

# Health systems respond to noncommunicable diseases: time for ambition

**Edited by**  
Melitta Jakab, Jill Farrington  
Liesbeth Borgermans, Frederiek Mantingh



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# Abstract

The WHO European Region has made great progress in reducing the burden of noncommunicable diseases (NCDs) by taking intersectoral action and strengthening health systems, two key commitments in Health 2020, the European health policy, and the Sustainable Development Goals. However, there are now opportunities to accelerate the process. This report provides pragmatic and actionable policy recommendations on how to strengthen health systems so that they can respond more effectively to the challenges posed by NCDs. The report is motivated by contextualized and multidisciplinary assessments of health system barriers to tackling NCDs in 12 countries in the WHO European Region. These assessments show that there are opportunities to bring about rapid improvements in NCD outcomes and reduce inequalities through a more comprehensive and better aligned health system response. In addition to the country assessments, the report draws on published literature, good practice briefs and expert experiences. The report focuses on selected areas of health system strengthening, including governance, continuous and integrated delivery of services (public health, primary care and specialist care), people-centredness, the health workforce, financing, medicines and information solutions. It identifies where action can be taken to strengthen the health system response to NCDs, taking account of resource constraints and placing special emphasis on vulnerable populations.

## Keywords

CHRONIC DISEASE - PREVENTION AND CONTROL  
DELIVERY OF HEALTH CARE  
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# Foreword

It gives me great pleasure to present this new report by the WHO Regional Office for Europe, *Health systems respond to noncommunicable diseases: time for ambition*.

The burden of noncommunicable diseases (NCDs) represents one of the major health challenges of our times. These diseases result from fundamental inequities in social and economic determinants of health, in access to timely, high-quality services, in health information, in living environments and in other social factors. In turn, they also act as drivers of disadvantage, leading to intergenerational ill-health and cycles of poverty.

Member States in the WHO European Region have implemented fundamental changes in response to the growing burden of NCDs. We are on the right track, as evidenced by declining rates of premature mortality from noncommunicable diseases. I am very proud that our Region is on track to meet the Sustainable Development Goals (SDGs) related to NCDs by 2030.

However, improvements are not happening fast enough. Projecting current rates, it may take another six decades for countries in eastern Europe and central Asia to reach the premature mortality levels currently seen in western Europe. Given our current knowledge and experience of what works in addressing NCDs, these deaths are needless and avoidable. Now is the time to set more ambitious goals for the benefit of our children, “leapfrog” over decades of slow-changing chronic disease outcomes and be more assertive about the implementation of the NCD “best buys”.

In this report, we make the case that health systems are critical for a more ambitious response to NCDs and for the implementation of the NCD best buys. The report proposes nine promising policy responses. If these are well sequenced and aligned, they can accelerate improvements in NCD outcomes and enhance the lives of millions of people living with often multiple conditions, as well as support countries in their journey towards universal health coverage. A well designed health system response can also reduce within-country health inequalities.

The country stories in the report paint a rich landscape of evolving and learning health systems that increasingly engage with other sectors to inspire, catalyse, join, co-produce, co-implement and monitor health action outside traditional boundaries. These stories show us Health 2020, the European health policy, in action with a dynamic network of stakeholders acting to prevent and manage NCDs with unity of purpose.

The report is very timely, since the importance of health systems and NCDs is in the spotlight at both the regional and global levels. Key messages and good practices of this report already inspired enthusiasm for action at the high-level meeting on Health Systems Respond to NCDs held in Spain in April 2018. Key messages of this report were also echoed at the high-level meeting honouring the legacy of the Tallinn Charter: Health Systems for Health and Wealth held in Estonia. Key lessons learnt will feed into the Global Conference on Primary Health Care in Kazakhstan later this year. However, the messages of this report will be as relevant for the coming decades as they are today, as we all work together to strengthen health systems for better health outcomes and greater health equity.

Zsuzsanna Jakab

Regional Director

WHO Regional Office for Europe

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The team working on this report would like to pay tribute to the late Professor Marc J. Roberts, Professor of Health Policy and Management at Harvard School of Public Health, whose enthusiasm and ideas provided an igniting spark for this work. We were all saddened by his unexpected and early death; he would have tremendously enjoyed contributing to the culmination of this work and to this report.

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## List of abbreviations

ACE inhibitor	angiotensin converting enzyme inhibitor	GNI	gross national income
ACG	adjusted clinical group	GYTS	Global Youth Tobacco Survey
ACS	acute coronary syndrome	HIC	high-income country
AMI	acute myocardial infarction	HPV	human papillomavirus
BMI	body-mass index	HSS	health system strengthening
CDSS	clinical decision support system	ICF	International Classification of Functioning
CHD	coronary heart disease	IT	information technology
CIS	Commonwealth of Independent States	LMIC	lower middle-income country
CPG	clinical practice guideline	NCD	noncommunicable disease
CRD	chronic respiratory disease	OECD	Organisation for Economic Co-operation and Development
CT	computed tomography	P4P	pay for performance
CVD	cardiovascular diseases	PAF	population attributable fractions
DALY	disability-adjusted life year	PEN	WHO package of essential noncommunicable disease interventions
DRG	diagnosis-related group	PHR	personal health record
EHR	electronic health record	SDG	Sustainable Development Goal
EML	essential medicines list	SEEHN	South-eastern Europe Health Network
EMR	electronic medical record	STEPS	STEPwise approach to surveillance
EPHO	essential public health operations	UMIC	upper middle-income country
EU	European Union	WHO FCTC	WHO Framework Convention on Tobacco Control
FFS	fee-for-service	YLD	years lived with disability
FHU	family health unit		
GDP	gross domestic product		

# 1

## Improving NCD outcomes: **do health systems matter?**

Hans Kluge, Gauden Galea,  
Josep Figueras, Melitta Jakab,  
Liesbeth Borgermans, Jill Farrington

- **NCD outcomes have been improving in Europe but there is scope for greater ambition.**
- **A comprehensive and aligned health system response to NCDs is critical, with attention to equity-enhancing policies.**
- **Health system transformation needs to be planned and managed taking advantage of political economy opportunities and overcoming obstacles.**



# Introduction

Noncommunicable diseases (NCDs) are one of the major health and development challenges of the 21st century.

The health impact of the major NCDs (diabetes, cardiovascular diseases (CVDs), cancer and chronic respiratory diseases) in the WHO European Region is alarming: taken together, these four conditions account for the majority of mortality and morbidity (89% of deaths and 85% of years lived with disability) in the Region (WHO, 2016) (Chapter 3). At least 80% of all cases of heart disease, stroke and diabetes and 40% of cancer cases could be prevented by tackling their major risk factors such as tobacco and alcohol use, unhealthy diets, physical inactivity, hypertension, obesity and environmental factors (WHO Regional Office for Europe, 2016a). Socioeconomically disadvantaged and vulnerable populations have a greater exposure and are more vulnerable to NCD risk factors and thus bear a greater burden in terms of mortality and morbidity (Mackenbach et al., 2016).

The economic impact of NCDs is staggering and constitutes a major barrier to economic and social development (WHO, 2017a). NCDs have potentially serious socioeconomic consequences, through increasing individual and household impoverishment and hindering social and economic development (Devaux & Sassi, 2015). It has been estimated that for every 10% increase in NCD mortality, economic growth is reduced by 0.5%. The costs of scaling up core interventions and services are low compared to their burden; the returns on this scale-up are therefore enormous. The returns on investment are particularly large in upper middle-income countries with high premature CVD mortality or a fast-growing NCD burden (WHO, 2017b). In the European Union (EU), NCDs result in the premature death of 550 000 people of working age across the 28 EU countries. This represents

a loss of 3.4 million potential productive life years and amounts to a loss of 0.8% of the EU's gross domestic product (GDP) annually. Furthermore, the equivalent of 1.7% of the EU's GDP is spent on sick leave and disability each year (OECD/EU, 2016). This is in addition to the direct treatment costs associated with NCDs.

Given population projections, which predict a doubling of the elderly population over the next 30 years, the increase in the incidence of NCDs will continue. Economic growth has a positive impact on NCDs, but increased life expectancy also implies more years of lives lived with health conditions, often multiple, which require interaction with the health system. Growing income inequality and vulnerability in some parts of Europe are also increasing the incidence of NCDs (WHO Regional Office for Europe, 2017a). Rapid urbanization contributes to health-affecting changes in diet and, at least in the short run, to reduced opportunities for physical activity. Increasing exposure to air pollutants further contributes to the rise of NCDs. In contrast, new opportunities are also present: the exponential increase in the rate of technology growth makes it possible to solve policy problems that were previously viewed as intractable. We live in an increasingly interconnected world and can spread ideas, solutions and experiences and create networks faster than ever.

NCDs represent a complex health problem with interlinked behavioural determinants, which in turn are further affected by social and structural determinants of health (GBD 2016 Risk Factors Collaborators, 2017). A complex problem requires a complex and holistic approach to solving it. The Sustainable Development Goals (SDGs) provide an opportunity to tackle multiple determinants of NCDs in a comprehensive manner, with an emphasis on intersectoral approaches and focusing explicitly

on those who might be left behind. In Target 3.4 of the 2030 Agenda for Sustainable Development, Member States agreed that they would “by 2030 reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being” (United Nations, 2015). The Action plan for the prevention and control of NCDs in the WHO European Region (WHO Regional Office for Europe, 2016a) embraces the vision of a region free from avoidable NCDs. Working towards this goal, the European health policy framework, Health 2020, includes the target of “a 1.5% relative annual reduction in ... premature mortality from cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases until 2020” (WHO Regional Office for Europe, 2016b). The inclusion of mental health and well-being in the SDG target highlights the need for a more comprehensive definition of NCDs, as well as the increased emphasis placed on morbidity and the quality of life (OECD, 2012). Other conditions such as musculoskeletal diseases and injuries deserve more attention as well.

Against this broad and complex background, the objective of this report is to articulate a comprehensive and aligned health system response to NCDs. The nature of NCDs is well understood: both mortality and morbidity respond well to a reduction in risk factors (tobacco use, alcohol use, unhealthy diets and physical inactivity, for example). Early detection goes a long way to achieving a successful cure or the long-term management of conditions such as hypertension or cervical cancer. When conditions appear, they often do so in multiple forms (diabetes, hypertension and deterioration of eyesight, for instance), requiring a number of health professionals to work together. A fast response is critical when acute situations (heart attack, stroke) arise. Follow-up care and rehabilitation after acute situations (such as stroke or breast cancer) are important for reducing further complications and improving the quality

of life. And finally, social support for people living with NCDs (stroke or dementia, for example) and their family members can ease the burden of illness and in turn have a beneficial impact on outcomes. The social determinants of health (income, employment, gender, etc.) greatly affect the emergence of NCD risk factors and diseases in individuals, as well as the success of the health system in addressing them. These characteristics of NCDs have important implications for successful health system responses.

This report makes an important contribution to the growing literature on improving NCD outcomes, both regionally and globally. The report breaks new ground in several ways. It demonstrates the case for systems thinking and a holistic transformation, in order to really put people’s needs for health and well-being first. Many analyses focus on selected aspects of the health system’s efforts to tackle NCDs (WHO Regional Office for Europe, 2012), but no other report takes stock of a comprehensive and aligned health system response with all its important enablers, such as financing, the health workforce, information, medicines policies and change management strategies. In addition, the report places great emphasis on the equity dimension of the health system response to NCDs, including all health disparities related to socioeconomic status, gender, age, racial or ethnic group, mental health, cognitive, sensory or physical disability, geographical location, or other characteristics historically linked to discrimination or exclusion. The report is inclusive of the diversity of the European Region and builds on inspiring good examples and policy initiatives. It combines concepts and scientific evidence with practical insights from five years of contextualized country work to inspire action for countries at different stages of health system development (Chapter 2).

## **NCD outcomes in Europe: time for ambition**

Important gains have been made in the WHO European Region, with inspiring success stories. In practically all countries where robust data are available, there has been a clear decline in premature NCD deaths in the past decade. The decline has been fastest in those countries with the highest mortality and the Region is converging at a steady rate, leading to a reduction in east-west inequity. Almost all countries in the Region have comfortably achieved the original bold goal of a 2% annual reduction in NCD mortality over the decade 2007–2017 (WHO, 2007). The Health 2020 goal of a regional 1.5% annual reduction is well on the way to being achieved and even exceeded in the next three years (WHO Regional Office for Europe, 2017b). These data show that large improvements in health can be achieved at reasonable cost, both for individuals and for populations.

The challenge remains, however, of how to accelerate this decline and reduce inequalities across countries. If the countries of the

**Acceleration  
and leapfrogging:  
the possibility of  
a 45% reduction  
of premature  
mortality from  
NCDs  
by 2030**

**Scaling up  
best buys  
requires a more  
comprehensive  
and better  
aligned  
health system  
response in line  
with values  
cherished in  
the WHO  
European Region**

Commonwealth of Independent States (CIS) continue on their present trajectory, it will take them around 50 years to achieve the current mortality levels of the 15 countries that were members of the EU before May 2004 (EU15). The Member States who joined the EU since May 2004 (EU 13) are 25 years behind the EU15 in terms of NCD avoidable mortality. This lag raises the possibility that, should the middle-income countries in the Region more fully exploit the better knowledge they now have access to, they can accelerate their achievements and leapfrog the prolonged period of slow decline seen in the EU15.

Europe can truly excel by aiming to reduce premature mortality from NCDs by 45% or more between 2010 and 2030, rather than proceeding on an historical trajectory. While it is recognized that a number of high-income countries probably cannot steepen the decline in mortality, their actions will impact on morbidity patterns and they could consider a more ambitious approach that would take them beyond “business as usual”. Middle-income countries with high rates are now on a steep mortality decline, but this will only bring them to the level of the higher-income countries within a span of two generations, during which dramatic and avoidable loss of life will be incurred.



## Strengthening the health system response to NCDs

There is now a great opportunity to accelerate gains in NCD outcomes by aggressively scaling up core NCD interventions and services, or best buys as they are often called (WHO, 2017b). Policy-makers today live in a fortunate age of knowing with great certainty what works for NCDs. However, despite unequivocal evidence, cost-effective interventions remain underimplemented (Chapter 4). The failings that limit a health system's performance in tackling NCDs primarily result not from a lack of knowledge but from not fully applying what is already known. Without doubt, political barriers continue to undermine progress, especially in scaling up population interventions for tobacco, alcohol and nutrition policies, where public health goals and commercial interest are not aligned. On the other hand, a weak – fragmented and poorly aligned – health system response fails to overcome the barriers to scaling-up the core interventions and services required to achieve nationally and internationally agreed goals (Chapter 5). While lack of funding is often an important constraint, it cannot be assumed that progress will be assured if more money becomes available. Without a health system that prioritizes funding towards cost-effective and equitable services, spending will not merely be inefficient, it may conceivably be counterproductive.

Scaling up best buys beyond their current level requires a more comprehensive and better aligned health system response in line with values cherished in the WHO European Region. Countries across the Region have acknowledged the right to health and committed them-

selves to universality, solidarity and equal access as the guiding values for organizing and funding their health systems. These values include fairness, sustainability, quality, transparency, accountability, gender equality, dignity and the right to participate in decision-making. Health 2020 has a strong commitment to the same values, which are enshrined in the WHO Constitution, the Declaration of Alma-Ata (1978), the Ljubljana Charter on Reforming Health Care (1996) and the Tallinn Charter: Health Systems for Health and Wealth (2008).

A comprehensive and aligned health system response to NCDs has nine cornerstones (Figure 1.1). Effective health system stewardship for NCDs requires stronger governance arrangements to ensure coherence across the different settings where NCD policies are developed, whether inside or outside the health system. Better governance is also essential for sustained sectoral and intersectoral health action with an institutionalized focus on outcomes. In order to scale up core NCD interventions and services in a people-centred manner, there is a need for an ambitious transformation in how we deliver public health, primary care and specialist services, with a sharpened focus on outcomes, coordination, continuity and comprehensiveness. This service delivery transformation can be further supported through aligned strategies related to four health system functions: the health workforce, health financing, medicines policy and information solutions.

Achieving the more ambitious goal of accelerating NCD outcomes and leapfrogging over decades of slow decline requires a stronger and faster health system response. The health system response to NCDs can be strengthened and accelerated in a number of ways, leading to a scale-up of core interventions and services and ultimately resulting in a significant improvement in NCD outcomes.

Figure 1.1. Nine cornerstones of a comprehensive and aligned health system response to NCDs



■ **A better resourced and prioritized health system response,** focusing on best buys. Leapfrogging over decades of slow change in NCD outcomes requires aggressive adoption of WHO's best buys on NCDs: these distil the lessons of decades and represent a cheap, easily implemented technology that can be adopted by countries at all levels of income to reduce risk and to better manage NCDs. The countries of Europe with the highest NCD burden are still far from universally adopting these best buys.

■ **A more comprehensive health system response.** Health systems are complex, with interlinked functions. Improved health impact eludes simplistic approaches, silver bullets and one-size-fits-all approaches. Comprehensive multipronged approaches, moving forward simultaneously and strengthening different health system functions, are the way to go. If there are missing pieces, progress will be hampered. For example, while the rhetoric on intersectoral action has increased dramatically in recent years, our understanding of governing and funding intersectoral action in a sustainable way has not yet contributed clear solutions. Similarly, inspiring and trailblazing calls for equity-oriented public health action will only be answered if public health agencies are knowledgeable and skilled to drive and implement such action. Turning some critical aspects of health systems around and moving away from how things have been done for decades requires identifying these missing functions and endowing them with capacity, sustainable institutions and resources.

■ **A better aligned health system response.** Even if health system development is comprehensive, its different functions may be misaligned, hampering progress and preventing impact on outcomes. A third way of accelerating health system development is through

better alignment of functions. One example often encountered is the inertia in the education of the health workforce to catch up with service delivery needs in public health and individual health care. Overcoming this inertia and aligning training programmes with the necessary present and future competency mix presents huge opportunities for improving service delivery; conversely, if overlooked it will constitute a major barrier to success. Another example is incentive arrangements in health service delivery, where the sum of incentives in most European health systems continues to reinforce specialist care and undervalue health promotion and primary care. Aligning financial incentives to support the full spectrum of service delivery, and not by level of care, offers an important opportunity for changing service delivery modalities and scaling up core NCD interventions and services.

■ **Adaptation of organizational innovation at large scale.** The fourth way of accelerating health system development is by skipping inferior, less efficient and more expensive ways of delivering core NCD interventions and services, and moving directly to more advanced approaches that represent current best practice in health system governance, organization and financing. There are many opportunities for leapfrogging through innovations in health systems' work on disease prevention, changes in the health workforce curriculum, organizational designs for more integrated and comprehensive service delivery, financing arrangements, more efficient and proactive technology-enabled care models, additional creative technology-enabled options for effective health encounters (patient to provider, provider to provider and patient to patient) and personalized care tailored specifically to a patient's genetic profile and needs.





## Box 1.1 Organizational innovations in health systems

Leapfrogging in areas other than health system development (such as telecommunications and energy) implies fast adoption of innovations at scale.

Innovations can be categorized by impact as either non-disruptive or disruptive. A non-disruptive innovation improves something that already exists in a way that supports the realization of new incremental opportunities (incremental innovation) or solves known issues (sustaining innovation). To highlight an example of a sustaining innovation, Chapter 7 describes a population health management approach in Spain that uses sophisticated mortality and morbidity information to classify the population into risk groups. This risk stratification instrument has been used to improve known processes, resulting in better surveillance, more refined resource allocation decisions, more precise planning of health workforce decisions, etc.

Disruptive innovations, also called transformational or revolutionary innovations, refer to innovations that fundamentally disrupt old systems and significantly change the behaviour of their actors. To highlight an example of a transformational innovation, Chapter 12 describes a large-scale experiment in Hungary, where an adjusted capitation formula for the full spectrum of care was developed and used as a virtual currency. Savings were calculated on the basis of the difference between the virtual capitation formula and the actual payments made to care providers. These savings were allocated to the care coordinator, who shared them with participating providers. Combined with changes in roles and responsibilities, this fundamental change in incentives led to better patient care, especially for people with chronic conditions, and significantly more efficient use of resources.

A particular type of innovation is frugal innovation, which can either be incremental or transformational. Frugal innovation has been described as “doing more with less for many” (Bhatti, 2014). Frugal innovations have enormous potential to reduce the gap between the health systems of high-income and low- and middle-income countries (Arasaratnam & Humphreys, 2013). Examples of frugal innovation are the use of village health committees in screening for hypertension in Kyrgyzstan (Chapter 7) and the use of telemedicine and video connections to diagnose stroke patients and decide on the level of care in Portugal and Spain (Chapter 14).

## The political economy: opportunities and obstacles

To achieve a stronger and accelerated health system response to NCDs, a number of opportunities are currently present in the political economy, but a range of obstacles also need to be overcome. The complex changes that need to be made to ensure a more effective response to NCDs require a carefully managed health system transformation process.

**Political economy opportunities.** The global and regional development framework places NCDs high on the agenda. The SDG process strengthens this positioning and provides a long enough time frame to think of complex system strengthening rather than seeking quick fixes.

- **A coalition of partners in the WHO European Region.** Value-based global, regional and national commitments have been made and are clearly aligned with what to do and the priorities to be assigned. A range of partners are eager to work together and have a greater impact, and they recognize the lead role of WHO as the legitimate international coordinator in the fight against NCDs, with the comparative competency to strengthen national and sub-national health systems at the request of its Member States. Social networks and civil society are vocal in calling for greater impact on NCDs, putting people at the centre.
- **A “burning platform” – a growing sense of urgency about the way to 2030 and beyond.** There is increasing recognition that 2030 is not some distant year in the far future; it is effectively just over a decade away. The people who will die of a heart attack or stroke in 2028 already have high blood pressure or diabetes now, or they are already smokers or drinkers. A health system needs to be able to detect these people early and to assess and manage their risks, doing so in a way that is centred around the needs and rights of the individual and communities. Not only do actions need to be effective, they also need to make a difference in the short term, as well as paving the way for further benefits beyond 2030. The WHO European Health Systems Foresight Group was created to help policy-makers understand potential future health system

directions and how to plan for them, safeguarding the values of solidarity, universalism and equity (Kluge et al., 2017).

- **A raised profile extending beyond health and into the economy and development.** The economic impact of NCDs is raising the profile of the issue beyond the health sector and increasingly makes NCD policies a matter of national development. A wealth of evidence is readily available to show politicians the benefit of investing in public health to prevent and control NCDs (McDaid, Sassi & Merkur, 2015).
- **Knowledge about how to transform health systems.** Since 2015, the WHO Regional Office for Europe has been facilitating experience-based learning from leading, promoting, participating in or evaluating the implementation of large-scale health system transformation (WHO Regional Office for Europe, 2016c). The focus of this initiative is on understanding how, and in what way, policy-makers have moved forward in implementing health system transformations, and what the main challenges and facilitating factors have been. A WHO-supported network of “transformers” is assisting and encouraging Member States through twinning, the provision of instruments (including a checklist to assess readiness for change) and the strengthening of capacity for change management, with the aim of helping policy-makers to identify, implement, monitor and evaluate common solutions to emerging challenges and to strengthen their institutional and intellectual capital.

**Political economy obstacles.** At the same time, major obstacles in the political economy prevent us from taking full advantage of these opportunities for faster progress.

- **The time dilemma: present costs, future benefits.** Most NCD-related measures incur costs today but do not provide benefits until sometime in the future. When considering an NCD investment today (such as taxation on tobacco, alcohol or sugar-sweetened beverages) that will yield benefits in the future, many policy-makers correctly understand that their administrations will bear the costs, but the benefits will be reaped on someone else’s watch. In addition, several public health interventions (like screening and vaccination) require initial investments. In recent years, however, reviews have documented the fact that targeted public health interventions can yield tangible results within a short time frame (WHO Regional Office for Europe, 2015). The communica-

tion skills of public health leaders to make the case for investment in public health are a competency of increasing importance, especially in times of budget constraints.

- **The challenge of the commercial determinants of health.** The exponential rise of cardiovascular diseases, diabetes and cancer is fuelled by just a few risk factors. At the top of the list are tobacco use, alcohol use, physical inactivity and unhealthy diets. Transnational corporations in these areas are major drivers of NCD epidemics, as their economic interests are not in line with nations’ public health interests. This problem also appears in the pricing and distribution of medicines. For example, cancer drugs tend to be less affordable in middle-income countries than in high-income countries (Goldstein et al., 2017). A carefully balanced set of instruments such as regulation, incentives and voluntary action can bring about a helpful alignment of commercial interests and public health goals. Change is possible. In the area of medicines, for example, the WHO Regional Committee for Europe in 2017 adopted a decision (EUR/RC67(1)) on strengthening Member State collaboration on improving access to medicines, in line with approaches advocated by the Fair Pricing Forum (WHO, 2017c).
- **Over-reliance on high-technology, complex specialist care on both the demand and the supply sides.** Overuse of high-technology services has become pervasive within contemporary medicine. At the same time, effective public health action, community health and primary care services do not reach enough people. The result is a suboptimally performing health system that does not reach its potential in terms of health outcomes or does so at high cost (Brownlee et al., 2017). The 2010 World Health Report, Health systems financing: the path to universal coverage (WHO, 2010), identified overuse of services as one of the main causes of health system inefficiency and addressing overuse as one of the main potential sources of funding. A web of complex causes involving culture, expectations, traditions, vested interests and financial imperatives underlies this pattern. More initiatives are needed to address the overuse of medical services by focusing on the trade-offs between benefits and harms and between benefits and costs, and by giving consideration to patient preferences.
- **Resistance to changing the culture of medicine.** The medical culture in a doctor- and hospital-centric health system results in sub-optimal attention being paid in medical curricula to people-centred

approaches in policy and practice, and to expansion of the task profiles of nurses, midwives and community workers. All health systems comprise a complex set of multiple cultures, and trying to shape these in order to improve the quality of care has been at the heart of many large-scale initiatives. The managerial/clinical interface is critically important. Clinicians who are not supportive of change can exert a powerful block. Managers need to be immersed in clinical work in order to understand what clinicians value. For their part, clinicians in key managerial posts can be important in gaining commitment from colleagues to change. Managers need to identify such people and foster alliances with them (WHO Regional Office for Europe, 2016c). In any case, cultural change requires tremendous energy (Pettigrew, Ferlie & McKee, 1992, p. 281).

- **Erosion of social values.** The societal environment is changing rapidly, with major societal uncertainties as migration, violence and fear influencing human interactions. On the eve of the 40th anniversary of the Declaration of Alma-Ata – which for the first time in history advocated for people-centred health systems based on integrated primary health care, committing the whole of governments all over the world to the health of their people as an expression of

social justice – the Member States of WHO in the European Region have a tremendous responsibility to recommit themselves to the social values of solidarity, universality and equity.

## Conclusion

In the opening chapter of this report, we made the case that health systems matter a great deal for improving NCD outcomes. We call on the Member States of WHO in the European Region to heed a more ambitious call, set their aims higher and take action to achieve at least a 45% reduction in premature NCD mortality by 2030. Responding to this call requires a comprehensive and aligned health system response with attention to equity-enhancing policies. The experience of champions in the WHO European Region has proven that political economy obstacles can be overcome. This requires political commitment, energy, vision, committed people, distributed leadership and, above all, trust and courage.



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# 2

## **Breaking down walls:**

The work programme on strengthening the health system response to NCDs

**Melitta Jakab, Jill Farrington,  
Frederiek Mantingh, Hans  
Kluge, Gauden Galea**

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**This report captures the conclusions of a six-year work programme in the WHO European Region to strengthen the health system response to NCDs.**

**This chapter reviews the motivation for the work programme, the portfolio of outputs, the approach, the framework, and the policy impact.**

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## Motivation

In 2012, the WHO Regional Office for Europe embarked on a new work programme on “Strengthening the Health System Response to NCDs” (the HSS NCD project). This multidisciplinary and interdivisional work programme was motivated by increasing calls for a comprehensive health system response to NCDs, at a time when pragmatic and actionable guidance on what constitutes this response was not available (Beaglehole et al., 2011; WHO, 2011).

The work programme was greatly motivated by the strong emphasis, in the European health policy framework, Health 2020, on NCDs and health systems and on a holistic approach to tackling public health challenges (WHO Regional Office for Europe, 2013a).

The work programme builds on decades of work to develop policies and take action on health system strengthening in WHO’s European Member States. Two important health system policies were developed in the Regional Office during this work programme: the operational approach to health system strengthening (WHO Regional Office for Europe, 2013b) and the priorities for health system strengthening in the WHO European Region 2015–2020 (WHO Regional Office for Europe, 2015). The lessons learnt in the HSS NCD project contributed to both these important documents, and the work programme in turn has been further inspired by them.

The launch of the work programme coincided with a period of intensified attention to NCDs at global, regional and country levels, catalysed by the United Nations high-level meetings on NCDs in 2011 and 2014 (United Nations, 2011; United Nations, 2014), the WHO Global action plan for the prevention and control of NCDs 2013–2020 (WHO, 2013) and the Action plan for the prevention and control of noncommunicable diseases in the WHO European Region 2016–2025 (WHO Regional Office for Europe, 2016). Together with these developments, the project has been one element in concerted action to step up the momentum for change in this area.

Owing to its comprehensive and holistic nature, linking the agendas for health system strengthening and NCDs, and its attention to equity issues, this work programme has smoothly entered the era of the Sustainable Development Goals and provides important insights into achieving a number of important goals.

