking or weak in some countries, with many patients still not getting interventions that are supported by national guidelines. Stretched health systems, even in the wealthiest countries, are exacerbating inequalities both between countries and between patient populations within countries. Even where funding does exist, there can be major issues with service delivery and aftercare—for example a lack of specialists for specific heart diseases and a lack of guidance and advice for cardiac rehabilitation. Patient self-management schemes can be valuable but have to be tailored to the specific circumstances of the patient. Meanwhile, lack of data often makes it difficult to measure both adherence to guidelines and patient outcomes. Looking ahead, the ability of countries to build on advances in heart health and continue to reduce mortality and morbidity will depend in large part on the ability of governments and health systems to get to grips with several crucial challenges. These include the ability to translate gains in life expectancy into gains of healthy life years; progress in dealing with heart failure, where many countries are not meeting best practice; improvements in the delivery of primary care; and a stronger focus on patients. Better co-ordination is needed to ensure more integrated care pathways, to extend expertise and to boost data collection.

APPENDIX

Scorecard methodology for the assessment of policy towards heart health

Definitions

Heart diseases can take many forms, such as coronary heart disease (including heart attack and angina), arrhythmia (including atrial fibrillation) and heart failure.

The five domains of the scorecard are as follows:

1. Strategic plan: existence, scope, objectives and implementation of a strategic plan to guide the control of heart diseases at national level.

2. Public-health policies: existence of operational policy/strategy/action plans to address tobacco use, physical activity, healthy diets and awareness campaigns on major heart diseases.

3. Best practice: combined risk scores for systematic risk assessment for cardiovascular diseases (CVDs); existence of national clinical guidelines on heart diseases; level of implementation of multidisciplinary care pathways for heart diseases; and existence of national or regional monitoring systems, such as disease registries on heart diseases.

4. Access and provision: financial support; level of implementation of national clinical guidelines on prevention and treatment of heart diseases; existence and referral to cardiac rehabilitation programmes for secondary prevention of heart diseases; human resources (number of cardiologists per 100,000 population); and access to drugs and technologies relevant to heart disease patients.

5. Patient focus: use of CVD-specific patient health status surveys; patient health literacy (basic patient education programmes for those with heart diseases); patient advocacy (patient organisations which promote heart health); use of information and communication technology (ICT) to enable better delivery of care; and patient experience for people living with heart diseases.

Methodology

An initial literature review identified key frameworks and programmes that have been previously used to prioritise policy approaches for the prevention and control of heart disease in a range of countries. From this a draft set of indicators was developed. An editorial advisory board was then convened to review and advise on the development of the indicator framework. Out of this process, The Economist Intelligence Unit identified a set of 21 indicators to evaluate each selected country across the five domains.

We researched, assessed and scored the following 28 countries across all 21 indicators: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Egypt, Finland, France, Germany, Greece, India, Ireland, Italy, Japan, Korea, Mexico, Nigeria, Poland, Portugal, Romania, Russia, Saudi Arabia, Spain, Turkey, the UK and the US.

Populating the scorecard

A range of international and national sources were used for the data collection. The Economist Intelligence Unit team and country researchers carried out both primary research (including at least one interview for each country) and secondary research to identify recent authoritative data to populate the country scorecard. Sixteen of the 21 indicators are qualitative in nature, meaning that scores required judgments on matters such as how to define a strategic plan, whether national heart disease awareness campaigns exist, and whether telemedicine is regularly used to deliver care. Judgments were made based on the best information available from the primary and secondary research. Because of the nature of scoring—wherein complex matters are collapsed into simple scores—we note that not all readers will agree with all scores.

Scores for each indicator were normalised to a 0-100 scale to make the indicators comparable across all 28 countries. The country with the highest raw data value scores 100, while the lowest scores 0. Hence, a score of 100 does not necessarily mean perfect policy, but highest raw data value among the countries scored. Likewise, a score of 0 does not necessarily mean terrible policy, but lowest raw data value among the countries scored. Countries can score 0 but still not be ranked 28th because other countries may have the same score; in such cases the equality sign ("=") in the rank highlights that the country shares the rank with other countries.

The focus is not on comparing the total scores between one country and another. Instead, the research in the first place allows countries to compare their individual policies with those of other countries.

INFOGRAPHIC



The Economist Intelligence Unit (EIU) has created a scorecard to help assess the burden of, and policy approaches to, diseases of the heart in 28 countries. Its key finding is that many countries have established strategic plans for heart health, but they are often not sufficiently comprehensive and lack adequate implementation. Other areas with room for improvement include establishing focused heart health campaigns, the need for comprehensive monitoring systems, implementation of national clinical guidelines, access to innovation, and use of health status surveys and e-health.

More details on scope and methodology can be found here: hearthealth.economist.com

🛗 Strategic plan

Although many countries have established strategic plans for heart health, implementation is often weak and few plans are sufficiently comprehensive and address specific heart diseases.



But: only

But: just

health professionals

of countries have developed a strategic plan for heart health

of those plans are fully comprehensive



of countries have disease-specific plans in place

Public-health policies

Many countries have public-health campaigns on the most important risk factors for heart health, but few have run focused heart health campaigns.



of countries have public-health campaigns on the most important risk factors for heart health, ie tobacco use, physical activity and healthy diets have run focused heart health campaigns for one or more specific age groups as well as for

INFOGRAPHIC

Access and provision

Less than half of countries implement clinical guidelines on heart disease and provide expedited access to innovation. In general, emerging economies in the survey dedicate fewer resources to heart health than developed countries.



Best practice

Almost all countries have at least one national clinical guideline for at least one heart disease and more than half provide integrated care pathways, but few have comprehensive monitoring systems.

61%

of countries have guidelines that cover the patient care continuum,self-management and the specific needs of the elderly



provide integrated care pathways for one or more heart diseases But: only 21% Q

have a monitoring system (eg, registry) in place for all heart diseases covered in the scorecard (ie, at least one for coronary heart disease, arrhythmia, and heart failure)

🕂 Patient focus

A majority of countries have patient advocacy organisations to promote heart health and provide patient education programmes, but few employ relevant health status surveys and use e-health to deliver care and to collect patient data.



of countries have patient advocacy organisations collaborating with government and/or national health organisations to promote heart health



of countries routinely use CVD- or heart disease-specifc health status surveys in patient assessments



use information and communications technology both to deliver care (eg, telemedicine) and to collect patient data (eg, home monitoring)

Sources: EIU data searches (national policy documents, literature searches, primary research), European Society of Cardiology, Eurostat, Ministries of Health, national cardiological societies, national medical associations, World Health Organisation.

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