**“The long-term nature of many NCDs demands a comprehensive health system response that brings together a trained workforce with appropriate skills, affordable technologies, reliable supplies of medicines, referral systems and empowerment of people for self-care, all over a sustained period of time.”**

(WHO, 2011)

**“A key requirement is a comprehensive approach to health system strengthening to deliver services for all common diseases during the lifetime, with a patient-centred model of delivery.”**

(Beaglehole et al., 2011)

## The portfolio of outputs

The HSS NCD work programme has helped Member States to: (i) design and implement health system strengthening policies that have enabled core NCD interventions and services to be scaled up and gains in NCD outcomes to be accelerated; (ii) synthesize and share knowledge and experience on addressing health system barriers; and (iii) enable cross-country learning and exchange of information through dialogue.

The main outputs of this work programme include:

**An assessment guide.** A common framework was developed to guide multidisciplinary assessments of countries' health system response to NCDs (WHO Regional Office for Europe, 2014a). The guide was pilot tested in five countries (Hungary, Kyrgyzstan, the Republic of Moldova, Tajikistan and Turkey) in 2013 and was then finalized after an expert consultation, taking into account lessons learnt from the pilot testing.

**Multidisciplinary country support with structured assessments.** As an entry point to policy development, country assessments of the health system response to NCDs were conducted using the common framework. Twelve countries have so far engaged in this process (Armenia, Belarus, Croatia, Estonia, Hungary, Kazakhstan, Kyrgyzstan, the Republic of Moldova, Serbia, Tajikistan, the former Yugoslav Republic of Macedonia and Turkey). In most cases, the visible public launch of the country assessment report drew attention to the issue of NCDs from a health system perspective and galvanized action. In most cases, follow-up support was provided for the implementation of policy recommendations after the country assessments, with enthusiastic uptake and engagement.

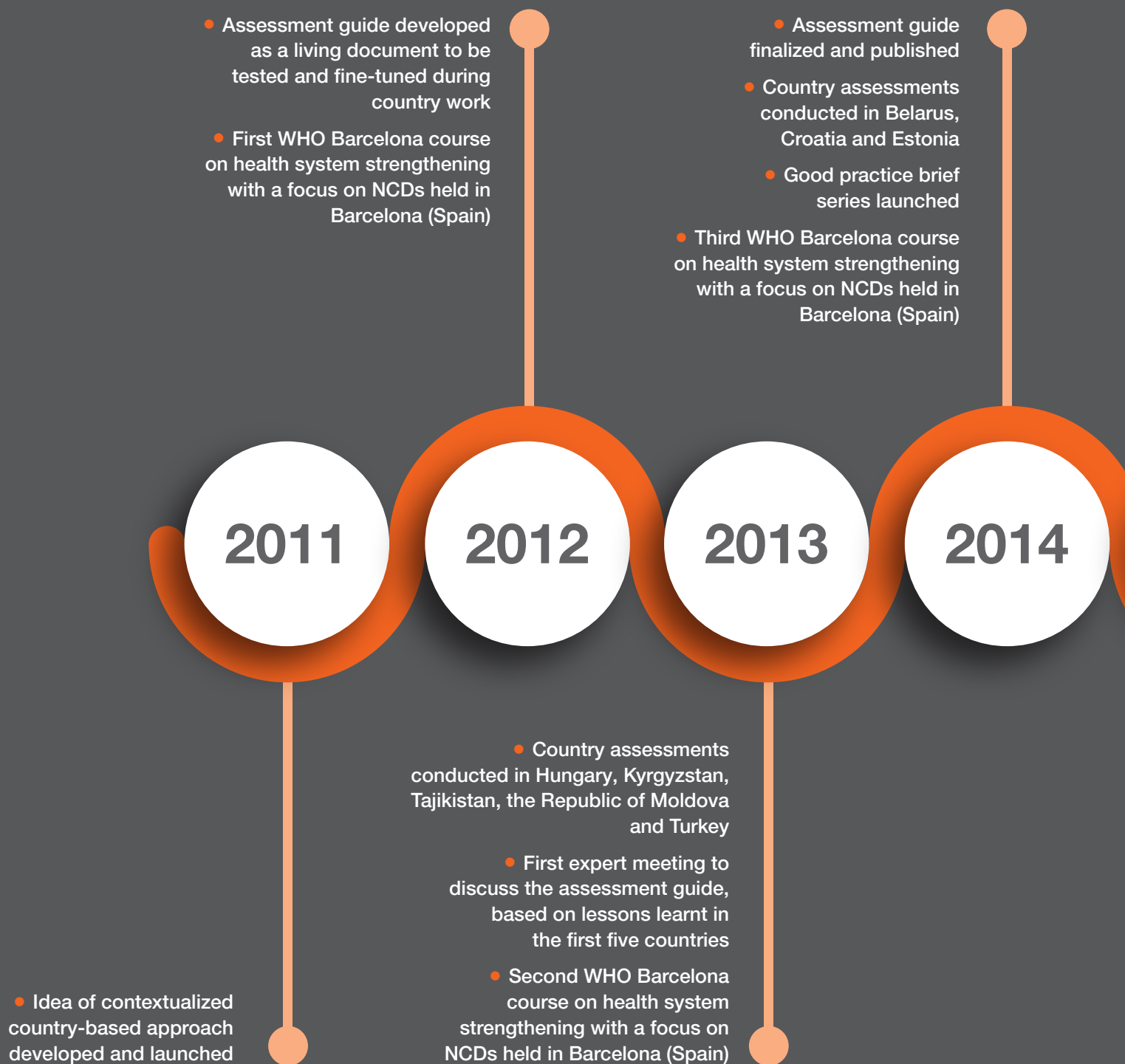
**Good practice briefs.** A series of good practice briefs was also launched in 2014 (WHO Regional Office for Europe, 2014b). The briefs put the spotlight on a wide range of instruments and policies to strengthen the health system response to NCDs, while keeping in mind a comprehensive systems approach.

**Capacity-building, annual training courses and platforms for on-going policy exchange.** The knowledge and experience gained from the country assessments have been incorporated in an annual course on health system strengthening with a focus on NCDs, delivered in both English and Russian and held in Barcelona for five consecutive years, between 2012 and 2016. Since its inception, the course has enabled exchanges among 300 participants from the Region. The WHO Regional Office for Europe has also hosted or co-hosted a number of regional and subregional events on NCDs and health system strengthening, which have provided useful platforms to exchange and share experience of this work programme. Such events have been held in Minsk (Belarus), Tallinn (Estonia), Moscow and St Petersburg (Russian Federation) and Ashgabat (Turkmenistan).

**Regional synthesis report.** The lessons learnt from the country assessments and policy follow-up processes have been continuously synthesized and turned into this regional synthesis report. Two expert meetings have contributed greatly to the synthesis process: the first one, hosted by WHO and held in Copenhagen (Denmark) in 2015, focused on the key health system barriers emerging from the country assessments. The 2017 expert and Member State meeting, cohosted by WHO and the Ministry of Health, Social Services and Equality and held in Madrid (Spain), tested the main messages and proposed policy responses to the health system barriers that had been identified (Figure 2.1).



Figure 2.1. Timeline of the HSS NCD work programme





## Approach

**Contextualized to each country.** The main goal of the work programme was to catalyse action at country level. The approach was accordingly designed to be contextualized and anchored in each country's processes, culture and policy environment. Countries were prompted to share their expectations of the assessment and to think ahead as to which areas of their health system response they would most like to improve in order to tackle NCDs. The assessment team and the focus of the assessments were designed to meet these linked objectives.

**Multidisciplinary teamwork.** The country assessments and follow-up policy support were carried out by multidisciplinary expert teams. Depending on national priorities and interests, the teams typically included expertise in governance, public health, general service delivery, primary care, organization of specialist care, health economics/finance, pharmaceutical policy, and information solutions.

**Consensus-based assessments and recommendations.** International and national teams worked side by side towards a shared understanding and consensus agreement on the assessment and recommendations. Since the goal was to catalyse action at country level, ownership of the conclusions and recommendations in the country assessment report was important. Missions put forward consensus-based conclusions by the expert teams, and drafts of the reports went through multiple rounds of consultation with national stakeholders.

**Periodic regional consultations and ongoing synthesis.** Three regional consultations were conducted during the six years of the project, in order to seek expert and Member State input at various stages, take stock of progress, identify emerging priorities and test messages. Since the country assessments were not designed for a comparative analytical study, the consultations were important steps of validation.

## Policy impact

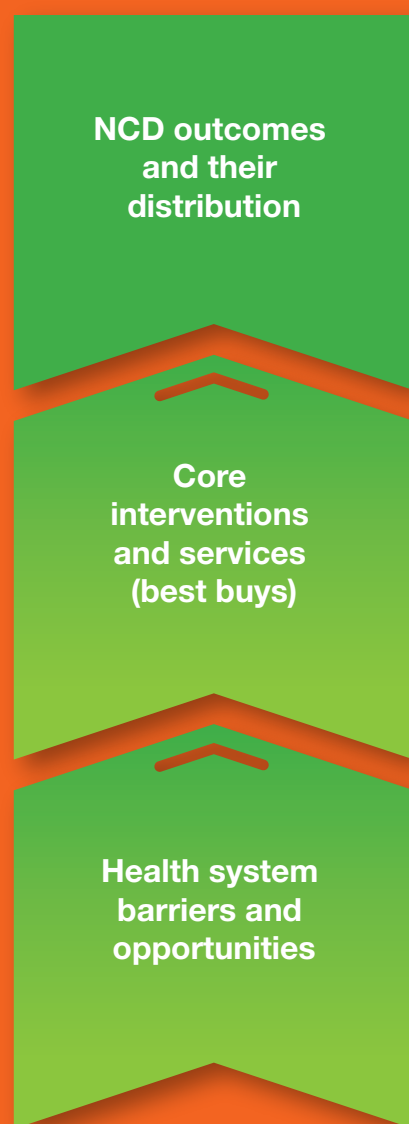
Key informant interviews were conducted in 2017, to take stock of the processes that had been initiated after completion of the HSS NCD country assessments in the 12 countries. In 10 of the 12 countries, the HSS NCD report was launched publicly with broad stakeholder participation, and it furthered political dialogue and attention to NCDs from a health system perspective.

Eight of the 12 countries also report having made progress on national legislation in the areas of risk factor control in line with the core NCD population interventions. All the countries have engaged in addressing the health system barriers identified in the country assessments, with the most popular areas of policy development being primary care (nine of 12 countries), public health (six countries) and health financing (six countries).

## Framework

The HSS NCD work programme relies on a simple framework with three pillars, following the WHO Regional Office for Europe's operational approach to health system strengthening (Figure 2.2) (WHO Regional Office for Europe, 2013b). The first pillar focuses on NCD outcomes and their distribution. The second pillar links outcomes to the implementation and coverage of core NCD interventions and services, which are evidence-based, high-impact, cost-effective, affordable and feasible to implement in a variety of health systems (WHO, 2013; WHO Regional Office for Europe, 2016; WHO, 2017). They include interventions at both population and individual service levels. The third pillar then connects the core interventions and services to the health system, in order to identify barriers that impede and opportunities that facilitate their scale-up.

Figure 2.2. The three pillars of the HSS NCD framework



In the country assessments, 15 health system barriers and opportunities were examined. These were derived from key informant interviews with policy-makers. They reflected the language and grouping of issues used by policy-makers during the interviews (WHO Regional Office for Europe, 2014a). These 15 health system features have been aggregated into the nine most prominent ones for the purposes of this report, and in order to provide a succinct summary of priority weaknesses in health systems.

This simple framework maps to any health system framework commonly in use, in terms of its separation of goals (outcomes) and instruments (health system strengthening policies) (WHO, 2000; WHO, 2007). The important feature that makes this framework operational, both for analysis and for policy design, is the link that it makes between goals and instruments by putting cost-effective and high-impact core interventions in the spotlight. Looking through the lens of these specific interventions and services, the analytical work has revealed more specific health system challenges than previously. This in turn has made it possible to develop better tailored and more pragmatic solutions and policy recommendations.

## Structure of the report

This simple framework has inspired the structure of this report.

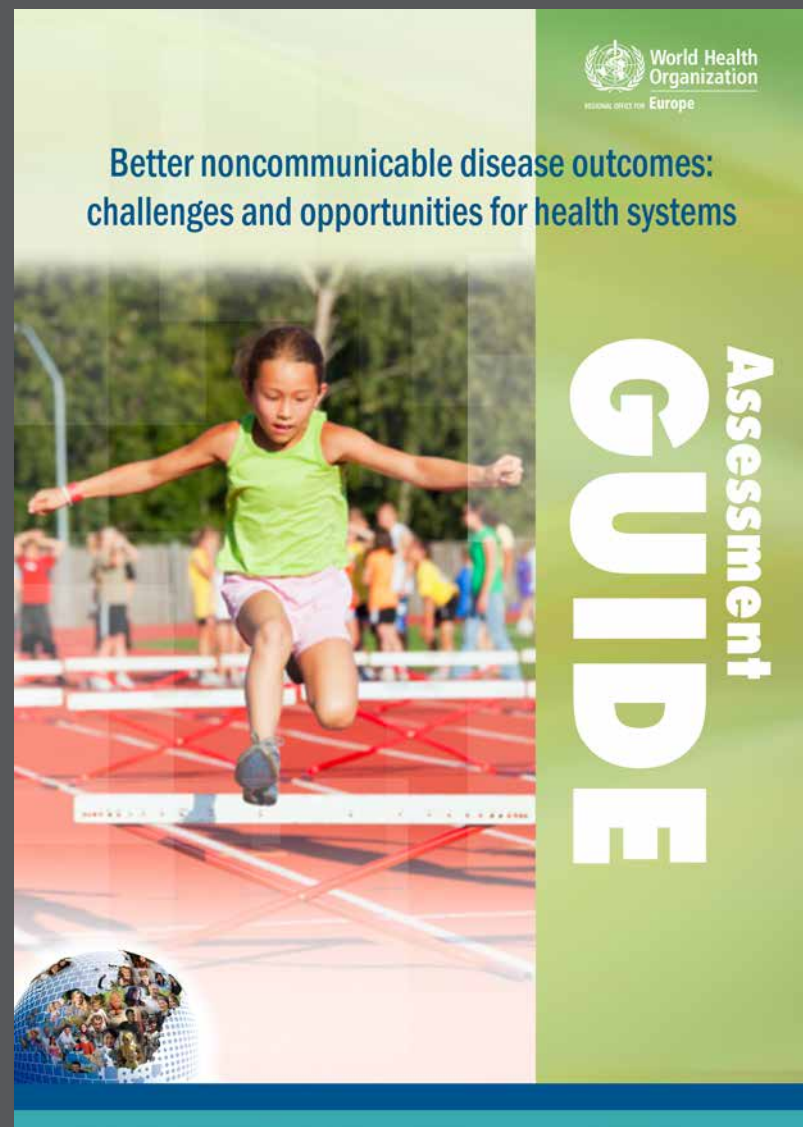
Part B provides a **regional outlook and diagnosis** of the health system response to NCDs in the WHO European Region. It focuses primarily on the 12 country assessments, but it also draws contrasts and parallels with other countries. The three chapters in Part B correspond to the three pillars of the framework: a regional overview of NCD outcomes (Chapter 3), coverage of core NCD interventions and services (Chapter 4), and nine health system barriers (Chapter 5).

Part C highlights key elements of a **comprehensive and aligned health system response to NCDs** for the European Region. The nine chapters in Part C (Chapters 6 to 14) aim to provide pragmatic and actionable policy directions in response to the nine health system barriers previously identified. Each of these chapters is organized around four or five key messages and highlights the most promising policy directions to accelerate the scale-up of core NCD interventions and services. Each chapter ends with a table setting out policy implications and recommendations.

Part D concludes with an inspiring agenda for making change happen.

# Country assessments


Country assessments identify health system challenges and opportunities for improving outcomes for noncommunicable diseases. The guide outlines a five-step process to arrive at policy-relevant and contextualized conclusions.





World Health Organization Europe


Better noncommunicable disease outcomes: challenges and opportunities for health systems



**Country assessment**  
**ARMENIA**


Jill Farrington  
Aena Korotkova

Sylvie Stachenko  
Anne Staehr Johansen



World Health Organization Europe


Better noncommunicable disease outcomes: challenges and opportunities for health systems



**Country assessment**  
**BELARUS**


Maria Skarphedinsdottir  
Frederiek Mantingh  
Arnoldas Jurgutis

Anne Staehr Johansen  
Tatyana Eimanova  
Egor Zaitsev



World Health Organization Europe


Better noncommunicable disease outcomes: challenges and opportunities for health systems



**Country assessment**  
**CROATIA**


Juan Tello  
Alynaï Saibyanova  
Sylvie Stachenko  
Arnoldas Jurgutis

Deirdre Mulholland  
Trin Habicht  
Margrieta Langins



World Health Organization Europe


Better noncommunicable disease outcomes: challenges and opportunities for health systems



**Country assessment**  
**ESTONIA**


Taavi Lai  
Anne Staehr Johansen  
Joao Brada  
Marge Reinap

Thomas Dornier  
Frederiek Mantingh  
Ja Jevell  
Melitta Jakob



World Health Organization Europe


Better noncommunicable disease outcomes: challenges and opportunities for health systems



**Country assessment**  
**HUNGARY**


Zoltán Volk  
David Beran  
Zsófia Pusztai

Nanne Bak Pedersen  
Tamás Evetovits  
Szabolcs Sügöti



World Health Organization Europe


Better noncommunicable disease outcomes: challenges and opportunities for health systems



**Country assessment**  
**KAZAKHSTAN**


Jill Farrington  
Alynaï Saibyanova  
Sylvie Stachenko  
Juan Tello  
Francesca Romana Pizzelli

Anna Kordakova  
Isabel Yudi Aguirre  
Anne Staehr Johansen



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**Country assessment**  
**KYRGYZSTAN**


Melitta Jakob  
Barton Smith  
Nina Sautenkova  
Aida Abdalimova

Adyl Temirov  
Ryskul Kadyralieva  
Suyumjan Mukejeva  
Larissa Murrakarimova



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**Country assessment**  
**THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA**


Taavi Lai  
Sylvie Stachenko  
Neda Milevska Kostova

Gordano Ristovski  
Igor Spiroski



World Health Organization Europe


Better noncommunicable disease outcomes: challenges and opportunities for health systems



**Country assessment**  
**REPUBLIC OF MOLDOVA**


Maria Skarphedinsdottir  
Barton Smith  
Alessandra Ferraro  
Olga Zues

Angela Ciobanu  
Marcela Tirdia  
Silvia Dornente  
Jarno Habicht



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**Country assessment**  
**SERBIA**


Jill Farrington  
Frederiek Mantingh  
Marlyis Corbea  
Arnoldas Jurgutis  
Marina Gambaryan  
Marina Popovich  
Julianne Williams  
Sylvie Stachenko

Alexandre Lourenco  
Rafaelo Cousseho  
Jeka Filipce Raposo  
Zorfa Pusztai  
Aleksander Rajovic  
Jelena Gudelj Rukic  
Bijana Kilibarda  
Milena Vasic



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**Country assessment**  
**TAJIKISTAN**


Baktygul Akkaziya  
Juan Tello  
Barton Smith  
Melitta Jakob

Konstantin Krasovskiy  
Nina Sautenkova  
Lola Yuldasheva  
Mekhn Shoisamuloeva



World Health Organization Europe


Better noncommunicable disease outcomes: challenges and opportunities for health systems



**Country assessment**  
**TURKEY**

Melitta Jakob  
Lorraine Hawkins  
Belinda Loring

Juan Tello  
Toker Ergüder  
Mehmet Kontas



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<sup>2</sup> All references accessed on 15 January 2018.





# 3

## **Regional trends** in noncommunicable disease outcomes

Enrique Loyola  
Ivo Rakovac  
Jill Farrington  
Gauden Galea

## Key observations

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International goals on premature mortality from NCDs **are likely to be met** for the WHO European Region, **but there are significant gaps**

1

2

**Cardiovascular diseases are the driver of premature mortality**, and both prevention and treatment have been instrumental in achieving better outcomes

**There is room to improve** NCD-related health behaviours

3

4

Years lived with disability from NCDs are increasing, and **multimorbidity is becoming the norm**

The burden from NCDs is **economic**, not just health-related

5

## Introduction

WHO's European Member States have pledged to achieve better outcomes for NCDs. A number of commitments drive policy in the Region, including:

- **the target in the WHO European health policy framework, Health 2020:** a reduction in premature (30–69 years) mortality from four major NCDs (cardiovascular diseases, diabetes, chronic respiratory diseases and cancer) of 1.5% annually by 2020;
- **the global NCD target:** a reduction in premature mortality from the four major NCDs of 25% by 2025;
- **Sustainable Development Goal (SDG) 3.4:** a reduction in premature mortality from the four major NCDs of one third by 2030.

These commitments can be achieved through implementation of the WHO “best buys”, or core interventions and services, as referred to in this report. These include the most cost-effective and effective interventions among populations and in individuals, which can be implemented in a wide variety of health systems and funding levels (see Chapter 4).

This chapter describes the performance of WHO's European Member States in meeting these international commitments to NCD outcomes and their common risk factors, including that of the 12 countries where an assessment of health system strengthening (HSS) and NCDs was carried out (see Chapter 2). Five observations are made, leading to the conclusion that, while the European Region is doing well, it could indeed do better by focusing on areas of particularly large potential gains in NCD outcomes.

Sources of data for the chapter include the WHO European Health for All database and the Global Health Observatory, as well as surveys carried out using the WHO STEPwise approach to surveillance (STEPS). The chapter draws on recent analysis carried out by the WHO Regional Office for Europe to assess the Region's progress against the targets in the global monitoring framework agreed at the Sixty-sixth World Health Assembly in 2013, a set of time-bound commitments agreed at the second United Nations high-level meeting in 2014 for reporting by 2018, and the specific targets on NCD-related premature mortality within the Sustainable Development Goals and in the Health 2020 monitoring framework (WHO Regional Office for Europe, 2017a; WHO Regional Office for Europe, 2017b).

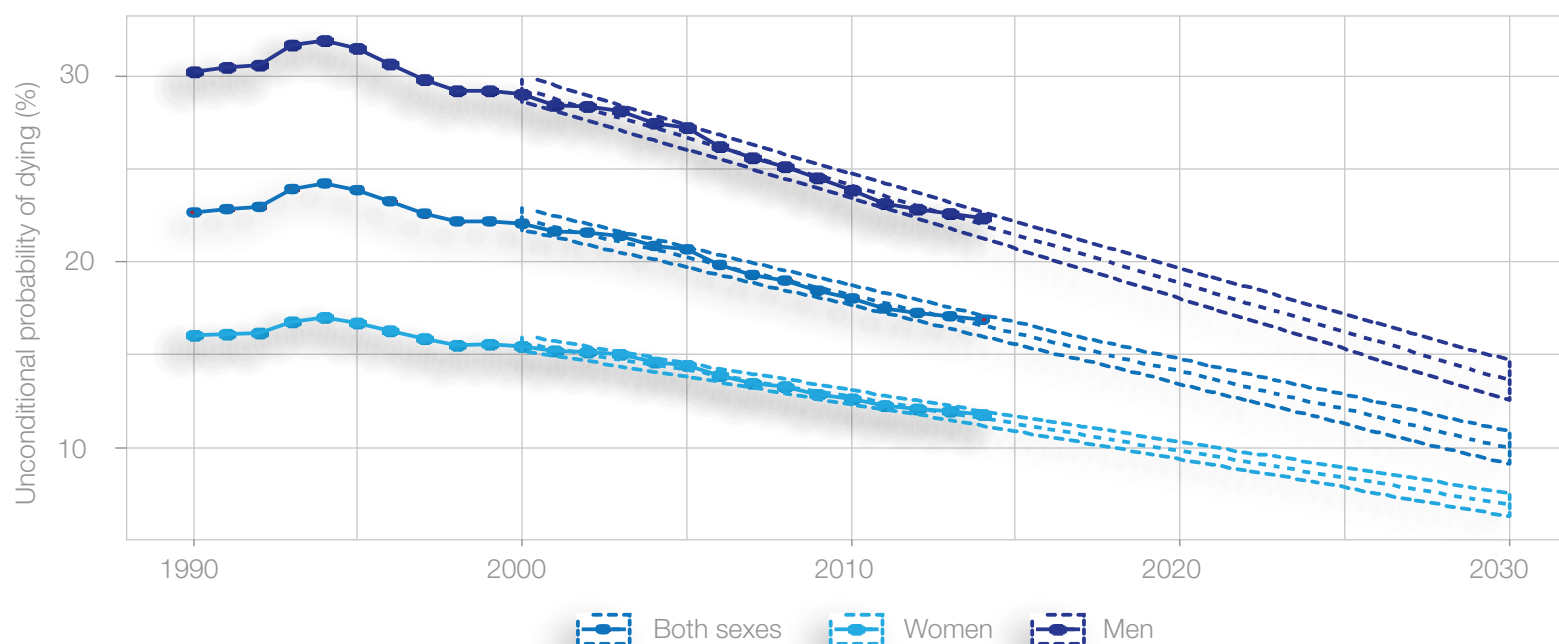
## Observation 1: International goals on premature mortality from NCDs are likely to be met for the WHO European Region as a whole and by individual countries, but there are significant gaps

### Premature mortality from NCDs is falling

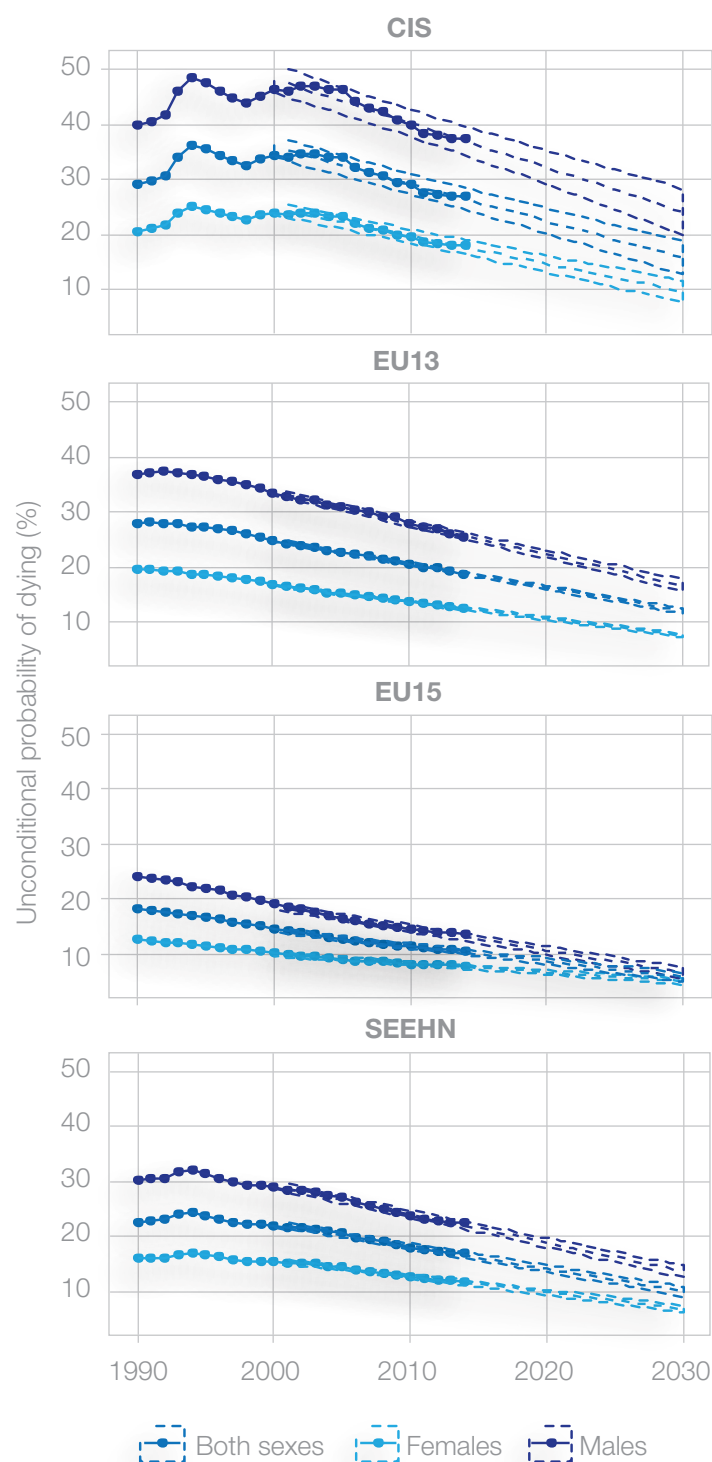
The WHO European Region has a success story to share. For practically all countries where robust mortality data are available, there has been a clear decline in premature deaths from NCDs in the past decade. This decline has been fastest in the countries with the highest mortality, and the Region is converging at a steady rate, leading to a reduction in east–west inequity (Figure 3.1). The regional average rate of decline for men is 2.2% annually, compared with 2.1% for women.

Almost all countries in the Region comfortably achieved a 2% annual reduction over the decade 2007–2017; this was true both of countries where mortality had already been declining as far back as the 1970s and of those where the risk of premature NCD death peaked in the period 2000–2005. The premature mortality targets in Health 2020 (an average annual reduction of 1.5% by 2020), the Global Monitoring Framework (25% reduction by 2025) and the Sustainable Development Goals (one third reduction by 2030) are well on the way to being achieved and even exceeded in the coming years.

**Figure 3.1. Observed unconditional probability of dying between ages 30 and 69 years from four major NCDs in the WHO European Region, 1990–2015 and projections to 2030**



**Figure 3.2. Observed unconditional probability of dying between ages 30–69 years from four major NCDs in subgroups of countries in the WHO European Region, 1990–2015 and projections to 2030**



## The WHO European Region is leading the way in reducing premature NCD mortality

This observation has global significance. Worldwide trends show that progress in the reduction of premature NCD mortality has been by far the largest and fastest in the WHO European Region. Preliminary analysis suggests that similar reductions may be seen in high-income countries around the world. It is also possible that, as in the European Region, middle-income countries may be reaching a turning point.

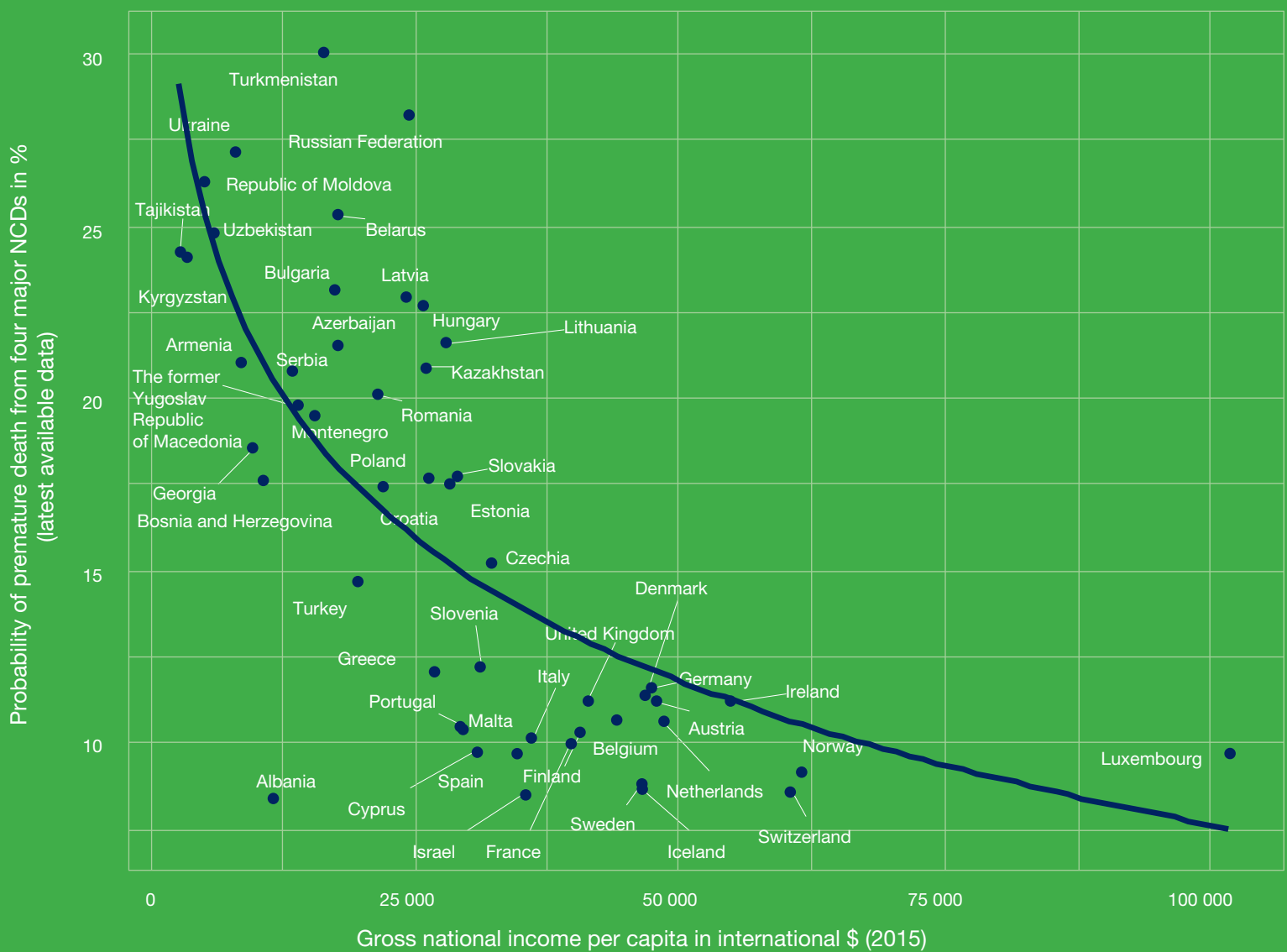
### All subgroups of countries are seeing progress, but at different speeds

The trends and trajectories of NCD mortality can be compared in four groups of countries: the Commonwealth of Independent States (CIS); the member countries of the European Union (EU) before May 2004 (EU15) and those that have joined the EU since then (EU13); and countries that are members of the South-eastern Europe Health Network (SEEHN) (Figure 3.2). In all cases, the trajectory is that SDG 3.4 will be achieved by 2030. Nevertheless, the time series suggests that, if the CIS follows historic European trajectories, it will take those countries around 50 years to achieve the current low mortality levels of the EU15. The EU13, while better off than the CIS, are around 25 years behind the EU15. The CIS and the EU13 are thus one and two generations, respectively, behind the EU15 in terms of avoidable NCD mortality.

### There are differences within and between countries according to socioeconomic development

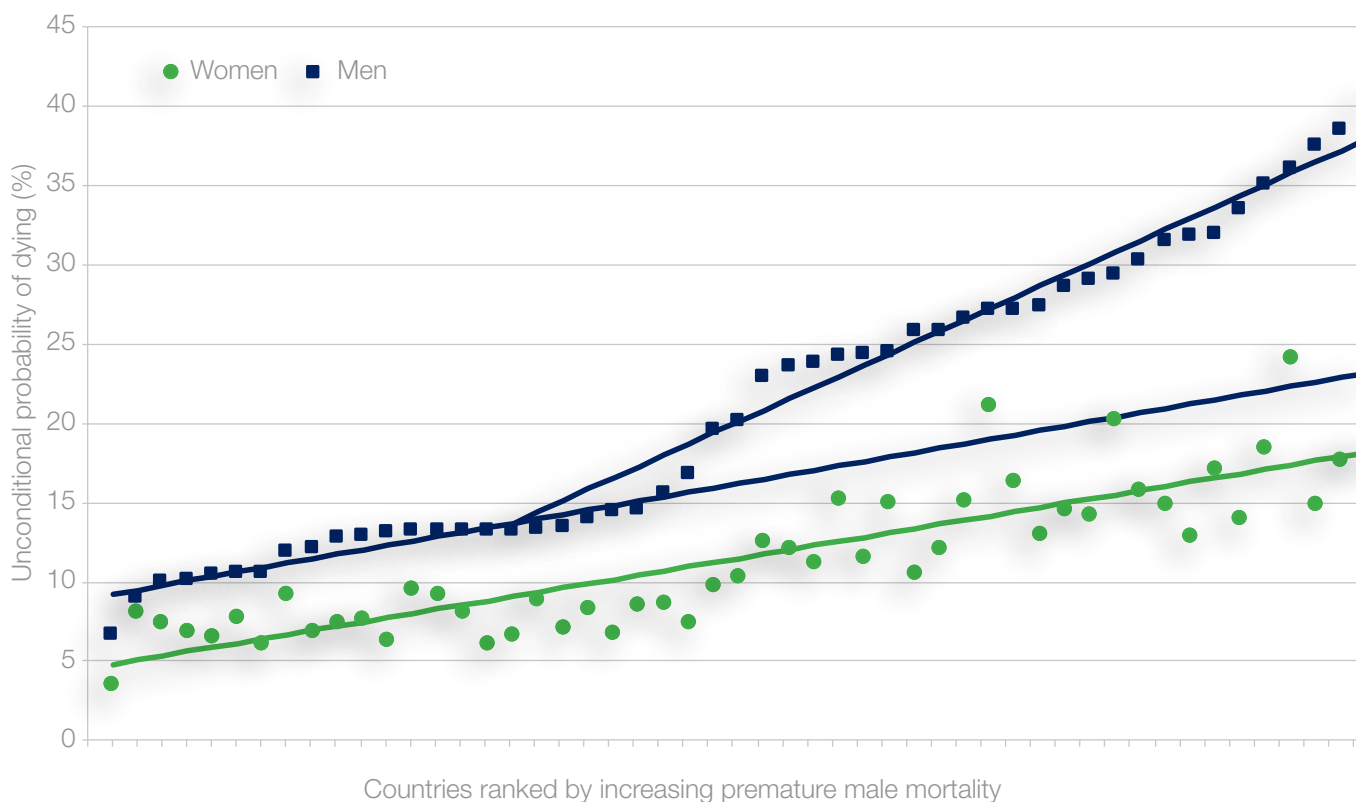
The health of Europeans is in general improving, and the absolute inequalities in health between socioeconomic groups are decreasing. However, not all socioeconomic groups within countries are experiencing the same reductions in premature mortality and improved life expectancy. Relative inequalities in mortality by education and social class have been widening in Europe since the 1990s, because less progress has been made among disadvantaged populations (Mackenbach et al., 2016). There is also some correlation between the level of development, using gross national income (GNI) per capita as a proxy indicator, and the probability of premature mortality, whereby those countries with higher per capita GNI have lower mortality, and vice versa (Figure 3.3).

Figure 3.3. Probability of premature mortality and gross national income per capita for the WHO European Region





**Figure 3.4. Unconditional probability of dying between ages 30–69 years from four major NCDs for men and women in Member States in the WHO European Region, latest available data**



### Men die earlier from NCDs

As can be seen in Figures 3.1 and 3.2, premature mortality from the four major NCDs is higher for men than for women for the Region as a whole and for each of the country groupings considered. Figure 3.4 shows this difference at country level, with the risk of premature death from NCDs in women and men arranged in ascending order. At the lower end of the graph, most countries are western European; for these, the risk gradient slowly increases for both men and women, and the slopes are fairly parallel. For the largely middle-income countries,

the gradient for male premature mortality increases, both relative to women and compared with men of the same age in western European countries. This suggests a high level of avoidable male mortality.

Some of these differences between men and women relate to biological sex, which is non-modifiable in this context. Others relate to gender, however, which is a sociological, anthropological, cultural and political construct, and therefore modifiable: these include cultural expectations of masculinity, drinking and smoking behaviour, and men's health-seeking behaviour.

## Observation 2: Cardiovascular diseases are the driver of premature mortality, and both prevention and treatment have been instrumental in achieving better outcomes

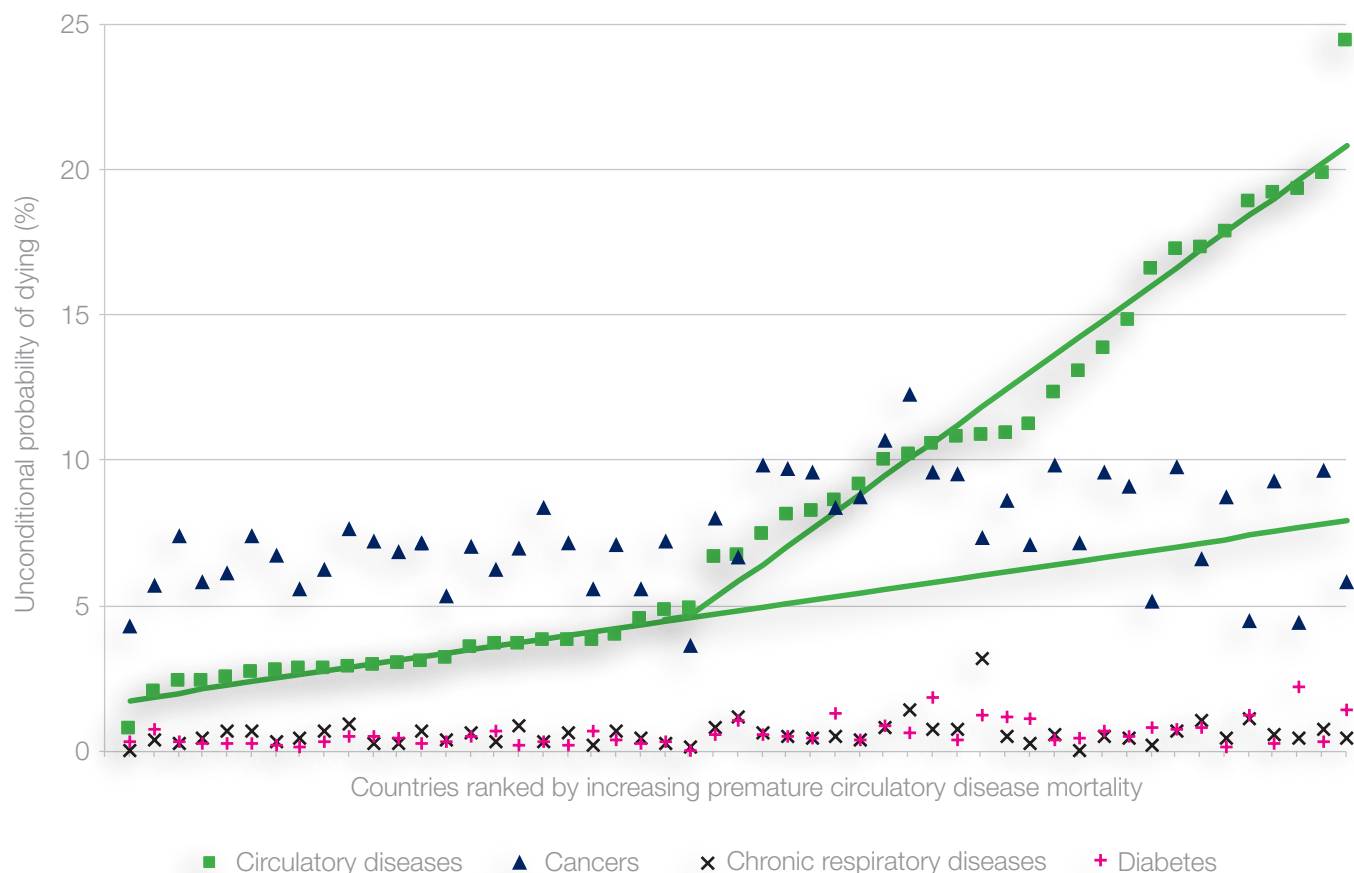
### Cardiovascular diseases are driving changes in premature mortality

Two thirds of premature deaths in the Region are caused by the four major NCDs, and cardiovascular diseases (CVDs) account for half of the premature mortality in the Region. Rates of CVD mortality (both sexes, all ages) are nearly twice as high in the eastern (central Europe, eastern Europe and central Asia) as in the western part of the Region.

Maintaining or accelerating the reductions in premature mortality from NCDs is largely dependent on reductions in CVDs.

As can be seen in Figure 3.5, while gradients for the other three main NCDs are fairly even across the Region, the slope for CVDs defines two blocks of countries: one is largely high-income, with a low slope in CVD mortality; the other is middle-income, with a steep gradient. This suggests that many countries have the potential to make rapid gains by addressing excess deaths from heart attack and stroke.

**Figure 3.5. Unconditional probability of dying between ages 30–69 years by disease in Member States in the WHO European Region, latest available data**



## A transition in diseases

There are shifting patterns in the probability of dying prematurely from the major NCDs (Figure 3.6). Large decreases in CVD mortality are leaving cancers as the leading causes of premature death in the EU15 countries in particular.

These changing patterns differ by type of cancer, with some showing more amenability than others. For example, despite their increasing incidence, important decreases in premature mortality have been observed for breast and colon cancers, while there are slower rates of reduction for lung cancer; on the other hand, increased premature mortality rates are being observed for cervical cancer, particularly in the CIS countries.

## Both prevention and treatment are important

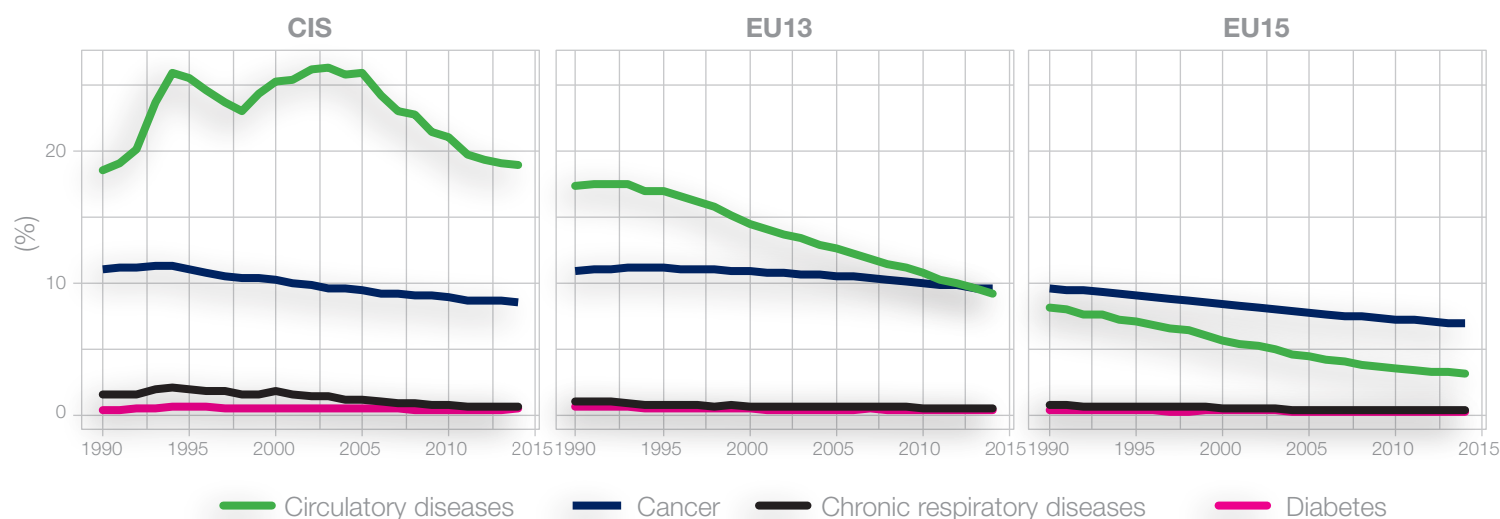
Figure 3.7 summarizes the findings from studies using the IMPACT coronary heart disease (CHD) mortality model and equivalent meth-

odologies, which attempt to analyse the reductions in CHD by modelling the roles played by risk factor changes and effective medical interventions.

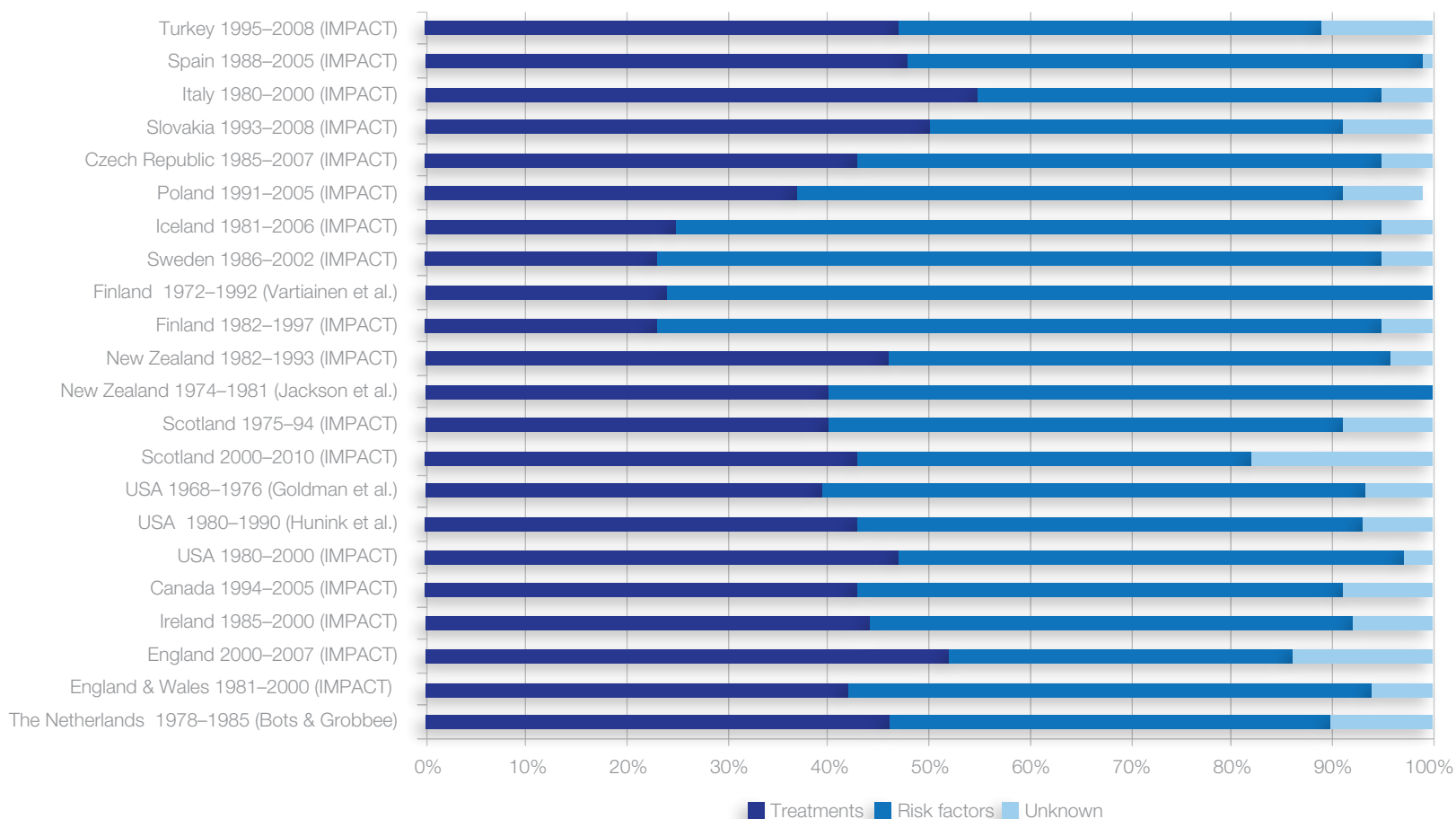
Modelling has attributed about 50% of CHD reduction to changes in risk factors such as smoking, cholesterol and blood pressure, and around 40% to treatments, many of which (such as those used in secondary prevention) are relatively low-cost. Focusing on CVDs in countries with a high burden would give higher priority to a set of more clinical interventions that have been largely undervalued to date. There is much to be gained in countries where salt is consumed at high levels, where effective control of blood pressure is not the norm in primary care, and where acute responses to myocardial infarction and stroke are deficient.

Both prevention and treatment are also important for other NCDs. For example, the trends in premature mortality for specific cancers mentioned above reflect the successes of the health-care system with early detection and effective treatment, as well as prevention.

**Figure 3.6. Regional trends in the probability of dying between ages 30–69 years from the major NCDs in Europe**



**Figure 3.7. Reductions in mortality from coronary heart disease: summary of IMPACT and other studies**



Source: WHO Regional Office for Europe (2016).

## Observation 3: There is room to improve NCD-related health behaviours

### A worrying lack of progress in reducing the prevalence of NCD risk factors

There is a mixed picture for the WHO European Region in reducing the prevalence of NCD risk factors (WHO Regional Office for Europe, 2017c). For example, alcohol consumption is falling (by 4% from 2010 to 2014) and, if trends since 2000 continue, a reduction of 9% is expected by 2025, albeit with wide variations. In contrast, the prevalence of overweight and obesity in the Region is steadily increasing, to alarming

levels: by 2014, more men than women were overweight (62.5% versus 53.7%), whereas women were more likely than men to be obese (23.9% versus 20.9%). The prevalence of raised blood pressure is falling for the Region as a whole; it was estimated to be 23.1% in 2015, and it is higher among men than women in all subregions, particularly the EU13 countries (35.8%). The subregions with the highest burden show the slowest progress, with a relative reduction of 37.1% for the EU15 and 13.2% for EU13 countries. It is difficult to measure and monitor regional trends in some risk factors, such as salt intake and physical inactivity.

## Differences in the share of risk factors

The prevalence of risk factors differs within and between countries, for example by gender and socioeconomic status. The prevalence of tobacco smoking, for instance, is lower in women (range 0.3% to 36.2%) than in men (15.3% to 55.8%). The lowest female tobacco use prevalence is seen in those countries that are also some of the poorest in the Region – although this may change with economic development (Figure 3.8) (WHO Regional Office for Europe, 2017d).

In addition, smoking tends to be most prevalent among disadvantaged populations, especially in countries with higher per capita GNI. Figure 3.9 compares smoking prevalence between those in the lowest income group (Quintile 1) with those in the highest income group (Quintile 5),

indicating that smoking prevalence is higher in the former for virtually all countries.

## The disease burden is attributed to some risk factors more than others

CVDs are the main cause of ill-health in the WHO European Region as a whole. Assessment of population attributable fractions (PAFs) indicates that high blood pressure is the main risk factor, accounting for almost 10–20% of all CVD disability-adjusted life years (DALYs) in countries in both the western and eastern (eastern Europe, central Europe and central Asia) parts of the Region (Figure 3.10). The PAF for high blood pressure is almost two to three times higher than that for behavioural risk factors such as tobacco use and alcohol consumption.

**Figure 3.8. Prevalence of current tobacco smoking in European countries among women and men, 2009 and 2013**

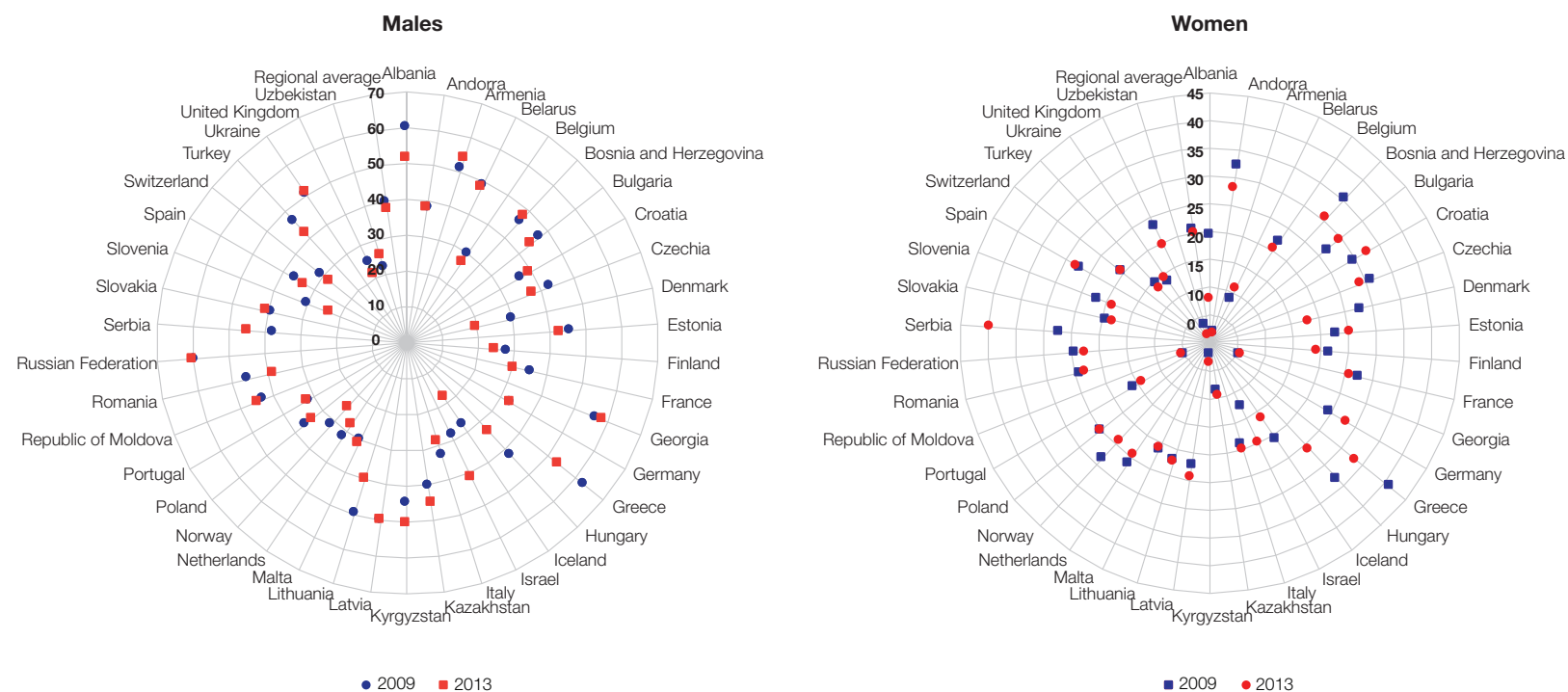
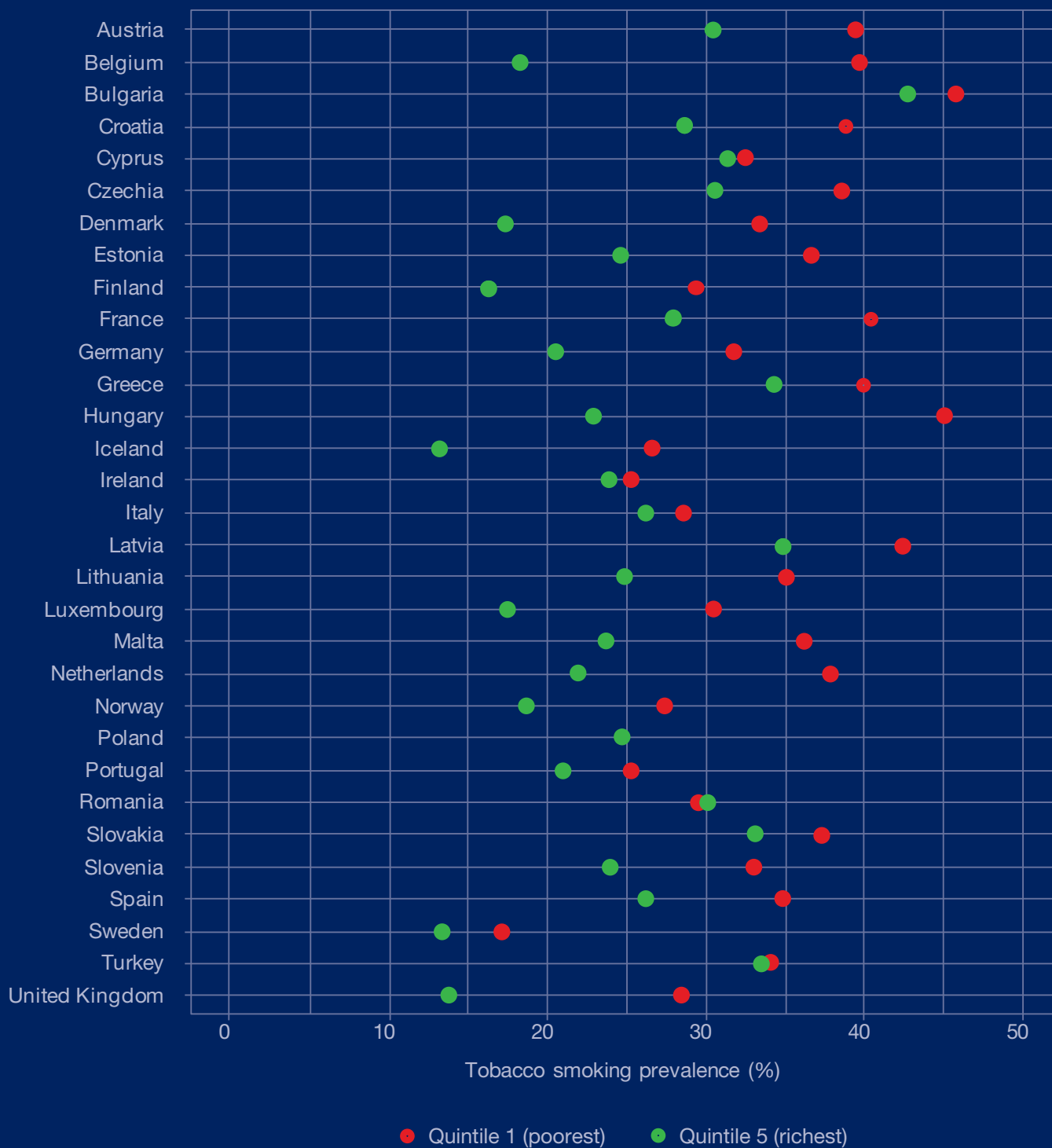


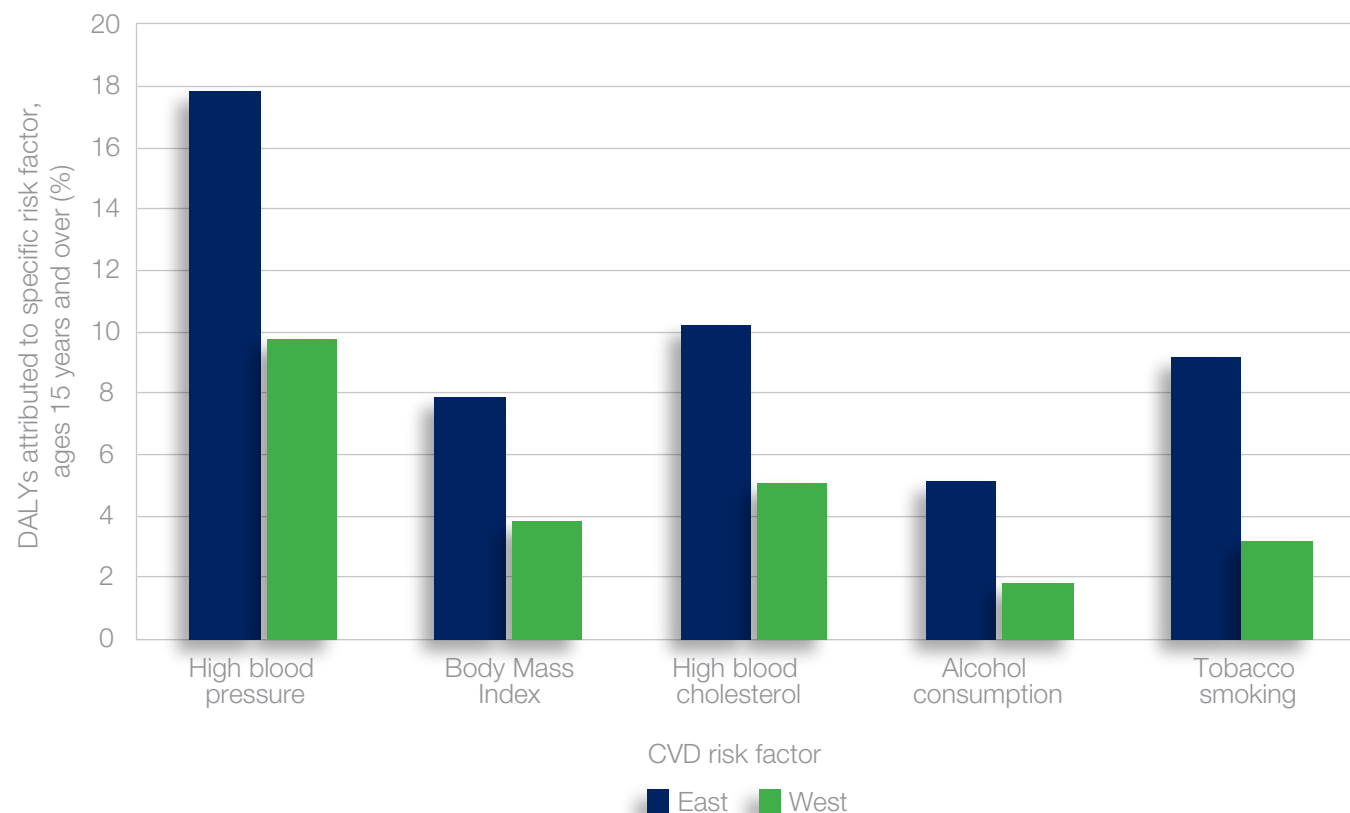
Figure 3.9. Prevalence of tobacco smoking by income quintile in EU countries, 2014



Source: Eurostat (2017).



**Figure 3.10. Cardiovascular disease DALYs, population attributable risk age 15 years and over, by risk factor and subregion, 2016**



Source: GBD 2016 Risk Factors Collaborators (2017).

## Observation 4: Years lived with disability from NCDs are increasing, and multimorbidity is becoming the norm

### Progress in the prevention and control of NCDs is slower than for other causes of ill-health

The health of the population in the WHO European Region is steadily improving: people are living longer and the lifespan in good health is steadily increasing. Between 2000 and 2015, life expectancy at birth increased by 4.5 years, to reach 76.8 years (Global Health Observatory data repository, 2017a), while healthy life expectancy at birth increased by 3.9 years to 68 years (Global Health Observatory data repository, 2017b). NCDs tend to be chronic in nature and are the result of a combination of genetic, physiological, environmental and behavioural factors. Worldwide, they caused 70% of deaths and

78% of years lived with disability (YLD) in 2015. In the WHO European Region, NCDs are by far the largest cause of ill-health, causing 89% of deaths and 85% of YLD in 2015 (Figure 3.11) (WHO, 2017).

Despite the overall improvement in population health, the relative share of the disease burden due to NCDs is increasing for both deaths and disability, indicating that progress in the prevention and management of NCDs is slower than for other causes, such as infectious diseases and injuries. Owing to the large and increasing share of the disease burden caused by NCDs, their prevention and control is absolutely key for improving the health and well-being of the population in the WHO European Region.

## The disease burden increases with age

The distribution of the disease burden in a population depends on three factors: the prevalence of disease in each age and sex group, the amount of ill-health or disability caused by each disease, and the age and sex distribution of the population. In general, NCD prevalence increases rapidly with age, starting at around 18 years, and, as European populations are growing older, the share of the disease burden borne by older age groups is increasing.

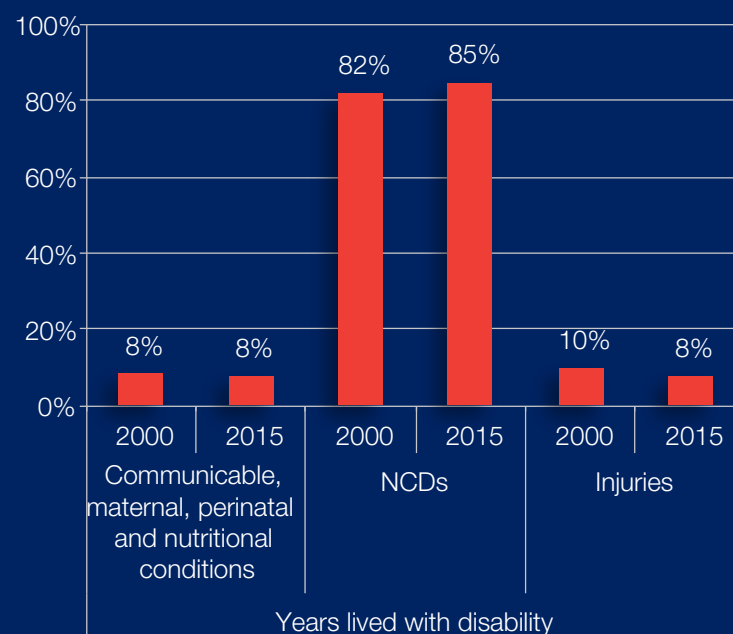
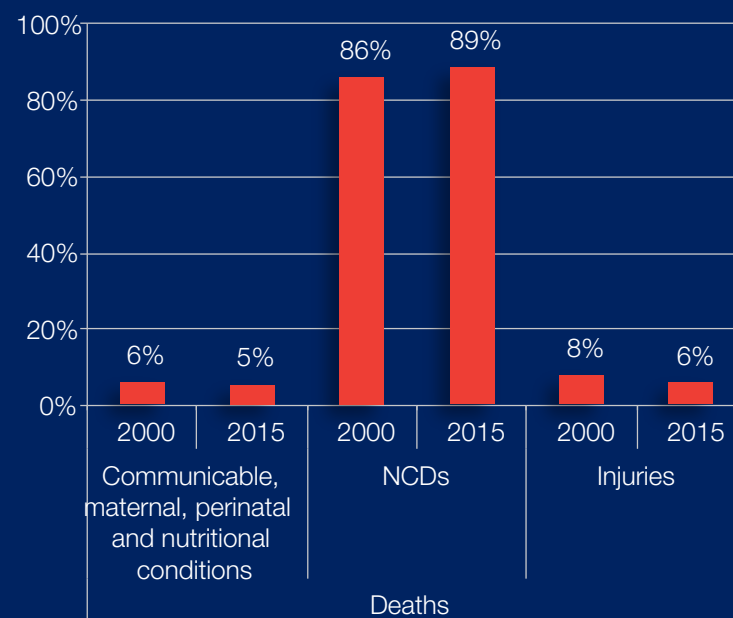
In the WHO European Region as a whole, 70% of deaths from the four major NCDs in 2014 occurred after the age of 70 years, ranging from 78% among the EU15 countries to 62% among CIS countries.

## Women suffer longer

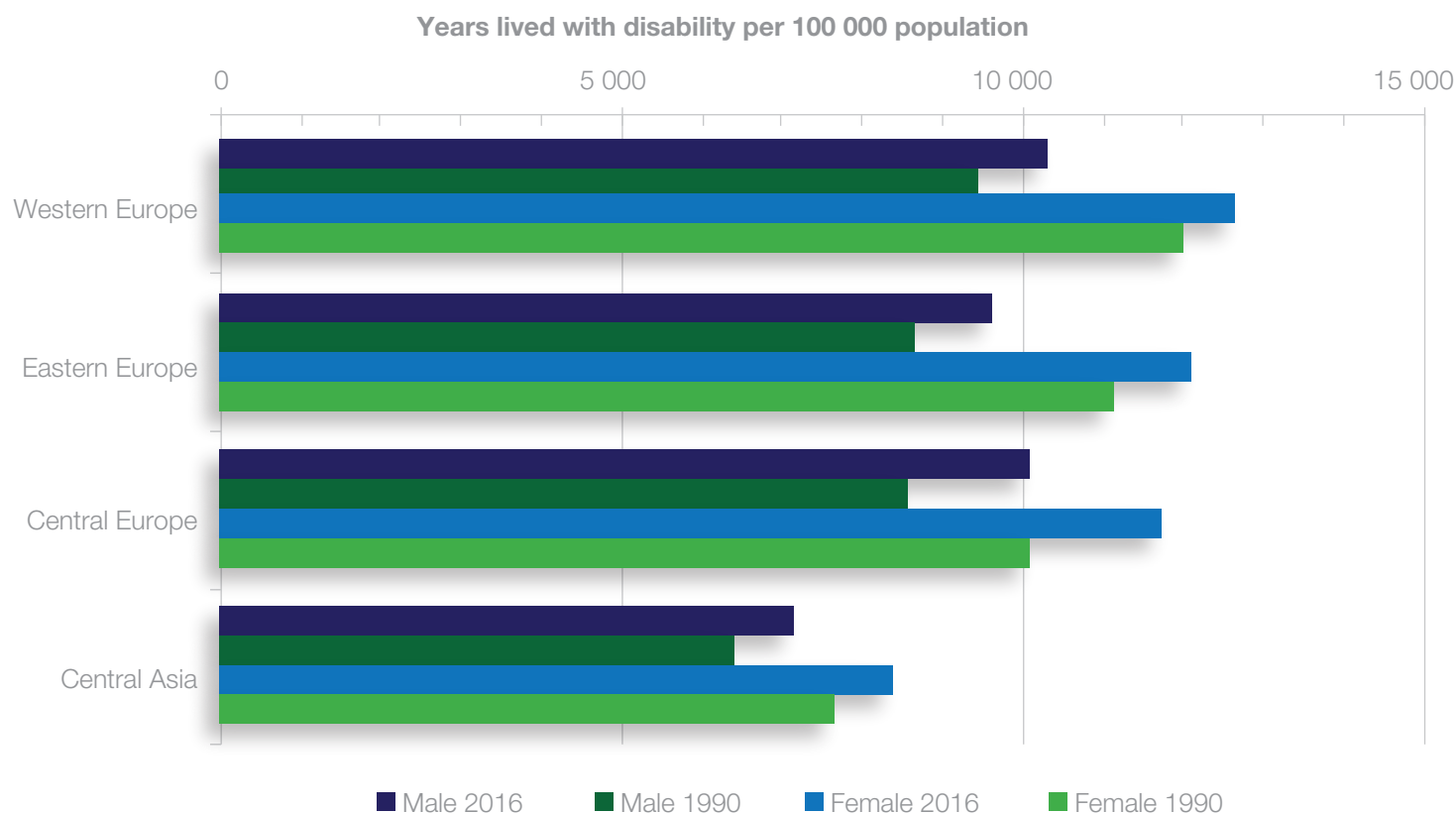
According to 2016 data, disability from NCDs occurs more frequently among women than men, the difference being lowest (16%) in central Asia and highest (23%) in western Europe (Figure 3.12).

Since 2000, YLDs from NCDs have increased by 3.5–10%, with the smallest increase in central Asia and the largest in central Europe. CVD-related disability comprises less than 10% of all YLD from NCDs, and it is lower among men than women. The trends in CVD-related

**Figure 3.11. Relative burden of ill-health by broad disease group in the WHO European Region, 2000 and 2015**



**Figure 3.12. Trends in disability from NCDs among men and women in subregions of Europe, 1990–2016**



Source: Institute for Health Metrics and Evaluation (2017).

disability follow different trajectories: decreasing slowly among western European men and women until around 2010, when they began to reverse; increasing slightly in central Asia; and increasing by some 20% in eastern and central Europe, with a particularly rapid rise in the latter. These changes have coincided with decreasing CVD mortality, suggesting some effect from improved health care and increased longevity.

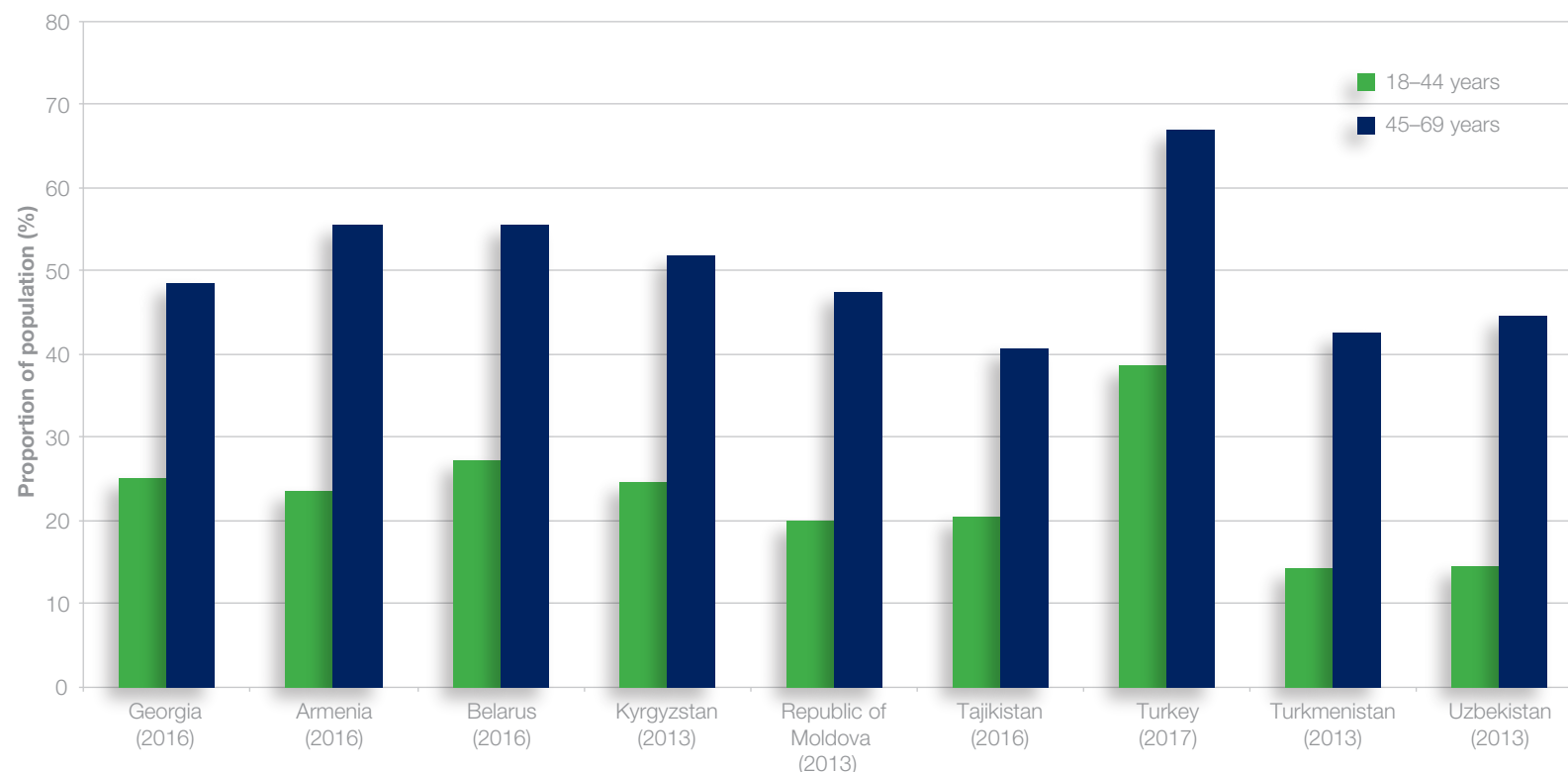
### Multimorbidity increases with age

Multimorbidity is becoming the new norm, particularly as populations age and people survive acute events. Multiple risk factors are also present within individuals: as Figure 3.13 shows, the prevalence of multiple risk factors increases significantly (1.7- to 3-fold) with age.

### The leading causes of years lived with disability extend beyond the four major NCDs but share some common risk factors

While much attention is focused internationally on the four main NCDs, the burden of disease extends far beyond them. As Figure 3.14 shows, in both European subregions the largest fractions of YLDs are due to mental health and substance use disorders and to musculoskeletal disorders. Disability due to mental health and substance use disorders begins in both subregions as early as the age of 5–9 years, increases rapidly until 20 years and remains stable thereafter until around 55 years, when it starts to decrease slowly; the patterns across the two subregions are similar. Disability from musculoskeletal disorders tends to start at around the age of 15 years, increases rapidly until about 30

**Figure 3.13. Prevalence of multiple NCD risk factors in selected countries with WHO STEPS surveys, by population age groups, 2012–2017**



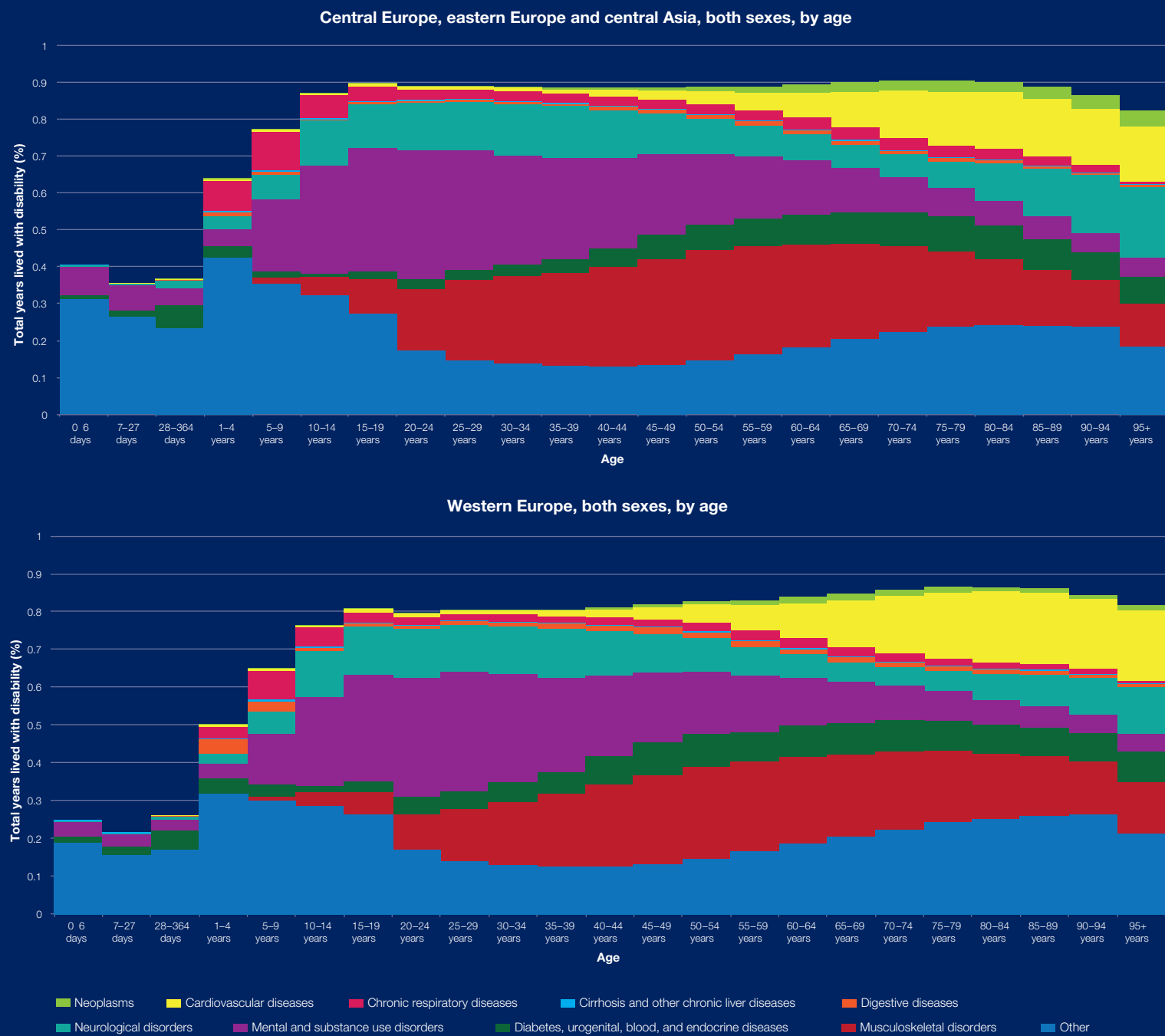
years and is then more or less stable until later ages. Overall, these conditions are more frequent causes of disability than CVDs, cancer, chronic respiratory disease (CRD) or diabetes, and they appear earlier in life than CVDs and CRDs.

Mental health interacts with physical health in many ways, and mental illness is a common comorbidity. It has a considerable impact on risk factors, particularly risk behaviours. Mortality from NCDs is two to three times higher in people with mental health disorders than in those without. In clinical practice, however, mental disorders in patients with NCDs, as well as NCDs in patients with mental disorders, are often overlooked. Premature mortality and disability could be reduced if more attention was paid to comorbidity.

Risk factors for musculoskeletal health are similar to those for other NCDs, and musculoskeletal health can be promoted by their modification, and in particular by increased physical activity, ideal body weight, smoking cessation and moderate use of alcohol, along with injury prevention. Good musculoskeletal health is an important contributor to the prevention of NCDs, given the importance of physical activity.

Oral diseases are the most prevalent NCDs among children and adults in the WHO European Region. Mouth pain and tooth-related problems with eating, chewing and smiling, for example, can have a major impact on people's health and well-being, making it difficult for them to adopt a healthy diet. Oral diseases also share common modifiable risk factors with other NCDs such as diabetes; these include the consumption of sugary drinks, and tobacco and alcohol use.

Figure 3.14. Years lived with disability due to NCDs by age in European countries, by subregion, 2016



Source: Institute for Health Metrics and Evaluation (2017).

## Observation 5: The burden from NCDs is economic, not just health-related

The impact of NCDs reaches beyond health, with implications for economic development. NCDs and their related risk factors reduce productivity at the macroeconomic level through the interruption of full participation in the labour force owing to premature death, sickness-related absence from work (absenteeism) or reduced productivity while at work (presenteeism). The Organisation for Economic Co-operation and Development (OECD) reports that the employment rate of people aged 50–59 years with at least one chronic condition, including a mental health disorder, is lower than that of those without any. Similar observations have been found for people with at least one of the key NCD risk factors, such as smoking, obesity or heavy drinking (OECD/EU, 2016). Given the social gradient in the prevalence of risk factors and NCDs, these labour market outcomes are likely to exacerbate social inequalities.

In low- and middle-income countries, it is estimated that between 2011 and 2030 NCDs will cause more than US\$ 21 trillion in lost economic output, with nearly one third of that figure attributable to CVDs alone (Bloom et al., 2011). Ongoing studies in the European Region are finding similarly large impact. Economic losses from NCDs are already equivalent to 5.4% of gross domestic product in Belarus (WHO Regional Office for Europe, in press a), 3.9% in Kyrgyzstan (Kontsevaya A et al., 2017), and 3.6% in Turkey (WHO Regional Office for Europe, in press b). Spending on health can entail significant opportunity costs for individuals and governments, including decreased investment in education, transportation projects or other forms of human or physical capital that could otherwise yield long-term returns.

## Conclusions

In summary, NCDs are the leading cause of mortality and disability in the WHO European Region, just as they are globally. Looking beyond mortality, people live with chronic and long-term conditions for long periods of time, often facing multiple conditions. NCDs have a significant impact on the lives of individuals and their families, on health systems and on society in general. They also impose a significant economic burden, threatening development. Progress is being made in reducing premature and largely avoidable mortality and morbidity across the whole Region, but there is an opportunity for greater health gains, particularly in the east of the Region. Concerted efforts to reduce excess mortality in working-age men and to address excess mortality from CVDs through both prevention and treatment could accelerate progress towards targets. A life-course approach to health can help to give people the opportunity to live lives free from avoidable disability. This also requires attention to the broader social, economic and environmental determinants of health. The mortality and morbidity patterns observed in this chapter will be linked to the implementation of core NCD interventions and services (Chapter 4) and then to health system barriers that stand in the way of greater progress (Chapter 5). In the rest of this report, potential policy responses to these barriers will be explored, with the ultimate goal of improving NCD outcomes and reducing health inequalities.



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# 4

**Scaling up** core  
interventions and services for  
noncommunicable diseases

Jill Farrington  
Frederiek Mantingh

## Key observations

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Measures to reduce NCD risk factors at population level **could be bolder and better enforced**

1

2

Implementation of NCD interventions at individual level **shows a mixed picture**, with assessment hampered by lack of data

**Greater attention is needed** to the equity dimensions of core NCD interventions and services

3

4

Opportunities for clinical prevention **are being lost** and success in treatment risks being undermined

## Introduction

This chapter reviews the implementation of effective and cost-effective interventions for the prevention and control of NCDs across the 12 countries assessed, as well as within the WHO European Region as a whole. The analysis considers the achievements, as well as the continuing gaps, and it thereby aims to set the scene for subsequent chapters, with a clear thread linking the NCD outcomes to be achieved (Chapter 3), the specific interventions that have been implemented (this chapter), and the barriers to be overcome (Chapter 5).

WHO has identified a set of core NCD interventions and services that are evidence-based, high-impact, cost-effective and affordable and which can be implemented in a variety of health systems. They cover a range of population-level interventions and individual services. These are not new; they have been communicated over the years in a variety of formats, initially in 2011 (WHO & World Economic Forum, 2011) and then in the Global action plan for the prevention and control of NCDs (WHO, 2013a). During 2016–2017, the menu of options was updated (WHO, 2017a) and endorsed by the World Health Assembly in May 2017 (WHO, 2017b).

Monitoring, and even scoring, country progress has increasingly become a feature of WHO's work on NCDs, particularly since 2011, when the Organization was called on to develop a comprehensive framework for monitoring trends and assessing progress made in preventing and controlling major NCDs and their risk factors, following the adoption of the Political Declaration on NCDs by the United Nations General Assembly (United Nations, 2012; WHO, 2013b). By 2017, multiple ways had been developed of assessing a country's progress on NCD prevention and control; some, such as the WHO country capacity surveys (WHO, 2013c), most recently updated in 2017 (WHO,

2017c), are based on self-assessment with documentary evidence, while others take more objective measures of risk factor prevalence, using a standardized tool such as the STEPwise approach to surveillance (WHO, 2017d).

The methodology for this HSS NCD project required the team to assess the extent of implementation of the specific core interventions selected for the study, and criteria were given to guide and, as far as possible with multiple teams, to standardize the approach (WHO Regional Office for Europe, 2014). This chapter summarizes and reviews the scorecards that were developed for the 12 countries studied, both in the context of the country reports and as part of broader reviews of the WHO European Region as a whole, other materials and the literature. The limitations of this approach are recognized: the methodology was not developed for cross-country comparison, and other NCD scorecards may yield different results. The review does not reconsider the progress made by individual countries in the light of subsequent scores (WHO Regional Office for Europe, 2017a); it accepts the strengths and limitations of the methodology of the present study and seeks to make common observations that can inform and guide the synthesis as a whole.

## Population-level interventions

Population-level interventions are grouped in three main areas: prevention of smoking, prevention of harmful use of alcohol, and improve-

**Table 4.1. Core population-level NCD interventions****Core interventions**

- Interventions on tobacco control (WHO Framework Convention on Tobacco Control)
  - Raise tobacco taxes to reduce affordability
  - Smoke-free environments
  - Warning about the dangers of tobacco and tobacco smoke
  - Bans on tobacco advertising, promotion and sponsorship
  - Quit lines and nicotine replacement therapy

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- Interventions to prevent harmful alcohol use
  - Use pricing policies on alcohol including taxes on alcohol
  - Restrictions and bans on alcohol advertising and promotion
  - Restrictions on the availability of alcohol in the retail sector
  - Minimum purchase age regulation and enforcement
  - Allowed blood alcohol level for driving

---

- Interventions to improve diet and physical activity
  - Reduce salt intake and salt content
  - Virtually eliminate trans fatty acids
  - Implement public awareness programmes on diet and physical activity
  - Reduce free sugar intake
  - Increase intake of fruit and vegetables
  - Reduce marketing pressure of food and non-alcoholic beverages to children

ment of diet and physical activity. A set of core interventions within these areas was identified, and the extent of their implementation was assessed. Table 4.1 lists the interventions given in the assessment guide (WHO Regional Office for Europe, 2014).

A “traffic light” system was used to facilitate analysis and summary of results, with interventions rated as extensive (green), moderate (amber) or limited (red). Briefly, these three categories were defined as follows.

- Extensive interventions. There is evidence of extensive commitment demonstrated through strategies, programmes and interventions in line with international best practice, a good implementation track record, and emerging evidence of desired health behaviour change and outcome improvement.
- Moderate interventions. Strategies, programmes or interventions exist, reflecting commitment, but either their design is not in line with international best practice or their implementation has been hampered. Limited health behaviour change has been recorded as a result.
- Limited interventions. Limited activities, limited commitment to real change, initiatives not implemented, and no evidence of population behaviour change for key risk factors.

Table 4.2 shows the list of interventions used in practice and results for the 12 countries assessed. Countries have been anonymized.



**Table 4.2. Overview of assessment of population-level interventions**

Intervention		Country assessed												Average (of those assessed)	
		1	2	3	4	5	6	7	8	9	10	11	12		
<b>Interventions on tobacco control</b>	Raise tobacco taxes	●	●	●	●	●	●	●	●	●	●	●	●	●	1.8
	Ensure smoke-free environments	●	●	●	●	●	●	●	●	●	●	●	●	●	1.6
	Warnings on the dangers of tobacco and smoking	●	●	●	●	●	●	●	●	●	●	●	●	●	1.9
	Ban advertising, promotion and sponsorship	●	●	●	●	●	●	●	●	●	●	●	●	●	1.8
	Provide quit lines and nicotine replacement therapy	●	●	●	●	●	●	●	●	●	●	●	●	●	1.4
<b>Interventions to prevent harmful alcohol use</b>	Raise taxes on alcohol	●	●	●	●	●	●	●	●	●	●	●	●	●	1.4
	Restrictions or bans on advertising and promotion	●	●	●	●	●	●	●	●	●	●	●	●	●	1.8
	Restrictions on retail availability of alcohol	●	●	●	●	●	●	●	●	●	●	●	●	●	1.8
	Minimum purchase age regulated and enforced	●	●	●	●	●	●	●	●	●	●	●	●	●	1.9
	Allowed blood alcohol content for driving	●	●	●	●	●	●	●	●	●	●	●	●	●	2
<b>Interventions to improve diet and physical activity</b>	Reduce salt intake and salt content of foods	●	●	●	●	●	●	●	●	●	●	●	●	●	1.2
	Virtually eliminate <i>trans</i> fatty acids from the diet	●	●	●	●	●	●	●	●	●	●	●	●	●	1.2
	Reduce free sugar intake	●	●	●	●	●	●	●	●	●	●	●	●	●	1.3
	Increase intake of fruit and vegetables	●	●	●	●	●	●	●	●	●	●	●	●	●	1.6
	Reduce marketing pressure on children	●	●	●	●	●	●	●	●	●	●	●	●	●	1.2
	Promote awareness about diet and activity	●	●	●	●	●	●	●	●	●	●	●	●	●	1.8

Key: ● Limited [1-1.4]; ● Limited-Moderate [1.5-1.9]; ● Moderate [2-2.4]; ● Moderate-Extensive [2.5-2.9]; ● Extensive [3]; ● Not assessed.

## Observation 1: Implementation of the core population interventions is moderate at best, and particularly weak for interventions related to nutrition

### Tobacco

All 12 countries included in this study have ratified the WHO Framework Convention on Tobacco Control (WHO FCTC) (WHO, 2017e); however, the assessments show that current policies are not in line with the legal obligations set by the WHO FCTC, and that the measures recommended in the WHO MPOWER tool (WHO, 2017f) for tobacco control are not fully in place. There is considerable scope to step up tobacco control. Of the 11 countries that were formally scored, only two have extensive coverage with the interventions related to tobacco taxes, smoke-free environments and tobacco warnings, while the other nine have a limited–moderate score. For bans on advertising and the provision of quit lines, only one country was assessed as having extensive coverage, with the other countries' scores being limited–moderate.

The tobacco control intervention related to the provision of quit lines and nicotine replacement therapy has the lowest scores, on average. Looking at the details of the scores, it appears that the low scoring is due to the lack of affordability of tobacco cessation drugs. While free-of-charge cessation services are available in some of the countries, nicotine replacement therapy is free of charge in only one country (Turkey). This low proportion is comparable to the WHO European Region as a whole, where only nine of the 53 Member States cover the cost of both the national quit line and the treatment of dependence (WHO Regional Office for Europe, 2017b).

Tobacco taxation is recommended by WHO as the most effective way to reduce tobacco use. While tobacco taxation has been increased in most of the countries assessed, only two of these have reached the WHO-recommended level of total tax of 75% of the retail price of cigarettes (Turkey, 81.7% and Estonia, 76%), while two others (Croatia, 71% and the former Yugoslav Republic of Macedonia, 72%) are close to that level. Total tobacco tax is 42.5% of the retail price in Belarus, 40% in Kazakhstan and 20% in Tajikistan. In the WHO European

Region as a whole, raising taxes on tobacco is also the measure least adopted by Member States. This goal is reported to be challenging to achieve because the budgetary processes for implementing tobacco tax increases involve a number of actors, including the ministry of finance (WHO, 2015).

Despite overwhelming evidence that smoke-free legislation reduces the harms from second-hand smoke and supports the social norm of not smoking tobacco, the 2017 European report on tobacco control (WHO Regional Office for Europe, 2017b) also finds low implementation of this measure. The absence of a legal mechanism for enforcing smoke-free environments, as is found in Belarus and Serbia, for example, can lead to high exposure of the population to second-hand smoke on public transport and in other public places.

Article 11 of the WHO FCTC (WHO, 2008) specifies that warning messages should be 50% or more, but no less than 30%, of the principal display areas of tobacco packages, and the European Union (EU) and the Eurasian Economic Union have set levels of 65% and 50%, respectively (European Union, 2014; Eurasian Economic Commission, 2016). Following these requirements, EU member countries, such as Croatia, have introduced changes in order to harmonize their legislation on tobacco products with EU regulations. At the time of the assessment, Turkey had health messages covering 65% of the front and back of the package with pictorial warnings, following the EU approach, even though it was not an EU member country. Other countries, such as Belarus, Estonia, Kazakhstan, Serbia and the former Yugoslav Republic of Macedonia, with levels ranging from 30% to 40%, have room to improve and implement larger warnings. The 2017 European report on tobacco control (WHO Regional Office for Europe, 2017b) notes a sharp rise in warning messages on cigarette packages, particularly between 2015 and 2017. The 12 country assessments cover the period between 2012 and 2017, so later improvements may have occurred but may not have been captured in this report.

A strong stance on tobacco control produces results, as reflected in the trends of smoking prevalence. In Serbia, the WHO FCTC entered into force on 9 May 2006, and the Strategy of Tobacco Control 2007–2015 and the Action Plan 2007–2011 were approved by the Government in 2007. Despite these measures, several tobacco control initiatives and regulations have been halted or discontinued since then. For example, the Council for Tobacco Control of Serbia was established in 2006 but ceased to be active after 2011, and the earmarking of taxation revenue from tobacco products was established in 2005 but cancelled in 2012 (0.9% was for smoking prevention). This was associated with a reversal of previous positive trends in tobacco smoking prevalence, with increasing prevalence seen from around 2006 to 2013 in both adults and young people (Figure 4.1). The change in the number of daily women smokers is particularly significant.

## Alcohol

On average, the 12 countries assessed have low to moderate scores across the alcohol interventions. Although there is strong evidence that taxation leads to reductions in heavy drinking occasions and regular harmful drinking, this intervention has the lowest average score, with only one country reporting extensive implementation. Only a few countries also achieved extensive coverage with the other four alcohol control measures assessed. In the WHO European Region as a whole, the proportion of Member States fully achieving key alcohol control measures fell from 21% in 2015 to 13% in 2017, which is a worrying trend (WHO Regional Office for Europe, 2017c). In terms of the specific interventions, the 12 countries are comparable to the rest of Europe; in the WHO European Region, on average, Member States perform well in the area of drink-driving policies but poorly on pricing policies (WHO Regional Office for Europe, 2017d).

Nevertheless, there are some positive findings regarding taxation. Increases in excise taxes have been introduced in the framework of excise tax harmonization across member countries of the Eurasian Economic Union and its customs union. In Belarus, for example, this has led to tax rates being increased twice in 2014 alone, with taxation

**Figure 4.1. Prevalence of daily smokers in the Serbian population (adults and young people)**



Source: Institute of Public Health of Serbia (2014a); Institute of Public Health of Serbia (2014b).

following the price index. On the other hand, taxation measures are not being used to their full potential. Several countries have applied exclusion criteria in relation to alcohol taxation: for wine in Croatia and the Republic of Moldova, for example, or for non-domestic products in Kyrgyzstan. Furthermore, special taxes on products attractive to young people, such as flavoured alcoholic beverages or alcopops, are not levied in some of the countries assessed (Belarus, Estonia, Kazakhstan, Kyrgyzstan, Serbia, the former Yugoslav Republic of Macedonia and Turkey).

According to the European action plan to reduce the harmful use of alcohol 2012–2020 (WHO Regional Office for Europe, 2012), implementation of even small reductions in the availability of alcohol can be beneficial for health and reduce harm to people other than the drinker. A good start is educational and governmental venues. There is a ban on alcohol consumption in approximately one third of governmental and educational venues (WHO Regional Office for Europe, 2013).

## Nutrition and physical activity

Implementation of the nutrition interventions is relatively weak compared to those for tobacco and alcohol control. Many countries make very few, if any, interventions related to salt, *trans* fatty acids and marketing to children. The only two interventions that received a limited–moderate average score are the increased intake of fruit and vegetables, and the promotion of awareness about diet and physical activity. For the WHO European Region as a whole, between 2015 and 2017 there appears to have been a decrease in the proportion of Member States with national salt reduction policies (from 58% to 47%), but an increase in the proportion with national policies that limit saturated fatty acids and eliminate industrially produced *trans* fatty acids in the food supply (from 42% to 62%) (WHO Regional Office for Europe, 2017c).

While the effectiveness of implementation of the core population interventions can be determined by measuring trends in the specified indicators, the overall surveillance systems to do this have been shown

to be weak, especially in the area of nutrition and physical activity. In Belarus, no information was available at the time of assessment related to the interventions on salt, *trans* fats and physical activity, which made it difficult to rate the levels of implementation. There was a similar picture in Estonia, Serbia and Tajikistan, where no data on salt intake were available at the time of assessment. And in Armenia, Kazakhstan and the former Yugoslav Republic of Macedonia, it was noted that ongoing surveys to better assess trends in physical activity, nutrition and obesity in adult populations had not yet been implemented.

The European Food and Nutrition Action Plan 2015–2020 (WHO Regional Office for Europe, 2015a) notes that the marketing of products high in energy, saturated fat, *trans* fats, sugar or salt influences children’s food preferences and habits, and there is emerging evidence that these effects persist into adulthood. In Hungary, the number of television channels available increased from 38 in 2006 to 538 in 2009, a change of 1316%, giving more opportunities for advertising to children. Among the countries assessed, regulations appear to be weak when it comes to restricting the advertising of food and nonalcoholic beverages and reducing marketing pressure on children (Belarus, Estonia, Kazakhstan, the former Yugoslav Republic of Macedonia). Some positive examples are noted, however: in Turkey, the Law on the Establishment of Radio and Television Enterprises and their Media Services (2011) restricts the marketing of certain foods and beverages in association with children’s programmes. In the WHO European Region, between 2015 and 2017, there was an increase in the proportion of Member States with full implementation of the WHO set of recommendations on marketing of foods and non-alcoholic beverages to children, from 42% to 66%, including some of the countries assessed (WHO Regional Office for Europe, 2017c).

There are positive elements related to the promotion of awareness of diet and physical activity. In Belarus, for example, facilities for physical activity and sports are available and 87% of the population is physically active during their leisure time.

## Observation 2: Poor enforcement of regulations undermines policy measures and reduces impact

Poor enforcement of regulations reduces the successful implementation of tobacco control measures. Even though there might be a law in place on smoke-free environments, for example, countries may struggle with enforcement because of too few inspectors, the lack of a mechanism for imposing sanctions and fines for violations, or the lack of a focal point to control and monitor implementation. Industry lobbying and resistance caused by the absence of political commitment have also been found to impede or halt the adoption and implementation of laws and regulations. As a result, heads of organizations, businesses, transport, public places, and the hospitality sector often do not comply with legislative provisions.

A similar situation is found with alcohol control, with poor enforcement of regulatory measures that address the availability of alcohol in several countries, and in some cases especially its availability for young people. Enforcement issues have also been identified related to limitations on the advertising of alcoholic beverages, the minimum purchase age, and the blood alcohol limit for driving. National regulations on alcohol sponsorship and sales promotion may be in place, but alcohol companies often use indirect marketing to promote their products.

Enforcement issues have also been observed regarding dietary measures, for example, for the sale of unhealthy food close to educational institutions.

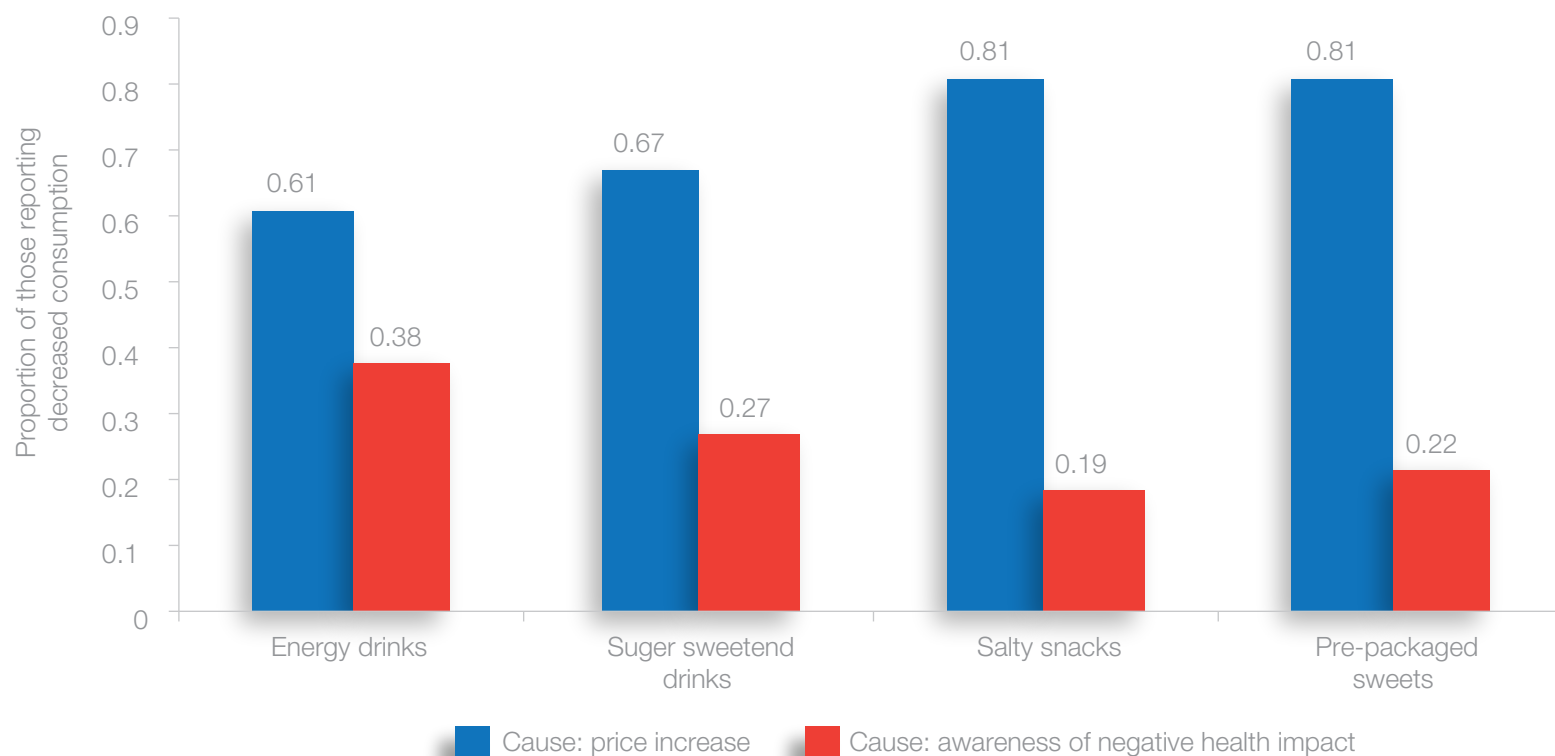
On the other hand, an example of successful enforcement of legislation in the area of nutrition can be found in Hungary (WHO Regional Office for Europe, 2015b). In 2011, the Hungarian Parliament passed a law creating the public health product tax. This is a tax on food products containing unhealthy levels of sugar, salt and other ingredients, imposed in an effort to reduce their consumption, promote healthy eating and create an additional mechanism for financing public health services. After the law came into force, the tax was refined several times in reaction to manufacturers who had made superficial modifications to unhealthy recipes with the aim of tax evasion. The refinements allowed policymakers to combat the manoeuvring of producers and to tax those producers who did not genuinely reformulate their products to make them healthier. The impact on the consumption of unhealthy food items was significant, with reduced consumption of taxable unhealthy foods in the four years since introduction of the tax (Figure 4.2).

## Observation 3: Consideration of the equity impact of interventions is missing, although inequalities in NCD risk factor prevalence are highlighted

Inequalities in NCD risk factor prevalence in the WHO European Region have been observed, based on level of education, sex, occupation, ethnicity, housing tenure and other measures of wealth (see also Chapter 3). For example, people in lower socioeconomic groups have higher rates of smoking than those in higher socioeconomic groups; they also commonly start smoking at a younger age, smoke more cigarettes per day and stop smoking less often (Schaap, 2010). Understanding what works to reduce risk factor prevalence across all social groups is critical if these behaviours are to be addressed effectively (Loring, 2014a).

What works on average may not work for everyone and may make inequities worse rather than better. For example, mass media campaigns, smoke-free workplace policies and smoking cessation services have all been found to be preferentially effective in more advantaged social groups (Thomas et al., 2008; Federico et al., 2012). On the other hand, tobacco price increases are an example of an intervention with a strong potential to reduce inequities, because demand for tobacco is more responsive to price in low-income than in higher-income groups (Chaloupka et al., 2012).

**Figure 4.2. Reasons for decreased consumption of unhealthy food items, Hungary**



Source: National Institute for Health Development (2013).

Ten of the 12 assessments highlighted inequalities in risk factor prevalence but did not emphasize the equity impact of population interventions. In Estonia, the assessment team noted good progress with interventions for tobacco control but also stated that future national smoking policies should consider implementing targeted, gender-specific policies that take into account socioeconomic factors, in order to reduce inequalities. The report on Armenia highlights the fact that the average prevalence of heavy alcohol consumption differs by gender, age and level of education, but the potential differential impact of alcohol-related core interventions on specific groups was not discussed. Similarly, the reports on Tajikistan and Turkey emphasize that the prevalence of being overweight differs by gender, age group and geographical region. In the report on Tajikistan, there is some discussion of the potential challenges to the implementation and uptake of interventions to promote physical activity, related to sociocultural and socioeconomic factors and differences between urban and rural environments.

In order to reduce inequities in NCD outcomes, priority must be given to the universal interventions that are likely to have the greatest impact, such as tobacco taxation, as well as to additional, more targeted measures that take into account the effect of a specific intervention on different socioeconomic groups. For example, when education and persuasion are chosen as a strategy for bringing about behaviour change in the context of alcohol control, this should be done as part of a comprehensive approach, because they are likely to exacerbate inequities if used alone, and specific efforts must be made to ensure that the messages and methods are designed with and for the most disadvantaged groups (Loring, 2014b). Tobacco taxation, a policy measure with the potential to reduce inequities and also the most effective way to reduce tobacco use, was only implemented in two of the countries up to the WHO-recommended level of total tax of 75% of the retail price of cigarettes.

In the WHO European Region as a whole, there are several good examples of explicitly designing NCD population interventions with



a focus on equity. In Spain, effective enforcement, notably in workplaces that disproportionately involve low-income workers in less secure employment, ensures that everyone benefits from the policy on smoke-free environments (Loring, 2014a). In Norway, the Romsås in Motion project, a comprehensive approach to increasing physical activity in a low-income, ethnically diverse area, has been implemented. Because the project simultaneously addressed individual, social and environmental determinants, the most deprived participants reported the most positive results (Loring & Robertson, 2014). In Ireland and the United Kingdom, the Food Dudes Healthy Eating Programme, a school-based intervention designed to increase consumption of vegetables and fruit among children, has proven to be effective in schools with pupils from all socioeconomic levels, and the effects are greatest in children who had the lowest fruit and vegetable consumption before the intervention (Loring & Robertson, 2014).

## Individual-level interventions

Individual-level interventions are grouped in three main areas: cardiovascular diseases (CVDs) and diabetes, diabetes and cancer. A set of core interventions within these areas was identified and listed within the assessment guide and the extent of their implementation was assessed (Table 4.3) (WHO Regional Office for Europe, 2014).

In the same way as for the population-level interventions, a “traffic light” system was used to facilitate analysis, with interventions rated as extensive (green), moderate (amber) or limited (red).

Table 4.4 summarizes the scorecards for the implementation of individual-level interventions as used in practice during country assessments. The assessment process for these individual services was more selective: some country reports covered all the major NCDs, others focused on one specific area, such as diabetes care. Given this, the scorecards are less complete than those in the preceding section (Table 4.2), so this section also draws on the text within the reports themselves. In general, cancer interventions were the least studied, and CVDs the most.

Four main observations may be made on the basis of analysis of the 12 country assessments and the broader context.

**Table 4.3. Core individual-level NCD interventions**

### Core interventions

- Interventions for CVDs and diabetes
  - Risk stratification in primary health care, including hypertension, cholesterol, diabetes and other CVD risk factors
  - Effective detection and management of hypertension, cholesterol and diabetes through multidrug therapy based on risk stratification
  - Effective primary prevention in high-risk groups and secondary prevention after acute myocardial infarction (AMI), including acetylsalicylic acid
  - Rapid response and secondary care interventions after AMI and stroke

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- Interventions for diabetes
  - Effective detection and general follow-up
  - Patient education and intensive glucose management
  - Hypertension management among diabetes patients
  - Prevention of complications (e.g. eye and foot examination)

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- Interventions for cancer
  - Prevention of liver cancer through hepatitis B immunization
  - Screening for cervical cancer and treatment of pre-cancerous lesions
  - Vaccination against human papillomavirus (HPV) as appropriate if cost-effective according to national policies
  - Early case-finding for breast cancer and timely treatment of all stages
  - Population-based colorectal cancer screening at age >50 years linked with timely treatment
  - Oral cancer screening in high-risk groups linked with timely treatment



Table 4.4. Overview of assessment of individual-level interventions

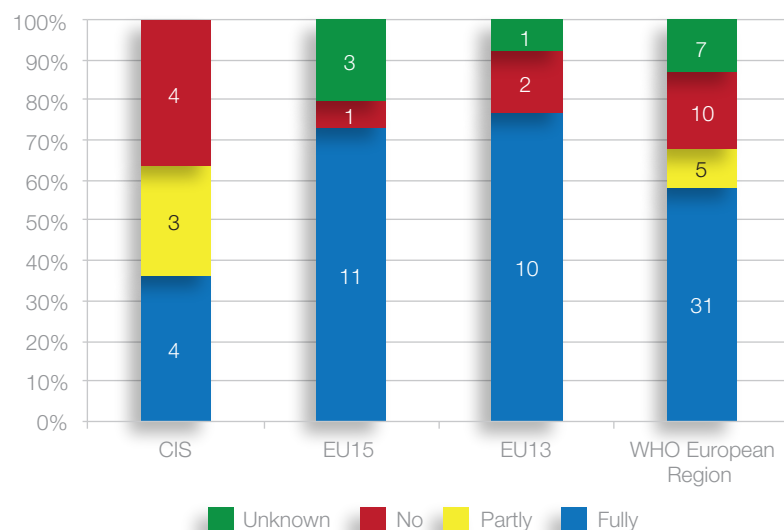
Intervention		Country assessed												Average (of those scored)	
		1	2	3	4	5	6	7	8	9	10	11	12		
CVDs and diabetes	Risk stratification in primary health care	●	●	●	●	●	N/A	●	●	●	Partly assessed but not scored	Partly assessed but not scored	●	1.7	
	Effective detection and management of hypertension	●	●	●	●	●	N/A	●	●	●			●	●	1.3
	Effective primary prevention in high-risk groups	●	●	●	●	●	N/A	●	●	●			●	●	1.6
	Effective secondary prevention after AMI including acetylsalicylic acid	●	●	●	●	●	N/A	●	●	●			●	●	2.1
	Rapid response and secondary care after AMI and stroke	●	●	●	●	●	N/A	●	●	●			●	●	1.8
Diabetes	Effective detection and general follow-up	N/A	●	●	●	●	●	●	N/A	N/A	N/A	N/A	●	1.8	
	Patient education on nutrition, physical activity and glucose management	N/A	●	●	●	●	●	●	N/A	N/A	N/A	N/A	●	1.8	
	Hypertension management among diabetes patients	N/A	●	N/A	●	●	●	●	N/A	N/A	N/A	N/A	●	1	
	Preventing complications	N/A	●	N/S	●	●	●	●	N/A	N/A	N/A	N/A	●	1.6	
Cancer	Hepatitis B immunization	Partly assessed but not scored	N/A	N/S	Partly assessed but not scored	N/A	N/A	●	N/A	N/A	N/A	Partly assessed but not scored	●	3	
	Cervical cancer screening and treatment of lesions		N/A	N/S		N/A	N/A	●	N/A	N/A	N/A		●	1.5	
	HPV vaccination		N/A	N/S		N/A	N/A	N/A	N/A	N/A	N/A		●	1	
	Early case-finding for breast cancer and timely treatment of all stages		N/A	N/S		N/A	N/A	●	N/A	N/A	N/A		●	1.5	
	Population-based colorectal cancer screening at age > 50 linked with timely treatment		N/A	N/S		N/A	N/A	N/A	N/A	N/A	N/A		●	2	
	Oral cancer screening in high-risk groups linked with timely treatment	Not assessed or scored in any country													

Key: ● Limited [1-1.4]; ● Limited-Moderate [1.5-1.9]; ● Moderate [2-2.4]; ● Moderate-Extensive [2.5-2.9]; ● Extensive [3]; ● N/S = not scored; N/A = not assessed

## Observation 4: Cardiovascular risk stratification is increasingly common within primary care but may not be directing treatment plans and leading to better risk factor control

For the nine countries that were formally scored, achievement of cardiovascular risk stratification was limited–moderate on average. The other two countries that were assessed but not scored are likely to have achieved a similar level. This is not dissimilar to the situation within the WHO European Region as a whole. According to the WHO NCD Country Capacity Survey in 2017 (WHO, 2017g), just over half (58%) of Member States in the Region have cardiovascular risk stratification in place and relevant essential drugs available in more than half of primary care facilities (Figure 4.3); this proportion increased from 30% in 2015. The proportion of countries achieving this level in 2017 was higher for the member countries of the EU (both those joining before and those joining after 2004) than for those of the Commonwealth of Independent States (CIS).

**Figure 4.3. Proportion of Member States in the WHO European Region that have in place provision of drug therapy, including glycaemic control, and counselling for eligible persons at high risk to prevent heart attacks and strokes, with emphasis on the primary care level**



Assessment of cardiovascular risk factors (including diabetes) can be unsystematic, with low detection rates. At the time of the assessments, an ad hoc approach to screening for cardiovascular risk factors was frequently adopted in primary care. In Turkey, for example, family doctors did not systematically take part in screening and management of cardiovascular risk factors. In Croatia, the introduction of “preventive e-panels” in primary care had improved the risk stratification of target populations, but they were not yet systematically applied. In general, hypertension and diabetes detection rates are low: when compared with population surveys, detection in clinical settings was a fraction (only 20–25% or less) of what might be expected in some countries (Armenia, Croatia, Kazakhstan and the Republic of Moldova, for example), given the prevalence of risk factors.

The use of decision support systems is rare. In Estonia and Turkey, for example, at the time of assessment there were no visual aids or computer-based decision algorithms to facilitate diagnosis and clinical decision-making. In the former Yugoslav Republic of Macedonia, the risk stratification tool had been included in the clinical software systems being used in primary care, but the opportunities for automating and streamlining patient pathways and management were not being fully utilized. The WHO NCD Country Capacity Survey in 2017 found that the most commonly used cardiovascular risk prediction tool is that of the European Society of Cardiology (19 countries), followed by that of WHO/International Society of Hypertension (13 countries).

Insufficient attention is being paid to the control of cardiovascular risk factors. In Croatia, for example, hypertension detection is satisfactory but management remains a challenge, thought to be due to lack of continuity of care and poor adherence to treatment. Furthermore, monitoring systems, or the lack of them, make it difficult to follow trends in individual patients or to have oversight of a practice population. In Serbia, cardiovascular risk scores did not appear to be systematically documented in health records, and oversight of high-risk patients within a practice population was not easy. In the former Yugoslav Republic of Macedonia, there was little information at the time of assessment about the coverage of target populations or the impact of services. Financial incentives, where they exist in relation to cardiovascular risk

factors, are frequently linked to procedural indicators or coverage, rather than to control (Armenia, Estonia). In Kazakhstan, a review of diabetes control in Almaty found that more than 8 in 10 people with diabetes were poorly controlled (Davletov, 2016).

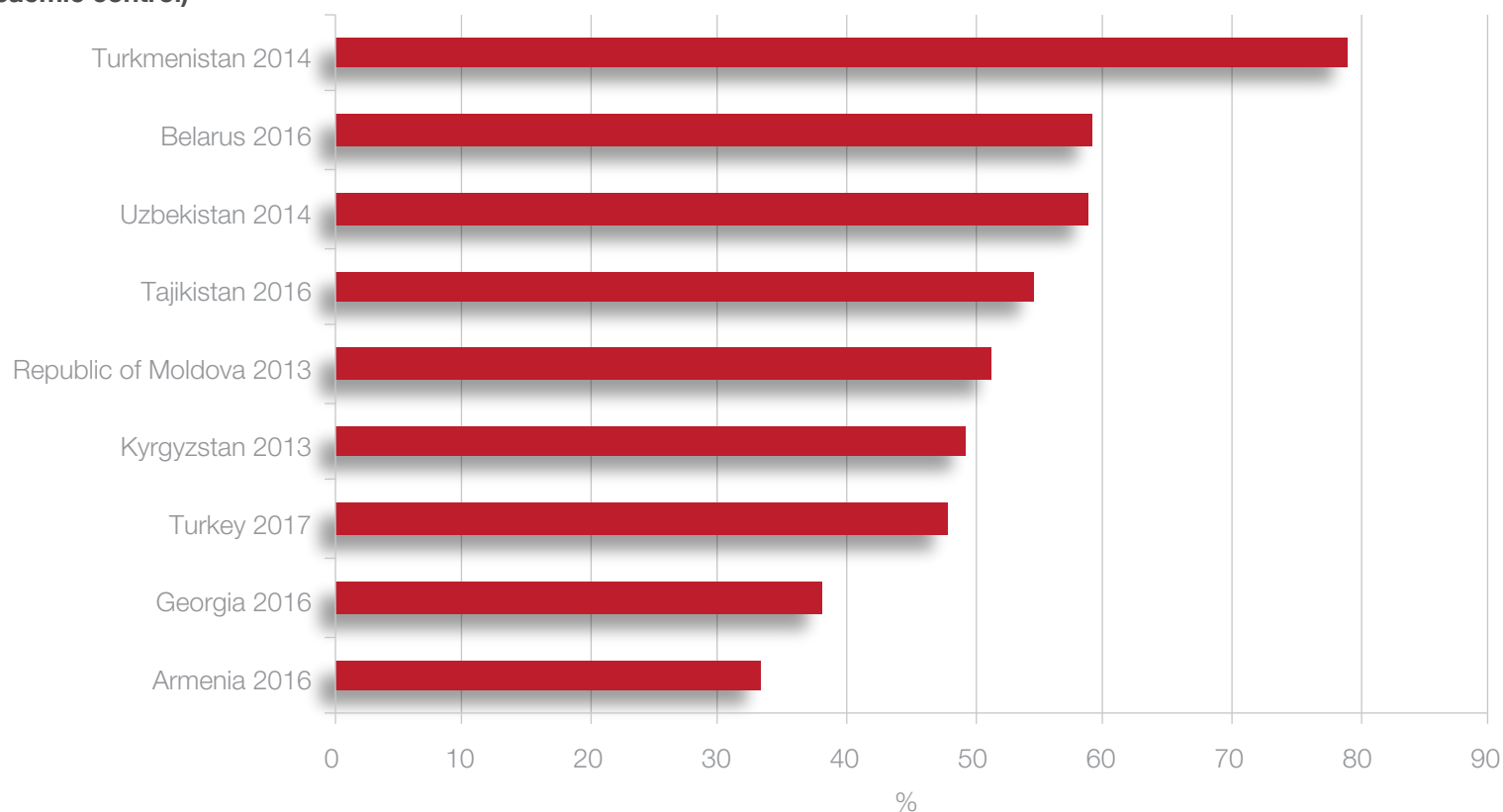
Cardiovascular risk stratification may not be directing management, and its purpose and approach may not be fully understood. In Kazakhstan, at the time of assessment, adults over 40 years were screened for cardiovascular risk factors every two years, but risk scoring did not appear to lead to risk stratification and direction of disease management. In Tajikistan, hypertension detection was found to be low and primary care providers did not explicitly estimate cardiovascular risk and link it with treatment decisions. In several countries assessed, such as Kyrgyzstan, the Republic of Moldova and the former Yugoslav Republic of Macedonia, it was not clear whether risk scores were actually used to inform patient management decisions,

which in one case appeared to result in overtreatment with aspirin and undertreatment with statins. A review of data from WHO STEPS surveys in nine countries, six of which participated in the NCD HSS assessments, found that on average only around half (52%) of adults at high cardiovascular risk (30% or more risk of a fatal or non-fatal event in 10 years)<sup>4</sup> receive counselling and treatment; the range is 33% to 79% (Figure 4.4).

Limited task-sharing is in place. In Estonia, for example, nurses are expected to assess cardiometabolic risk as part of patient triage in primary care facilities. Generally, however, nurses appear to be underutilized in the process of cardiovascular risk assessment, although

<sup>4</sup> A 10-year CVD risk of  $\geq 30\%$  is defined according to age, sex, blood pressure, smoking status (current smokers or those who quit smoking less than one year before the assessment), total cholesterol, and diabetes (previously diagnosed or a fasting plasma glucose concentration  $>7.0$  mmol/l (126 mg/dl)).

**Figure 4.4. Proportion of adults\* with high cardiovascular risk who are receiving counselling and drug therapy (including glycaemic control)**



Source: WHO STEPS surveys.

\*Adults 18-69 years, but for Kyrgyzstan 25-64 years, Turkmenistan 18-64 years, Uzbekistan 18-64 years and Azerbaijan 18+ years.

they seem to play a greater role in chronic disease clinics and follow-up of patients with diabetes, for example. In Kazakhstan, nurses can prescribe some medications, request investigations and make some management decisions within a chronic disease clinic, for ex-

ample, whereas in other countries, nurse-led foot clinics are not an integral part of diabetes care. Instead, patients can be referred to specialists for checks, potentially at a higher cost to the health system and with more inconvenience to the patient.

## Observation 5: Effective rapid response to acute myocardial infarction and stroke is becoming more widespread (albeit with that for stroke lagging behind), but secondary prevention is an underutilized intervention

For the nine countries that were formally scored, the coverage with rapid response and secondary care after AMI and stroke was considered to be limited–moderate, on average; of these countries, those with fewer resources had even more limited coverage.

Timeliness of care, so crucial for achieving best outcomes for acute coronary syndrome (ACS) and stroke, is frequently a problem. In the Republic of Moldova, ambulance services are well organized but patients present late, and only one third do so via the ambulance service. In a number of other countries, the pathway of timeliness was not routinely monitored.

Despite the presence of national clinical guidelines, some drugs whose use is not evidence-based are frequently prescribed. In the Republic of Moldova, at the time of assessment, non-evidence-based medications appeared to be prescribed to patients admitted with hypertensive emergencies or ACS, despite the availability of national clinical guidelines. In Tajikistan, stroke care included outdated practices, such as early lowering of elevated blood pressure, or non-evidence-based practices such as the use of neuroprotective agents (the latter also in Kyrgyzstan).

According to the 2017 WHO NCD Country Capacity Survey (WHO, 2017g), evidence-based national guidelines, protocols or standards for the management (diagnosis and treatment) of each of the major NCDs through a primary care approach are present and implemented in more than 50% of facilities in 68% of the 53 Member States of the WHO

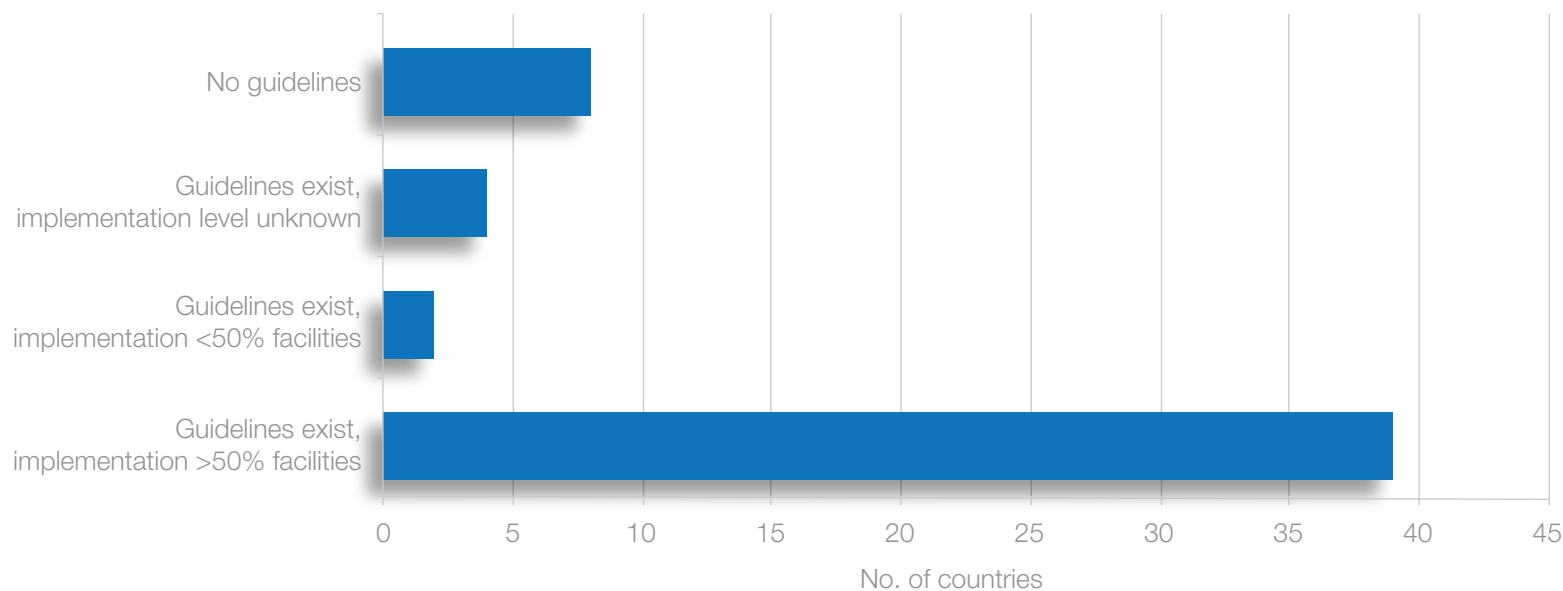
European Region, an increase since 2015 (45%) (Figure 4.5). This pattern is widespread, with no significant difference between subgroups of countries in the Region. CVD guidelines are the most common: they were in existence and implemented in 74% of countries in 2017.

Acute services are not organized to benefit the whole country. In a number of countries (such as Armenia, Kyrgyzstan, the Republic of Moldova and Tajikistan), at the time of assessment, services and clinical networks were not structured to ensure equity of access and quality of care across the country, but instead were largely concentrated in the capital. The assessment team found considerable regional variations in post-myocardial-infarction medical practice in Kyrgyzstan; this has been echoed in subsequent, more detailed reports (Farrington et al.).

The management model for stroke frequently lags behind that for ACS. This is the case in, for example, Kyrgyzstan, the Republic of Moldova and Serbia. Even though there is good round-the-clock access to diagnostic procedures and revascularization procedures for ACS in Croatia, with good outcomes, this is less well developed for stroke and outcomes are poorer. A similar situation is found in Belarus and Serbia: in the latter, the national network is less well developed and there are fewer treatment options for stroke than for ACS.

Secondary prevention after heart attack and stroke is only moderately well implemented. In Croatia, there is high loss to follow-up after treatment of acute events, once patients transition from hospital to primary

**Figure 4.5. Prevalence of national CVD guidelines in the WHO European Region, 2017**



care. Continued access to, and affordability of, medication is likely to be a problem. In Belarus, medication was fully reimbursed for the first six months after discharge, but not thereafter. In Kyrgyzstan, statins were rarely prescribed as secondary prevention at the time of hospital discharge, although aspirin and beta-blockers were. In Tajikistan, providers estimated that well under one third of patients would continue to take statins in the long term because of their high cost.

Primary and secondary prevention opportunities are being missed. In some countries, smoking status is regularly not recorded in medical records and smoking cessation clinics barely exist. In Kyrgyzstan, clinic patients were not routinely screened for smoking status, and care providers were not trained to give focused counselling on smoking cessation, even after acute events; a new guideline and training are being introduced to address this.

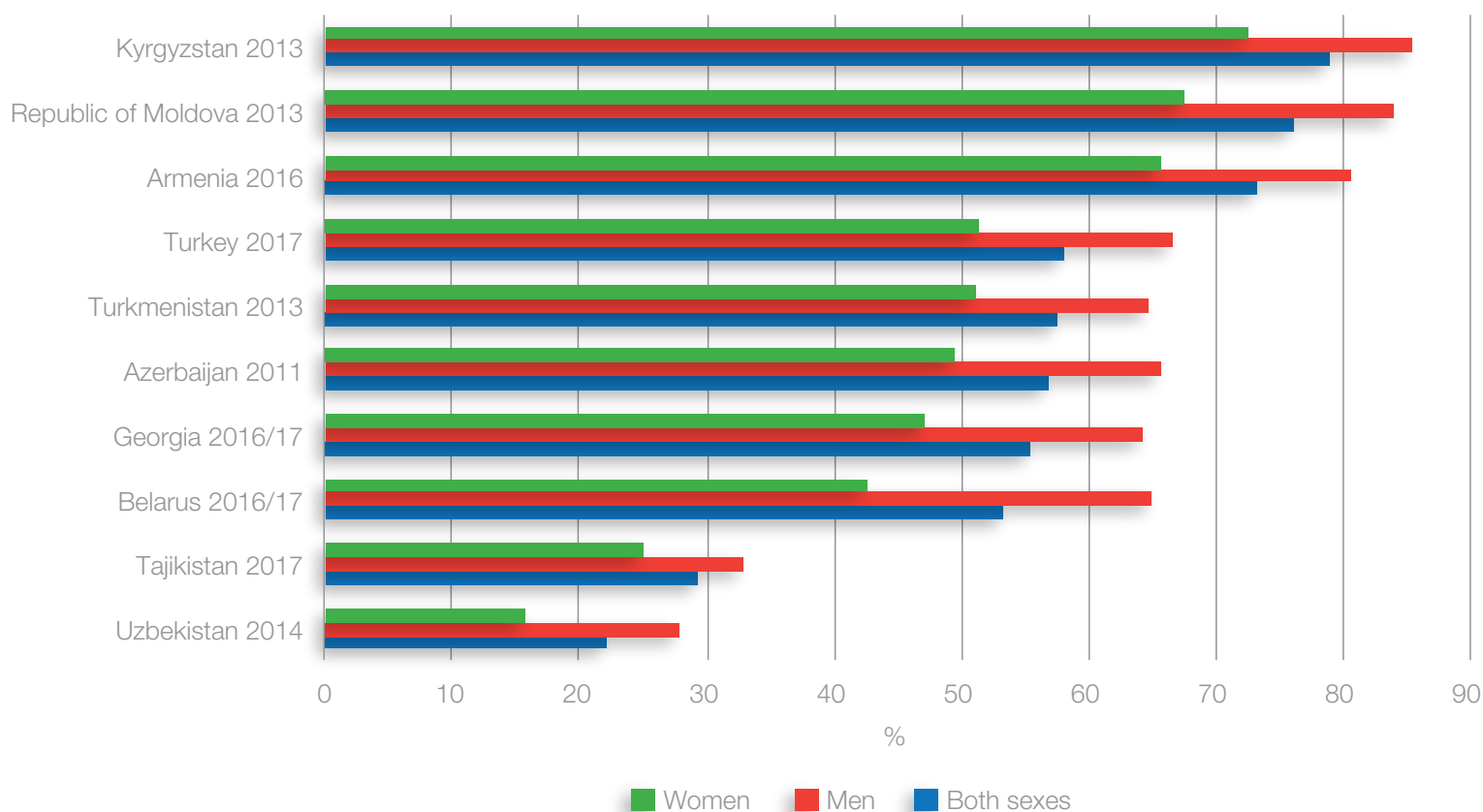
## Observation 6: “Missing men”

Men seem to be less likely to participate in cardiovascular risk assessment in primary care settings, less likely to take medication, and less likely to have their blood pressure or blood sugar controlled. In Kyrgyzstan, for example, apparently fewer than 20% of people with hypertension regularly took their medication, with women demonstrating twice as much awareness and adherence to treatment as men. A study of adults with diabetes in Kazakhstan found that blood sugar

levels were controlled in one quarter (28%) of people, with worse figures seen in rural settings and among men (Supiyev et al., 2016).

Data from 10 WHO STEPS surveys reveal that, in at least eight countries of eastern Europe and central Asia, men with raised blood pressure are significantly more likely than women not to be on medication (Figure 4.6).

**Figure 4.6. Proportion of adults\* with raised blood pressure who are not on medication**



Source: WHO STEPS surveys.

\*Adults 18–69 years, but for Kyrgyzstan 25–64 years, Turkmenistan 18–64 years, Uzbekistan 18–64 years and Azerbaijan 18+ years.

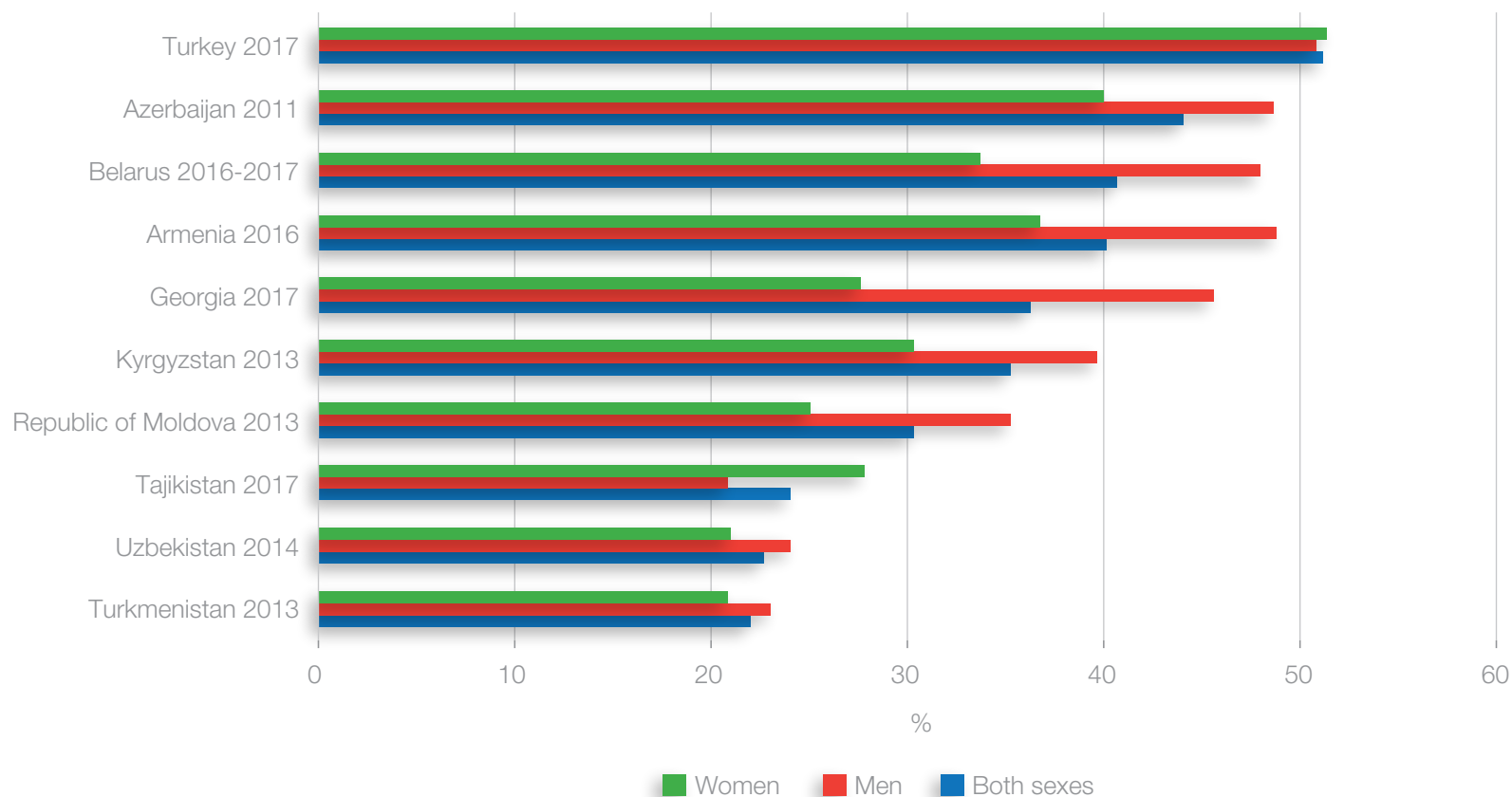
## Observation 7: Prevention of heart attack and stroke, and their complications, among people with diabetes is generally poor

Raised blood pressure and other cardiovascular risk factors are poorly monitored and controlled among people with diabetes. For all five countries that were formally scored (both EU and non-EU, low- and upper middle-income), the coverage of hypertension management among people with diabetes was considered to be limited. Statins were often not reimbursed, even for people with diabetes. In one country, the blood pressure of hypertensive, diabetic people was found to be

poorly controlled at the time of assessment, with only 2.5% reaching the target level.

Management of multiple morbidities and risk factors is a challenge. This situation is potentially exacerbated when people with hypertension and those with diabetes are followed up in separate chronic disease clinics. The proportion of adults with between three and five NCD

**Figure 4.7. Prevalence of three or more risk factors for NCDs in the adult population\***



Source: WHO STEPS surveys.

\*Adults 18–69 years, but for Kyrgyzstan 25–64 years, Turkmenistan 18–64 years, Uzbekistan 18–64 years and Azerbaijan 18+ years.

risk factors<sup>5</sup> varies by country, by a factor of two or more, and is higher for older age groups (Figure 4.7).

Patient education is poor and not standardized. Outdated approaches, such as lectures rather than interactive sessions, are frequently used, and modern methods of patient empowerment, such as motivational interviewing and peer-to-peer education, are not applied. Often, patient education activities are limited to providing leaflets and giving basic counselling or one-off training sessions. Patient education schools are common but can vary in quality and availability. Where

<sup>5</sup> From a list of: current daily smoker; fewer than five servings of fruit and vegetables per day; insufficient physical activity; overweight (body mass index  $\geq 25$  kg/m<sup>2</sup>); raised blood pressure (systolic blood pressure  $\geq 140$  mmHg and/or diastolic blood pressure  $\geq 90$  mmHg or currently on medication for raised blood pressure).

patients with diabetes received general counselling on food and physical activity, it frequently did not take the form of structured or individualized advice. In the Republic of Moldova, diabetes schools exist in family medicine centres but there was limited attendance and a lack of materials.

Prevention of complications is not systematic. The coverage of general follow-up of people with diabetes seems to range from limited to moderate. Shortcomings appear to be related to the quality and functional use of diabetes registers to inform and monitor management in primary care. In Kazakhstan, foot examinations, eye examinations (fundoscopy) and urinalysis are routinely offered to people with diabetes but procedures may need co-payment; a disease management programme is being rolled out to improve uptake and quality of care.



In Serbia, it is estimated that coverage of screening and prevention of complications may only be 15–20%, most for eye examinations, least for urinalysis. Diabetes registers, if they existed in countries, were often not recording complications fully.

Diabetes drugs may be free or fully reimbursed, but the devices needed for monitoring blood sugar control, such as test strips, frequently are not. This was found to be the case in multiple countries, for example, Belarus and the Republic of Moldova. Even so, low compliance with treatment may be seen: in the former Yugoslav Republic of Macedonia, less than half of the patients with oral hypoglycaemic drugs were thought to be taking them. The diabetes register in Belarus suggested that only one quarter of patients with diabetes were well controlled.

## Conclusions

The 12 country assessments reveal a mixed picture with regard to the implementation of core NCD interventions and services. Generally speaking, policies at population level are better implemented than those at the individual or service level, and of the former, tobacco and alcohol control are more extensive than interventions for diet and physical activity. Equity considerations are frequently not apparent. Low- and middle-income countries seem to find implementation, par-

ticularly of health service-based interventions, more challenging. It is difficult to assess if the opposite also holds true, as the two high-income countries were scored for fewer interventions.

The sample of countries assessed is not representative of the WHO European Region as a whole. The proportion of low- and middle-income countries within the sample is twice as high as in the Region as a whole, for example. Nevertheless, some of the findings are not dissimilar to what is being seen in the Region overall, even for those interventions that may be regarded as highly cost-effective: full implementation of the WHO FCTC is frustratingly limited, and few countries have comprehensively addressed salt reduction.

The messages of Chapter 3, when taken together with the observations in this chapter, make worrying reading, at least for the low- and middle-income countries in the WHO European Region. Although CVDs are the driver of premature mortality, and the greatest gains in these countries are to be made by tackling excess mortality from CVD and among working-age men, this chapter points to significant gaps in doing so. Furthermore, while both prevention and treatment are instrumental in this endeavour, the implementation of effective interventions at the level of individuals and in primary care is lagging behind. In the next chapter, we examine health system barriers which stand in the way of scaling up these critical population interventions and individual services.

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5

Health system **barriers**

Melitta Jakab  
Jill Farrington  
José Cerezo Cerezo

## Key observations

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**Strengthening health systems** to better respond to NCDs is high on the policy agenda of many countries

1

**2** **Health system barriers undermine delivery** of core NCD interventions and services throughout the WHO European region

Health systems can either **contribute to closing the health equity gap** or **perpetuate it**: equity-enhancing health system policies matter

3

**4** There is **great awareness** of health system barriers throughout the region and **great efforts are under way** to overcome them

## Motivation

Health systems are critical for delivering core NCD interventions and services. They improve the lives of millions of people living with NCDs, often with not one but multiple conditions. They contribute to reducing premature NCD mortality. Chapter 3 has demonstrated that premature mortality from NCDs in Europe is declining, although there are pockets of concern and inequalities, both within and between countries. Chapter 4 has shown that there is great potential to further scale up core NCD interventions and services in the Region, which could lead to more rapid declines in premature NCD mortality and morbidity. This chapter focuses on health system barriers that undermine a country's health system response to NCDs.

This chapter draws on the 12 country assessments carried out as part of the WHO Regional Office for Europe's HSS NCD project (see Chapter 2). The countries that participated in these assessments disproportionately represent the eastern part of the WHO European Region. For the sake of balance and to ensure coverage of the entire Region, the country assessments have been complemented with a review of the literature and other sources of information. In the country assessments, multidisciplinary national and international teams made consensus-based evaluations, backed up by evidence, of the extent to which 15 health system barriers limit scaling up core NCD interventions and services. In order to provide a succinct summary of priority

weaknesses in health systems, we have aggregated these 15 health system features into the nine most prominent ones (Figure 5.1).

These nine health system barriers have emerged as the most frequently mentioned challenges to scaling up core NCD interventions and services, or as the underlying causes of slow progress. The WHO European Region has a wide regional variation in the health system response to NCDs, and summaries such as those presented in Figure 5.1 hide the complexities and diversities encountered in contextualized country assessments. Not all countries face these nine health system barriers equally; some are more prominent in certain countries, as highlighted below. Many countries previously identified some or all barriers and have already embarked on addressing them. At the same time, others continue to experience some or all of these barriers without a clear vision of how to overcome them with a comprehensive and aligned system response. Nonetheless, even if varying in substance and degree, these nine barriers are the ones most commonly encountered in the 12 countries reviewed. They therefore allow us to establish some broad patterns for this report and, more importantly, to inform needed policy directions to improve NCD outcomes and reduce inequalities.



Figure 5.1. Nine health system barriers to the delivery of core NCD interventions and services



## Barrier 1: Weak governance for sustained intersectoral action

The country assessments highlight the fact that increasing national commitment to tackling NCDs has translated into a plethora of action around policy development. This is also seen in the Region as whole, where the proportion of countries with an operational multisectoral national strategy or action plan that integrates the major NCDs and their risk factors increased from 43% in 2015 to 66% in 2017 (WHO Regional Office for Europe, 2017). Commitments to tackling NCDs and taking related action have been increasingly introduced into national development plans. Turkey's 10th National Development Plan, for example, features NCD-related targets and intersectoral action on tobacco and nutrition policies. Similarly, NCDs are prioritized in the most recently developed national health plans in many countries (such as Estonia, Kazakhstan, Kyrgyzstan and the Republic of Moldova). For example, Kyrgyzstan's Den Sooluk national health reform programme is a holistic approach to health system strengthening (HSS), with ambitious objectives for reducing premature CVD mortality. New NCD policies are increasingly owned at higher governmental levels and are intersectoral in nature. For example, Belarus recently introduced an intersectoral State Programme called "People's Health and Demographic Security in the Republic of Belarus 2016-2020". Nevertheless, policy processes could be strengthened by adopting more stringent policy design principles, to ensure that commitments are translated into action and impact. For example, by 2017 less than one third (30%) of countries in the WHO European Region had set time-bound targets and indicators based on WHO guidance on NCDs (WHO Regional Office for Europe, 2017). Disconnects and misalignment between the various policies aimed at tackling NCDs and HSS, gaps in implementation and the persistence of "silo approaches" are also reported.

Establishing effective governance arrangements for sustainable intersectoral action presents challenges. On the positive side, most country assessments report that intersectoral arrangements are being created, but these vary greatly in their approach, effectiveness, reach and sustainability. Three patterns emerge. In some countries (such as Armenia and Tajikistan), intersectoral arrangements are of an ad hoc, time-limited and task-oriented nature, mostly for discussion and drafting of specific intersectoral tasks and orders. In others (Croatia, Estonia, Hungary and Turkey, for example), committees may be established with ex officio members for dialogue and programming. Countries systematically report that, while these committees have a mandate

and can effectively produce intersectoral action plans, they lack instruments for joint action, enforcement and monitoring. At the time of the assessments, none of the 12 countries reported mechanisms for joint action, joint budgeting or joint monitoring. Overall, the institutionalization of intersectoral action could be strengthened in many countries, with greater attention paid to developing instruments to implement and enforce such action.

## Barrier 2: Mismatched public health services and public health goals

Public health services are undergoing massive transformation in the eastern part of the WHO European Region. Surveillance systems are getting stronger, which provides an important basis for public health action and is critical for monitoring progress toward NCD commitments. All 12 countries reported improved registration of mortality and morbidity and their causes. This is in line with findings in the Region as a whole, where four fifths (81%) of countries reported in 2017 that they had a functioning system for generating reliable cause-specific mortality data on a routine basis. Health care utilization patterns are also increasingly captured electronically, allowing more in-depth assessment of needs and morbidity patterns. Administrative data are increasingly complemented with surveys providing more insight into behavioural dynamics: seven of the 12 countries with an HSS NCD country assessment (Armenia, Belarus, Kazakhstan, Kyrgyzstan, Republic of Moldova, Tajikistan and Turkey) have completed a WHO STEPS survey of NCD risk factors in the past seven years. Nevertheless, greater attention needs to be paid to the integration of data sources and to regular institutionalized evaluation of health behaviours, the social determinants of health and equity issues. By 2017, fewer than one fifth (19%) of WHO's European Member States had carried out a five-yearly comprehensive health examination survey (WHO Regional Office for Europe, 2017). Finally, the development of institutionalized pathways for channelling evidence into policy with the aim of achieving greater public health impact remains a promising area for investment.

There has been a gradual but slow transition to rebalance the focus of public health services from communicable diseases to NCDs, in order to better reflect current and future health needs. This process has at times been viewed as slow and not commensurate with the health needs of the population. The most significant obstacle to this transition is related to the public health workforce. Reprofitting the existing public

health workforce has significant implications for a country's political economy, and these have not been easy to manage. In addition, the countries that participated in the assessments reported challenges in moving away from the relatively narrow public health training that was developed for the model of sanitary and epidemiology functions, with a focus on infectious diseases, towards one that addresses broader health determinants. In order to foster a new concept of public health, the establishment or reorganization of schools or departments of public health has begun, with the support of the Association of Schools of Public Health in the European Region (ASPHER); a few pioneer countries, including Croatia, Estonia, Hungary and Kazakhstan, are developing undergraduate and postgraduate training based on the new public health paradigm (Ádany et al., 2011). However, other countries continue to report difficulties in accessing training in modern public health, and especially in health promotion based on behavioural sciences and grounded in empirical evidence. Although many countries (such as Israel, Spain, the Netherlands and the United Kingdom) can be considered exemplary models of public health training (Tulchinsky & McKee, 2011), challenges related to integrating theoretical and practical training are also being faced, especially by public health departments located in medical faculties (Paccaud, Weihofen & Nocera, 2011).

The country assessments also reveal a number of additional obstacles. Public health workforce issues are compounded by a lack of resources for reforming public health institutions and launching new training programmes. The transition to a new concept of public health has not been accompanied by a major shift of resources in any of the countries reviewed. Financial incentives to do more and to do things differently are underutilized. Governance and leadership challenges abound. The organizational focus of public health action is at the national or state level, primarily supported by national or regional laws, and links with regional and local governments are weak. Political resistance to a transformation that requires the consolidation and restructuring of previous public health networks has also been noted (WHO Regional Office for Europe, 2016b).

Most countries are preoccupied with strengthening coordination between public health and primary care services in order to overcome fragmentation in outreach efforts in prevention, early detection and disease management. Stepping up detection rates requires greater mobilization of the population, especially those potentially at risk, to seek preventive and diagnostic services. Some opportunities are afforded by combining existing population outreach efforts and primary care services. However, key system issues need to be overcome; these include separate governance arrangements, appropriate funding, building bridges between public health and primary care services,

and developing mechanisms of working together. The country assessments highlight a number of promising examples and creative solutions. In Turkey, the governance of public health and primary health care has been merged in its Public Health Institute. Community health centres work hand-in-hand with primary care centres, so far focusing on maternal and child health issues and the gradual integration of NCD-related early detection and health promotion. A network of community health workers has been set up in all villages in Kyrgyzstan. These community health workers are trained volunteers who work with primary health care centres in villages and, among other initiatives, organize an annual hypertension detection drive. They are supported by the Ministry of Health, the National Health Promotion Centre and the Mandatory Health Insurance Fund, in a collaborative effort. In Hungary, health-promoting offices have been introduced in primary health care facilities, to bring health promotion and lifestyle and health behaviour change programmes as close to people as possible.

## Barrier 3: Stand-alone primary care services with narrow task profiles

Primary health care has undergone significant developments in the past 20 years throughout Europe and is a dynamically evolving component of health systems. Fundamental changes have taken place in the eastern part of the Region. Primary care has become organizationally and financially autonomous. Family medicine has been introduced, with a choice of provider and population enrolment. The transition from historical line-item budgets to capitation payments has increased financial autonomy and underscored the need for management skills. In the rest of the Region change has been more incremental, with efforts to reduce fragmentation and move towards increasingly integrated care (Kringos et al., 2015). However, all 12 country assessments highlight the fact that there is great scope for further transformation of primary care. In particular, there is great scope for strengthening the ability of primary care providers to resolve cases on the spot without referral and consultation (resolutive capacity). This finding is echoed in reviews of primary care services in the rest of the Region (Kringos et al., 2015).

A frequently noted root cause of the low resolutive capacity of primary care relates to the model of care. In particular, in the 12 countries studied, primary care is delivered by monoprofile family doctor/nurse tandem teams. Other health workers important for NCDs, such as

dieticians, counsellors and physiotherapists, are lacking or not available as a potential resource to be shared across several practices. Although group practices are the dominant form of primary care in most countries, they are in essence co-located individual practices, rather than teams jointly taking care of a larger population. As a result, resource-intensive tasks, such as outreach for early detection and disease management, are underprioritized. The pattern of mono-profile solo or small-team practices is not unique to the 12 countries assessed but reflects the predominant mode of providing primary care in a large part of Europe, with the exception of those countries that have begun to move towards larger interdisciplinary group practices (Kringos et al., 2010; Kringos et al., 2015).

Financial incentives reinforce these organizational structures, with a predominance of capitation-based payment. The increasing move to mixed payments, adding fee-for-service and pay-for-performance to capitation base payments, has led to some changes in staff mix but in general not to significant reconfiguration of the model of care with an interdisciplinary approach based on larger teams.

Mechanisms of coordination remain unsystematic, leading to episodic rather than continuous care. Although coordination appears to work well within facilities, most of the country assessments report shortcomings in coordination and communication across facili-

ties, in particular between primary care and specialist/hospital care. Written referrals and discharge instructions handed to patients are the main method of communication between primary care providers and specialists/hospitals. In part, this is related to the underuse of information solutions (barrier 9). Other systemic causes are also at play, such as a lack of definition of roles and responsibilities across levels (barrier 4). In Croatia, Estonia and Kazakhstan, these systemic weaknesses have to some extent been overcome by moving to electronic or shared electronic medical records, and by better definition of the roles and responsibilities of the different levels of care. In Turkey, the barriers to coordination within the cancer screening programme have been overcome, and exemplary coordination has been developed between primary care facilities and early diagnosis cancer screening and training centres, mostly located in hospital outpatient departments and hospitals, for follow-up and referral of positive cases.

Taken together, the country assessments reveal a range of system factors that push people away from primary care and pull them towards specialist and hospital services for routine NCD services such as prevention, early detection and disease management (Table 5.1). These system factors are present on both the demand and the supply sides. Push factors relate mostly to continued narrow task profiles in primary care preventing the management of more complex cases, potentially with multimorbidity and/or after acute events. The country

**Table 5.1. Systemic push and pull factors in health systems that undermine primary care-based detection and management of NCDs**

	Push factors (from primary care)	Pull factors (to specialist/hospital care)
<b>Supply side</b>	<ul style="list-style-type: none"> <li>■ Narrow task profiles preventing management of more complex and multimorbid cases, and lack of clinical decision support</li> <li>■ Outdated protocols that require confirmation of diagnosis and prescriptions by specialist</li> <li>■ Capacity constraints in primary care and overloaded health workers preventing investment in time-consuming detection and behaviour change</li> </ul>	<ul style="list-style-type: none"> <li>■ Purchasing mechanisms providing incentives for specialists and hospitals to seek out and retain patients even if they could be handled in primary care</li> <li>■ Informal payments motivating individual physicians to hospitalize simple cases with low marginal cost</li> <li>■ Large hospital networks (“a built bed is a filled bed”)</li> <li>■ Attitudes among health workers</li> </ul>
<b>Demand side</b>	<ul style="list-style-type: none"> <li>■ Real or perceived low resolute capacity of primary care to resolve diagnostic or disease management issues</li> <li>■ Inconvenience of organization of care, especially laboratories and diagnostics</li> </ul>	<ul style="list-style-type: none"> <li>■ Medicines, laboratories, diagnostics and support services (counselling, physiotherapy) more readily available and covered as part of hospitalization, while not as outpatient services</li> <li>■ “One stop” care in hospitals compared to primary care (laboratories, diagnostics, etc.)</li> <li>■ Cultural factors and expectations favouring hospital care</li> </ul>

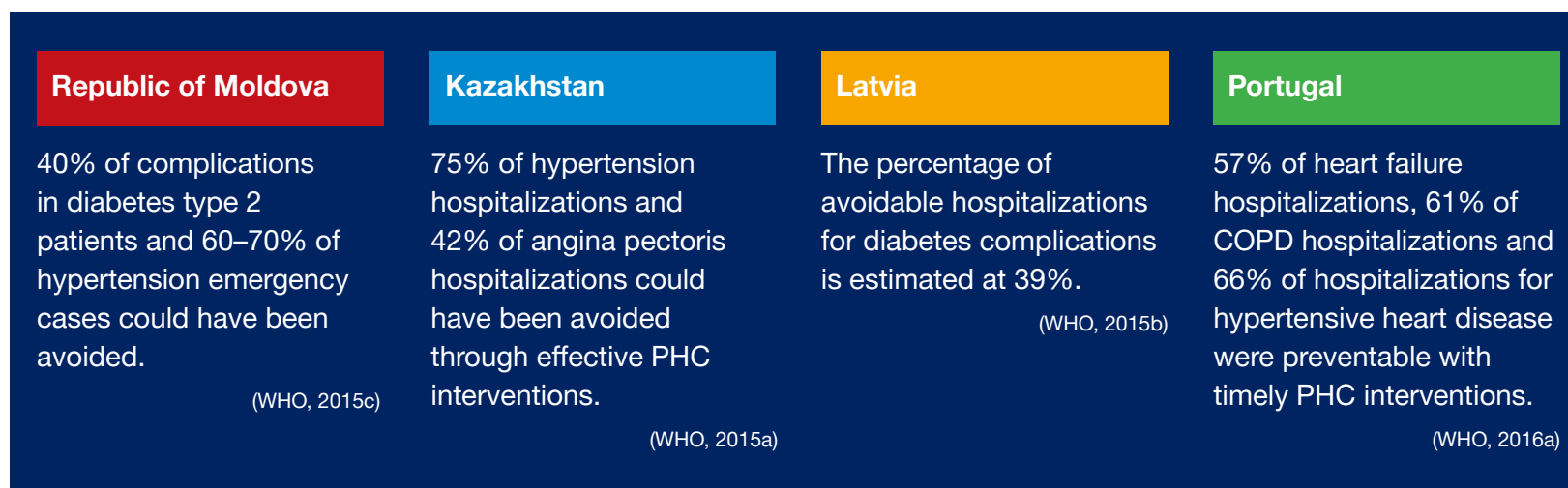
assessments often report weak clinical decision support for NCDs, coupled with increasingly noted capacity constraints to engage in more time-consuming aspects of NCD care, such as counselling. This leads to real or perceived limits on the capacity of primary care to resolve issues on the spot, and to quick referrals or to skipping primary care altogether, in the absence of strong gatekeeping systems. The unavailability or poor organization of the support services that are essential for NCD care, such as laboratories, other diagnostic facilities, physiotherapy and counselling, contrast with the “one-stop shop” services offered in hospitals.

The financial incentives in the health system are the most prominent pull factor, since public purchasing mechanisms commonly include a capitation/fee-for-service/case-based payment continuum (see barrier 7). Informal payments, where they exist, provide strong incentives for physicians to admit patients, especially when there is excess capacity in hospital beds and the marginal cost of admission is low. Common examples include “preventive” hospitalizations for hypertension or diabetes (Figure 5.2). These findings are not unique to the 12 coun-

try assessments, and similar push and pull factors have been found in a wider range of countries (Kringos et al., 2015; OECD/EU, 2016; OECD, 2017a; OECD, 2017b).

Small single-profile primary care units with weak coordination mechanisms mean that time-consuming resource-intensive tasks are underprioritized, leading to passive primary care based on an episodic, treatment-oriented approach. This is particularly problematic for core individual services for NCDs, as they require health workers to reach out and work together with communities on health promotion, early detection, disease management, behaviour change over long periods of time, coordination with other care providers, etc. Small monoprofile teams do not have the “bandwidth” to carry out these tasks, and they lack the resources to hire in these functions. Moreover, the weak coordination mechanisms in these teams are reinforced by weak financial incentives embedded in capitation payments. In many cases, this results in primary care services that have remained passive, dealing with the workload in the waiting rooms rather than working proactively with the population.

**Figure 5.2. Avoidable hospitalizations for selected ambulatory care sensitive conditions**



## Barrier 4: Unbalanced distribution of specialist care

Few countries have an explicit policy or plan in place that outlines the respective roles of primary, secondary and tertiary care with respect to the management of NCDs, although some are being developed. In Estonia, the current arrangements concerning levels of specialization

were set up in 2000 by a hospital master plan that has led to significant restructuring and efficiency gains. Two other countries have moved forward with regionalization. In Belarus, a regionalized approach is being adopted, with different service packages developed for each level. Kazakhstan has invested in highly specialized care within health care reforms and has aimed to achieve economies of scale. On the other hand, in Kyrgyzstan there has been no formal regionalization of care for patients with acute coronary syndrome (ACS) or stroke, resulting in services with wide variations in quality and availability within and



between regions. In the Republic of Moldova, too, the contributions of the three levels of the health system (primary, secondary and tertiary care) are not well defined. In both Tajikistan and Turkey, an overlap in the responsibilities and roles of primary, secondary and tertiary care facilities has been noted. In Armenia and Tajikistan, patients often self-refer to tertiary centres in the capital, bypassing regional facilities. In Croatia and Kyrgyzstan, attempts have been made to reinforce the roles of the various levels by strengthening the gatekeeping function of primary care through obligatory patient referrals to specialist services (combined with financial incentives in Kyrgyzstan); however, enforcement of the corresponding regulations has been inconsistent.

Even where a regional plan is in place, it does not always function well, reflecting a need to involve clinicians more in the design of service patterns. Most country assessments found that higher-level facilities continue to treat low-complexity patients requiring low levels of specialization. For example, despite its good plan, Estonia has not managed to achieve the target of reducing local hospitals to the lowest level of specialization, and highest-level hospitals are still providing some lower levels of specialization. Other manifestations of disrupted implementation of regionalized specialist care include duplication of diagnostic tests and procedures carried out in primary care by specialist facilities (in Armenia, Belarus, Hungary, Kyrgyzstan and the former Yugoslav Republic of Macedonia, for instance). A number of factors may explain these findings. First, disruptions in regional roles can be the result of weak coordination mechanisms and underuse of information solutions (Barrier 9). Second, they may reflect an underlying lack of trust between different levels of care and across the generalist/specialist divide, as noted in the assessment reports for Armenia, Belarus and Kyrgyzstan. Finally, relationships, not just structures, are important for effective regionalization; these include both formal networks of facilities (Estonia) and informal clinical networks supported by mobile technology (in Belarus, Kazakhstan and Serbia, for example) (Farrington et al., 2017a; Farrington et al., 2017b).

Pre-hospital emergency medical services exist but vary in quantity and quality, which affects the timeliness and hence the effectiveness of secondary care in case of acute incidents of NCDs (heart attack, stroke). The best functioning services (in terms of timeliness of care, for example) seem to have been improved in conjunction with acute care pathways for CVDs (ACS, and possibly also stroke). In Serbia, the ambulance service appears to function very well, and Turkey has well developed coordination mechanisms, with agreed protocols for call-handling, and monitors the timeliness of response against targets. Belarus has an extensive system of emergency care, including specialized ambulances for ACS with equipment for remote ECG analysis. The Republic of Moldova has made improvements in the ambulance system, with investments in

both equipment and staff. In Kyrgyzstan and Tajikistan, there are too few ambulances for the population but efforts are being made to strengthen emergency services.

Barriers hindering access to specialist care are highlighted in all the country assessments. Those frequently encountered include financial barriers for patients with low socioeconomic status and geographical barriers, particularly for patients in rural or remote areas. Financial barriers are due to formal payments and, in some cases, to informal payments associated with specialist care for acute cardiovascular interventions and cancer care. In Kyrgyzstan, high-technology services for ACS care covered by public funding are available only to a small fraction of the population, and the rationalization of services through a specially designated “high-technology fund” to ensure access by poor and vulnerable groups is not functioning well (Farrington et al., 2017b). Geographical barriers have also been documented, especially where regionalization has concentrated specialist services in fewer centres to achieve economies of scale, and where affordable transport and accommodation services have not been thought through for patients travelling from more distant and remote areas. This was and remains a particular challenge in large countries, such as Kazakhstan and Turkey, although smaller countries have also encountered this problem. In Turkey, at the time of the report in 2012, most cardiac surgery was carried out in four provinces and many patients travelled long distances to receive care. In response, the Ministry of Health proactively mapped capacity for interventional cardiology and identified which areas lacked access to percutaneous coronary intervention, cardiac surgery and intensive care within two hours’ travel time.

## Barrier 5: Provider-centred health systems

The importance of people-centredness has been recognized in all the country assessments, and an increasing number of strategies for strengthening health systems are designed explicitly around people’s needs and expectations. Provider-centredness, instead of people-centredness, in health systems is a key contributor to poor outcomes. People can be regarded as the frontline workers for many NCD conditions, making judgements and taking decisions about health promotion, disease prevention and care in order to maintain or improve the quality of life throughout their lives (WHO Regional Office for Europe, 2014). Croatia’s National Health Strategy 2012–2020, for example, identifies population empowerment as a key priority, and health promotion materials are tested with input from patient associations. Some countries (Croatia, the former Yugoslav Republic of Macedonia and Turkey, for

instance) are also investing in stronger regulatory frameworks such as charters of patient rights, as well as information technology, intelligence and infrastructure, to support more people-centred approaches.

All the country assessments report numerous activities to raise health literacy concerning NCDs through a wide range of instruments aimed at the provision of information and the promotion of behaviour change. Greater health literacy means having the knowledge, motivation and competence to assess and apply health information. For example, people in Estonia and Kazakhstan enjoy access to a high-quality information portal for health-related issues; a new government-wide communications office, including health topics, has been introduced in Hungary; and mobile clinics are being used in Turkey to educate and inform people in rural areas about cancer screening. At the same time, the reports on Belarus, Estonia, Hungary, Kazakhstan and Kyrgyzstan explicitly note that gaps in health literacy are a barrier to improving NCD outcomes. Specific concerns include a lack of systematic and evidence-informed approaches to producing educational materials and techniques, a lack of mechanisms to address commercial conflicts of interest in the production of health promotion materials, variable attendance at diabetes schools and other health education programmes, and little evaluation of the effectiveness of raising health literacy.

Health-care practitioners and health organizations often lack the autonomy, incentives and know-how to change their attitudes and their clinical and organizational settings in order to integrate more patient-centred approaches. The country assessments paint a physiciancentred picture, with limited involvement of people in decision-making about their health and care process. For example, the reports on Belarus, Hungary and Kyrgyzstan suggest that the lack of shared decision models, particularly for hypertension and diabetes, affects patients' motivation to comply with recommendations. In part, this approach is created and reinforced by the guidelines used in primary care, which are often developed by specialists, portray a diagnostic-oriented approach and place limited emphasis on patients' involvement in the management of their own conditions.

## Barrier 6: A health workforce not fit for current and future NCD needs

The quantity, distribution and competencies of the health workforce significantly affect the ability of the health system to respond effectively

to NCDs. Health workforce issues were a top concern in the country assessments, and these concerns are echoed in the wider literature throughout the Region.

The country assessments reflect concerns about the lack of availability of the numbers of health workers needed for NCDs. Migration from rural to urban areas or to other countries with better working conditions and the absence of planned replacement of the ageing health workforce are well documented trends. These processes disproportionately affect public health, primary care, mental health, nutrition, and rehabilitation – in other words, the services critically needed to scale up core NCD interventions and services. Many countries report programmes to attract health workers to underserved areas through mandatory assignments (Armenia, Belarus, Turkey), financial incentives (Croatia, Turkey, Kyrgyzstan), improved working conditions (Turkey, Croatia, Estonia) and other mechanisms. At the same time, long-term evidence-informed methods for assessing the population's health needs in order to estimate health workforce demand in the future are in their infancy.

According to the country assessments, the current competencies and task profiles of the health workforce are a key obstacle to responding effectively to the challenge of NCDs. Although important investments have been made to introduce broad general practice and family medicine throughout the Region, the task profiles in managing NCDs remain narrow and the roles of nurses are limited (Box 5.1). There is limited availability of certain skills that are important for NCDs, in fields such as dietetics, health behaviour counselling and coaching (diet, smoking cessation, etc.), physiotherapy and mental health counselling. There are gaps in health workers' knowledge, skills and decision aids for screening, cardiovascular assessment and management. As a result, family doctors often lack the confidence to manage NCDs, especially in the context of multiple morbidity. In the Region as a whole, health workers currently in the labour market are mostly trained to deal with acute conditions and to provide curative services, whereas the new epidemiological, technological and organizational context requires additional competencies in areas such as the promotion of healthy behaviours, the use of information technology (e-health/m-health) for diagnosis and monitoring purposes and for communication between providers, and work in multiprofessional teams and integrated services (Langins & Borgermans, 2015; Fellows & Edwards, 2016; Frenk et al., 2010).

There are challenges in changing the curricula of undergraduate or postgraduate programmes for health professionals, which do not fully reflect the competencies required by the people-centred, evidence-informed approach to NCDs. The country assessments report a limited



range of action in strengthening teaching strategies and the content of education and training, adapting infrastructures and equipment, and ensuring additional and adequately prepared educators and trainers, as well as appropriate settings for clinical learning. Specific concerns include the following:

- NCDs are insufficiently addressed in masters' and postgraduate degree programmes in public health;
- the relevant training in health promotion, grounded in the behavioural sciences, is not available in several countries;
- training in family medicine and primary health care continues to take place through a specialist model, reflecting professional and specialty silos;
- nurse and midwife education lacks standardization and professionalization;
- the skills relevant to evidence-based medicine (such as self-directed learning or the ability to critically appraise scientific literature or promotional materials distributed by pharmaceutical companies) are not extensively used in practice;
- the skills related to providing people-centred care are not part of the medical curriculum;
- the use of technology in health promotion and primary care settings is undervalued.

The task of bringing health workforce education into line with the changing needs of the future is reported to pose challenges for inter-sectoral work between ministries of health and education. Countries that offer examples of good practice include Hungary, where nurses receive specific training in diabetes for patient education and the prevention of complications, and Kazakhstan, where nurses are being specifically trained in chronic disease management and collaborate in patient triage.

## Barrier 7: Financing misaligned with service delivery objectives

The country assessments reveal several health financing issues that make it difficult to move towards the desired model of service delivery, namely a continuous spectrum from public health and primary care to specialist services working seamlessly together throughout the life course.

## Box 5.1 Task shifting and the roles of nurses

“While both doctors and nurses received training on the NCD prevention guidelines, only doctors could carry out certain tasks, such as cervical screening, and **doctors largely provide behavioural counselling. In some situations, doctors performed tasks** that nurses might do, and nurses performed administrative tasks, for example, transferring information from paper records to electronic records.” – Armenia Country Assessment

“The role of nurses is currently limited to acting as doctors’ assistants. **PHC nurses have a very limited role in leading the process of care for patients with CVDs at the community level.** They lack the competence to coordinate the process of care for patients, to obtain needed contributions from professionals outside the health sector and from members of the family and community.” – Belarus Country Assessment

“... health providers stated that mechanisms to optimize teamwork and coordination are underused. Nurses could be positioned as coordinators of care or case managers for patients with NCDs; however, in the current model of health service delivery, **nurses play a very limited role in patient care**, often only providing administrative support to physicians. Some routine tasks in PHC facilities should be delegated from GPs to nurses, which would lighten the workload of physicians” – Croatia Country Assessment

“Estonian nurses are confident and consider themselves to be as specialized as doctors. They are **willing to assume a greater role** and more responsibilities in the Estonian health-care system.” – Estonia Country Assessment

“Public health nurses are part of the primary care service, but their responsibilities are almost exclusively for maternal and child care ... These **nurses could potentially be involved in NCD prevention.**” – Hungary Country Assessment

“**Mid-level providers are not used to their full potential.** Nurses do not take an active role in educating patients during clinic visits or in leading educational sessions in schools for patients with diabetes and hypertension.” – Republic of Moldova Country Assessment

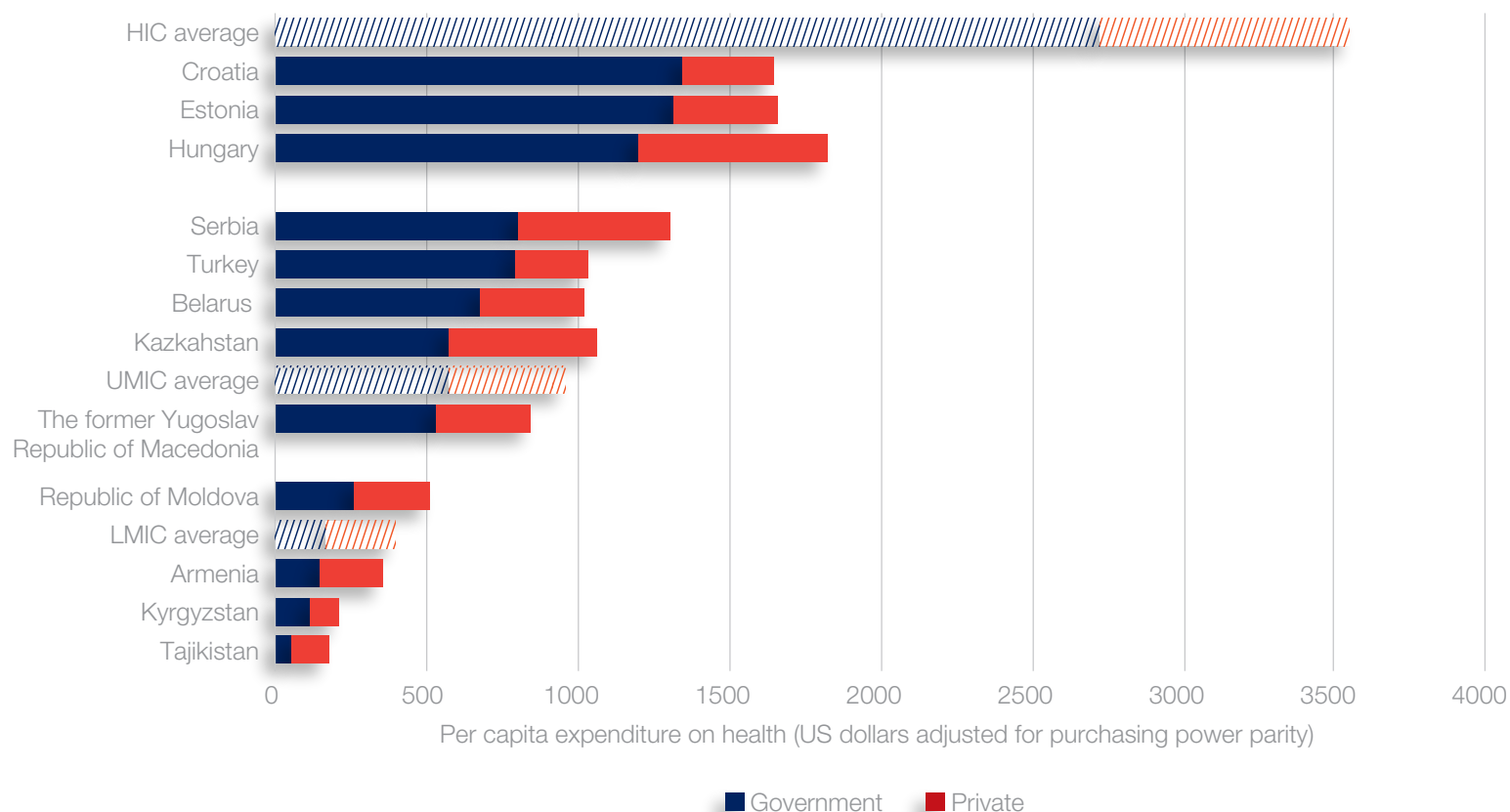
Total expenditure on health varies greatly among the 12 countries, creating different sets of constraints and opportunities for scaling up core interventions and services (Figure 5.3). Public spending on health is a function of fiscal space and the priority attached to health relative to other sectors (Figure 5.4). In some countries, there is a strong case for investing more in health from public resources. In others, fiscal space for health has already been increased in recent years and efficiency gains need to take the lead in the resource generation strategy. In yet others, a balanced approach between greater spending and efficiency gains is advised. A contextually nuanced understanding of health financing patterns is important.

All the three high-income countries reviewed (Croatia, Estonia and Hungary) spend significantly less in total than the average for high-income countries in the WHO European Region. Croatia has historically given high priority to health in the past decade. Estonia has grad-

ually increased the priority assigned to health, to 14% of government expenditure. In contrast, Hungary has kept priority to health relatively low, at just 10% of government expenditure which creates scope for improving health outcomes through well prioritized additional health spending. Nonetheless, in these three countries, there is nearuniversal entitlement to publicly financed health services, ensured through national pools of funds allocated through single purchasers, and their country reports note that in general access and financial burden are not barriers to seeking care for NCDs.

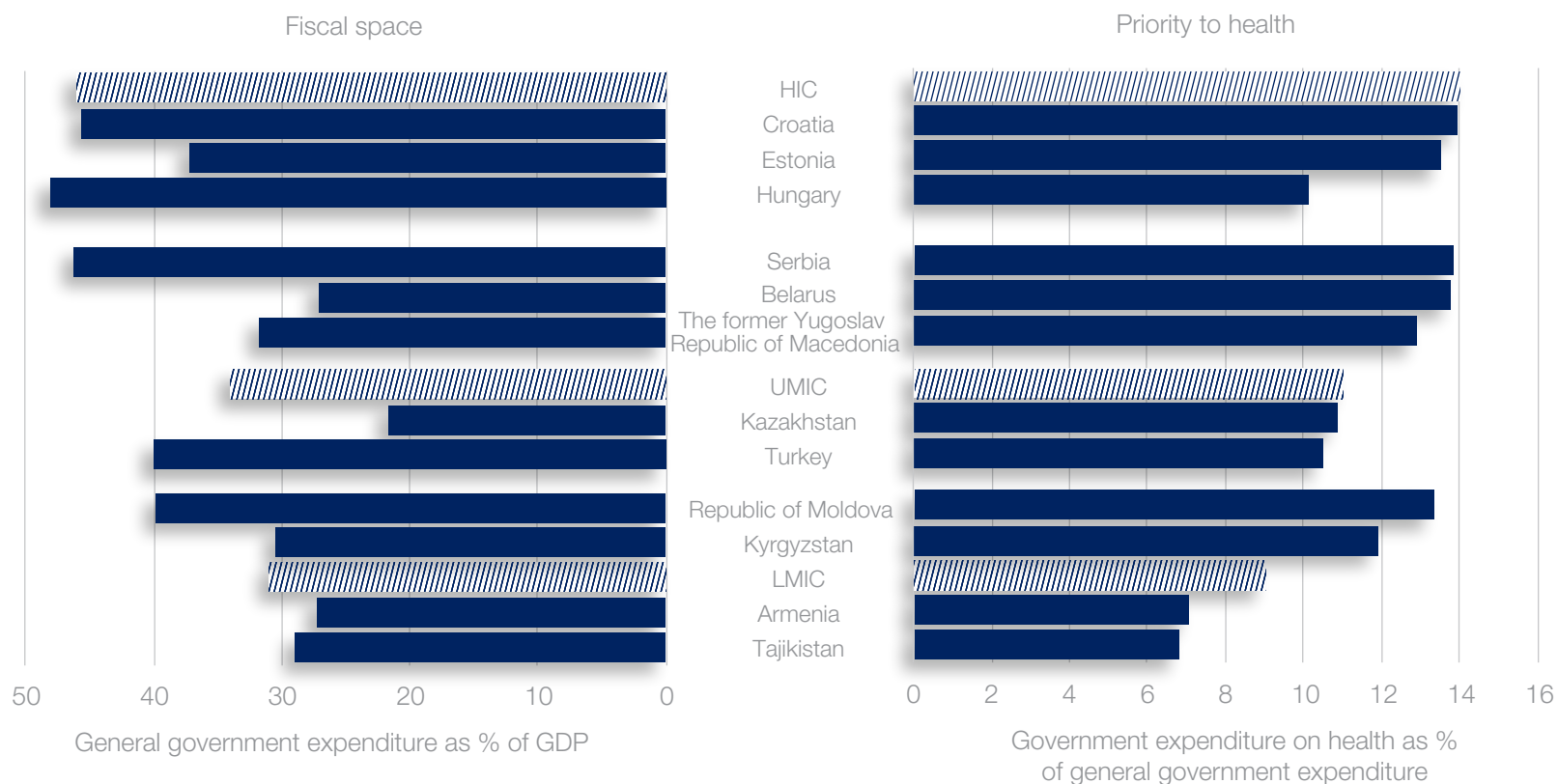
While there is no apparent trend among the upper middle-income countries reviewed (Belarus, Kazakhstan, Serbia, the former Yugoslav Republic of Macedonia and Turkey), the high share of private spending in Kazakhstan (46% of total health expenditure) and Serbia (38% of total health expenditure) is noticeable. In conjunction with their considerable public spending, these two countries report generally good

**Figure 5.3. Per capita government and private expenditure on health in 12 countries (2014)**



Note: Ranked by per capita government health expenditure. HIC = high-income countries, UMIC = upper middle-income countries, LMIC = lower middle-income countries. Source: WHO Global Health Expenditure Database.

**Figure 5.4. Fiscal space (total government expenditure as % of GDP) and priority to health (government expenditure on health as % of total government expenditure) in 12 countries (2014)**



Note: HIC = high-income countries, UMIC = upper middle-income countries, LMIC = lower middle-income countries.  
Source: WHO Global Health Expenditure Database.

access to services and care, although with a high financial burden for the population, especially for medicines. In this group, Turkey stands out as a positive example, with its reasonable public spending and modest private spending at just 23% of total health expenditure. This in itself is a result of Turkey's well known Health Transformation Program, which has unified health coverage and strengthened service delivery arrangements while increasing public spending. This has had a significant impact on health outcomes, particularly on maternal and child health, and on financial protection (Atun et al., 2013). Turkey is now again at a crossroads in moving towards more integrated service delivery arrangements, in order to scale up core NCD interventions and services. From a financing perspective, there is scope both for further raising the priority afforded to health and, as the country report notes, for efficiency gains.

Among the four lower middle-income countries reviewed (Armenia, Kyrgyzstan, the Republic of Moldova and Tajikistan), Kyrgyzstan and

the Republic of Moldova have both demonstrated an impressive commitment to health and have significantly increased the share assigned to the health sector in government allocations, to about 12–13%. Both countries were pioneers in overcoming fragmentation in the pooling of funds and in allocating resources through national single purchasers (Kutzin, Cashin & Jakab, 2010). Both have maintained increased funding over the years, with documented results with regard to access and even some progress on financial protection (Akkazieva, Jakab & Temirova, 2016; Garam et al., in press; Jakab, Akkazieva & Habicht, in press). While signs of underfunding persist, there does not appear to be immediate scope for raising significant additional revenues for health in these two countries, and an emphasis on efficiency gains is critically important for scaling up core interventions and services. For example, both countries continue to report excess capacity in the hospital sector, as well as excessive hospitalization for simple NCDs such as hypertension. In contrast, the priority assigned to health spending in Armenia and Tajikistan is significantly lower (below 10% of general

government expenditures), and neither country has overcome the inherited fragmentation in fund pooling. Their country assessments report problems of access and financial burden. Scaling up NCD core interventions and services would benefit from increased government spending on health, and there appears to be scope for this.

The country assessments also highlight the lack of explicit priority-setting processes, which undermines countries' ability to allocate resources in line with stated policy objectives and targets. Without such processes, it is difficult to create effective governance arrangements to hold actors accountable for results. The country assessments reveal that budget allocations within the health sector mostly follow established patterns, and that the process itself is not well understood by many actors in the system (Box 5.2). Despite this picture, it is encouraging that four of the country assessments report that major shifts in resource allocation in favour of primary care have taken place in recent decades: the share of primary care in government spending on health increased from 31% to 38% in Belarus, from 25% to 30% in the Republic of Moldova and from below 10% to nearly 40% in Kyrgyzstan, and was mandated at 40% for regional and city budgets in Tajikistan. In addition, regional equalization mechanisms based on population numbers have been introduced in Kyrgyzstan and Tajikistan, leading to improved equity in access and quality.

The incentives in health systems are often misaligned with the desired vision of service delivery, reinforcing a specialist and hospital orientation. Most of the countries assessed are moving towards a payment continuum where the predominant pattern is historical line-item budgets for health promotion and disease prevention, capitation payment for primary care, fee-for-service payment for specialist outpatient care, and case-based payment for hospital care. Ten of the 12 country assessments demonstrate this pattern (Table 5.2). From the perspective of core NCD services, these incentives have the following perverse effects.

- They undervalue health promotion, early detection, behaviour change, counselling and disease management.
- They do not provide incentives for expanding task profiles in primary care.
- They reinforce the episodic orientation of care at specialist and hospital levels, rather than incentivizing the right behaviour for the full spectrum of care.
- They reinforce traditional levels of care, rather than working across levels in networks and teams.
- They provide no incentives for coordination and integration between health care services and population-based outreach programmes and within the delivery of individual health services.

## Box 5.2 Explicit prioritysetting approaches

“The principles for setting priorities should be defined more clearly, and the budget allocations for different areas should be more strategic ... Although resources are ostensibly allocated on the basis of explicit priorities and the burden of disease, this goal has not been fully achieved ... The budget allocations would appear to indicate that achieving a healthy lifestyle is the least important priority ...” – Estonia Country Assessment

“Within the health budget, it is difficult to assess how the priorities identified in high-level strategies are then reflected in the allocation of the budget” – Turkey Country Assessment

“... there is no systematic health policy approach to translate public health priorities into service delivery actions or into purchasing decisions of the NHIFA” – Hungary Country Assessment

“There did not appear to be a very clear process to determine the allocation of resources for public health vs. individual services ... It was not fully clear how the resource allocation process takes place, in particular rationing when resources fall short. Rationing of services takes place de facto rather than a result of a transparent process for prioritizing and determining what not to cover, given resource constraints.” – Republic of Moldova Country Assessment

“There is a formal process for setting priorities, but the criteria for selecting priorities or weighing them against others are unclear.” – The former Yugoslav Republic of Macedonia Country Assessment

“The main weakness of the current priority-setting approaches is the lack of criteria for the split between population and individual services ... the funding balance across five programmes is mostly based on historical precedents rather than objective criteria” – Kyrgyzstan Country Assessment

**Table 5.2. Predominant payment mechanisms**

	<b>Primary care</b>	<b>Specialist care</b>	<b>Hospital care</b>
<b>Armenia</b>	Capitation + pay for performance (P4P)	Global budget + fee-for-service (FFS)	Global budget + FFS
<b>Belarus</b>	Line-item budget adjusted for regional population numbers	Line-item budget	Line-item budget based on historical incrementalism
<b>Croatia</b>	Fixed budget + capitation + FFS + P4P	FFS	Case-based payment
<b>Estonia</b>	Fixed budget + capitation + FFS + P4P	FFS + per diem + diagnosis-related groups (DRG) (in acute inpatient care)	FFS + per diem-based units + DRG
<b>Hungary</b>	Capitation + P4P	FFS	Case-based payment
<b>Kazakhstan</b>	Capitation + P4P	FFS	Case-based payment
<b>Kyrgyzstan</b>	Capitation	FFS	Case-based payment
<b>Republic of Moldova</b>	Capitation + P4P	Capitation + P4P	Case-based payment
<b>Serbia</b>	Capitation + P4P	Global budget + FFS	Global budget + FFS
<b>Tajikistan</b>	Line-item budget adjusted for regional population numbers	Line-item budget	Line-item budget based on historical incrementalism
<b>The former Yugoslav Republic of Macedonia</b>	Capitation + P4P	FFS	Case-based payment
<b>Turkey</b>	Fixed budget + capitation + FFS + P4P	FFS	Case-based payment

Similar observations were made for a larger number of countries in a recent review by the Organisation for Economic Co-operation and Development (OECD):

Most often, ... traditional ... ways of paying providers – fee-for-service (FFS), capitation, salary, global budget or more recently diagnosis-related groups (DRG) – are often poorly aligned with contemporary health system priorities [such as] improv[ing] quality or deliver[ing] care more efficiently. ... Ageing societies and changes in life styles such as unhealthy diet and physical inactivity have led to a rise in the prevalence of chronic conditions. In addition, more and more patients now suffer from multiple morbidities. New care models centred around the patient have been developed to address the needs of those requiring the co-ordination of activities among different health providers working in various settings. Traditionally, payment systems do little to support these new care models as health service provision is predominantly financed in a “silo” way. This implies a strict separation in the financing of the various health providers with few incentives for co-operation across sectors. Frequently, this contributes to fragmentation of care with poor patient experience and health outcome. (OECD, 2016)

At the same time, it is important to underscore that, for the 12 countries participating in the assessment, the shift to capitation in primary care was a sensible move. Most countries were new to strategic purchasing and the predominant payment mechanism in the public sector was historical line item budgets based on norms. Capitation payment loosened this rigidity. At the same time, it enabled health expenditure to be contained, which was critical for fiscally constrained transition countries. It also enabled the allocation of public funds to be equalized by focusing on population and not on structures. It was not overly complex, and it allowed step-by-step development of newly established purchasers and the management capacity of providers, who (to varying degrees) were newly autonomous.

Similarly, the introduction of case-based payment mechanisms for hospitals introduced a new era in transition countries and shifted the focus away from inputs to outputs. With historical line-item budgets, the activity mix of hospitals was a so-called black box; case-based payment has opened this box and contributed to a much greater understanding of provider activity. This detailed activity information (albeit with all its well known shortcomings) is valuable for purchasers and providers alike. Case-mix adjustment facilitates many analytical and managerial decision purposes. Finally, the adoption of case-based payment has contributed to greatly strengthened information systems.

Nevertheless, incentive misalignment has been increasingly recognized as a key barrier to moving towards more appropriate service delivery arrangements. In the countries reviewed, the widespread introduction of pay-for-performance mechanisms in primary care, often focused on NCDs, has been a way to attenuate this misalignment. Of the 12 countries assessed, eight report having introduced pay-for-performance in primary care with an NCD-relevant component. An OECD review reported that in 2012 at least two thirds of OECD countries had a pay-for-performance mechanism in place (OECD, 2016). On the one hand, the introduction of pay-for-performance has led to improvements in those indicators that were tracked for calculation of financial incentives, in particular when introduced in addition to capitation payments for early detection and disease management in settings with low primary care volume. On the other hand, it has not produced breakthrough quality improvements overall, nor has it led to a significant reorientation of service delivery patterns (OECD/WHO, 2014).

## Barrier 8: Ineffective coverage of and adherence to NCD medication

Even with concerted efforts to scale up population interventions, many people will develop chronic conditions and require long-term access to affordable medicines for disease management. Chapter 4 has shown that, in the eastern part of the Region at least, a large proportion of those who could greatly benefit from medicines do not. Underuse of effective medication for hypertension and diabetes appears to disproportionately affect rural areas and men. The reasons for the underuse of effective medication include a range of indirect health system factors already explored above, as well as direct factors linked to medicines policies. The indirect factors include underdiagnosis or late diagnosis of NCDs linked to passive, episodic care and the treatment-oriented modality of primary care, as well as weak integration with outreach services to mobilize people. These in turn are affected by challenges in health workforce conditions, financial incentives and the underuse of technology. The direct factors related to medicines policies, as reported in the country assessments, can be grouped around coverage and pricing policies, generic prescription and consumption practices, and issues related to adherence. In general, the availability of medicines was not considered to be an issue in the Region, with the exception of very remote rural areas.

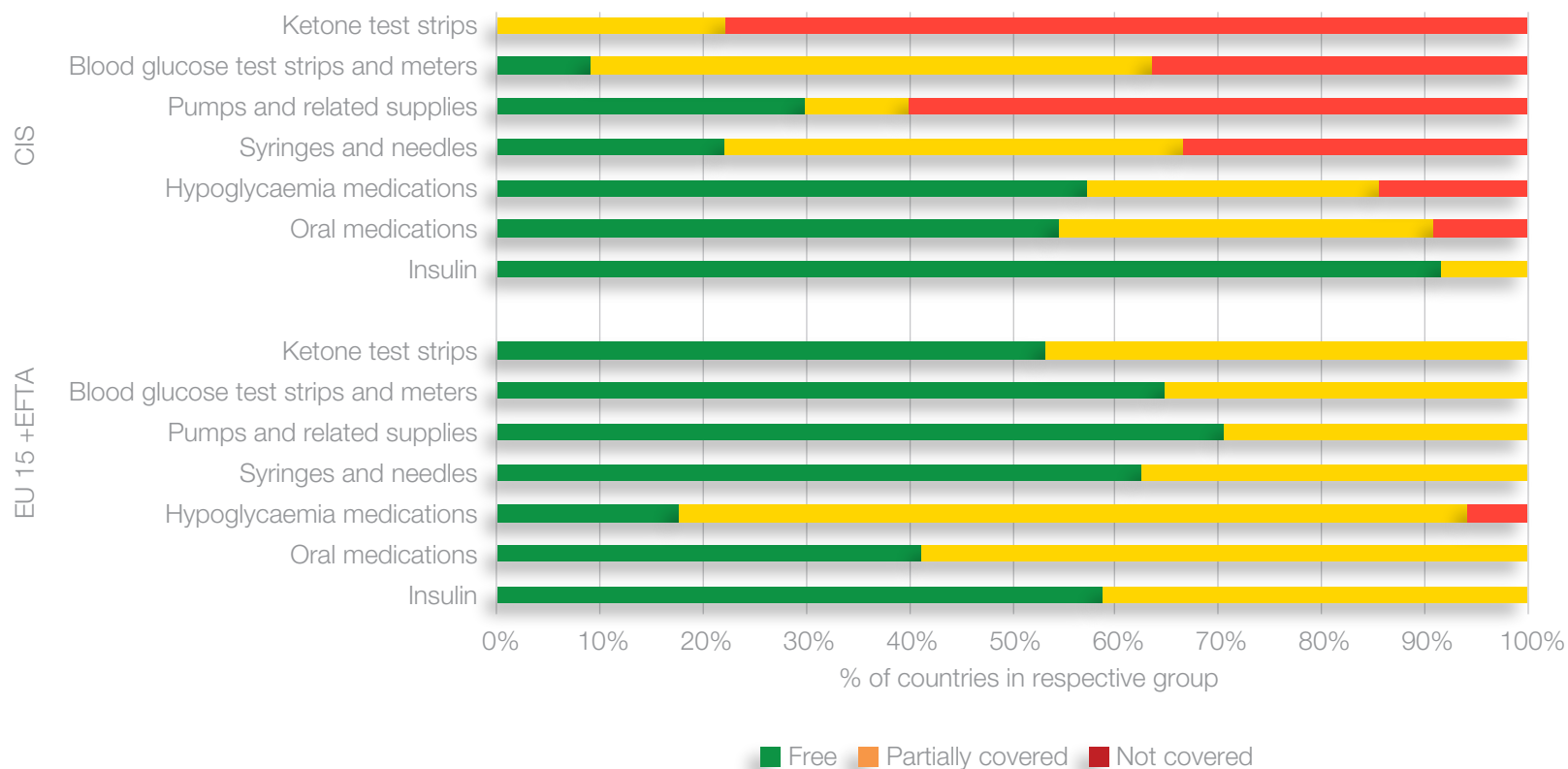


In terms of coverage, about half of the countries assessed have introduced explicit publicly funded coverage of outpatient medicines for CVD and diabetes (see Figure 5.5). Croatia, Estonia, Hungary, Kyrgyzstan, the Republic of Moldova, Serbia and the former Yugoslav Republic of Macedonia report that all first-line medications for CVD and diabetes are on the list of medicines partially or fully covered from public funding. This pattern is echoed in the literature from western Europe, where these medicines are largely available with low or no cost-sharing (WHO Regional Office for Europe, in press; OECD/EU 2016). The assessments from Kyrgyzstan and the Republic of Moldova illustrate the fact that, even under great resource constraints, focusing on a limited number of well selected medicines with strong rationing mechanisms can yield an outpatient drug benefit with acceptable budgetary impact (Ferrario et al., 2014, Ferrario et al., 2016; WHO Regional Office for Europe, 2016c). It is important to note that the country assessments examined the financial burden related to NCD medicines (in other words, those medicines necessary for delivering core individual NCD services),

rather than the financial burden of medicines for people with NCDs. This is an important distinction, as even a small degree of cost-sharing may impose a considerable burden on people who need daily medication, often for multiple causes (Thomson, Cylus & Evetovits, in press).

Where coverage of outpatient medicines for CVDs and diabetes is not in place or is less comprehensive, patients often shoulder the full cost of their treatment through out-of-pocket payments. Most of the countries where this is the case implement a limited range of strategies to ensure low prices of outpatient medicines. Instruments such as price regulation and measures to ensure market competitiveness are not widely in use, although they could lead to a reduction in out-of-pocket payments for pharmaceuticals and to better access in the absence of coverage policies or for those not covered. The lack of the use of instruments to ensure affordable prices is exacerbated by tax policies that place a high value added tax on medicines, further increasing the financial burden on the population. Although medicines for CVDs and

**Figure 5.5. Coverage of diabetes medications and devices**



Note: EU 15 = member countries of the European Union prior to 1 May 2004; EFTA = European Free Trade Association; CIS = Commonwealth of Independent States.  
Source: WHO Regional Office for Europe.



diabetes (with some exceptions, such as statins in certain countries) are not expensive, an increasing body of literature shows that even a small degree of cost-sharing can be a barrier to adherence to the long-term treatment required for chronic conditions (Smith & Nguyen, 2013; Murphy et al., 2016; Baicker & Goldman, 2011). Inadequate adherence can lead to greater system costs over the long term because of higher rates of complications and hospitalization. Expanding the coverage of cost-effective outpatient NCD medicines is one of the most promising areas of strengthening health systems for better NCD outcomes and for a lower financial burden.

A first step towards making evidence-based decisions about coverage is to ensure that cost-effective medicines for NCDs are included in a country's essential medicines list (EML). The assessed countries have EMLs in place but in some cases they are not periodically revised and updated, or countries lack transparent, evidence-based mechanisms to decide whether or not to include a new drug. The limited capacity to perform cost-effectiveness and budget impact analyses of drugs included in EMLs was also perceived as an obstacle to optimal use of this tool. There are good practices among the countries studied: Kyrgyzstan was the first CIS country to develop an evidence-based formulary, in 1996, linking outpatient drug benefit to the EML and clinical practice guidelines; Belarus has a special commission which revises and updates the EML each year; and Tajikistan has a procedure consistent with WHO recommendations to develop its EML.

In turn, the EML and the list of medicines covered needs to be consistent with evidence-based clinical practice guidelines (CPGs) on NCDs. Up-to-date CPGs do not exist for all the major NCDs (see Chapter 4). Nonetheless, some countries have put in place significant mechanisms to support evidence-based practice. For example, Kyrgyzstan has established a national strategy and unit on evidence-based medicine and has approved a CPG methodology, while in Tajikistan a centre for evidence-based medicine was created at the Tajik State Medical University to support the development of CPGs. Even so, there can be challenges with the capacity, scale-up and sustainability of such specialized units. Turkey has a structured process for the development of CPGs, but not all CPGs for NCDs have been updated. A national centre for health technology assessment has been established in Estonia, while in Hungary health technology assessment has been introduced and included in the procedure for reimbursement of medicines and medical devices. The use of health technology assessment has expanded rapidly in the past decade in the health systems of high-income countries with mature public health systems, but middle- and

low-income countries face constraints linked to their health systems – such as budgetary restrictions and structural fragmentation – which make it more complicated to apply health technology assessment in decision-making. It is not straightforward to apply health technology assessment in middle- and low-income countries in areas such as the introduction, pricing and reimbursement of medicines and medical devices.

All the assessed countries report placing great emphasis on policies that promote the prescription and use of generic medicines, but deep-rooted problems seem to hamper implementation in some cases. On the positive side, generic medicines are widely available; only a few countries (Armenia, Kazakhstan and Tajikistan, for instance) report availability problems, mostly in remote rural areas. Many countries also monitor and feed back information on generic prescription and consumption patterns. On the negative side, guidelines for NCDs are not always available, are outdated, may not be in line with medicine coverage policies, or may not be extensively used if available. Turkey, for example, reports that updating guidelines and visual aids for clinical decision-making in primary care is critical for rational drug use, in addition to a well designed policy on coverage of medicines, including those for NCDs. Nevertheless, its excellent information platform offers great potential for promoting the rational use of NCD medicines in the future. Some countries are experiencing problems with the quality of medicines and with weak institutions for addressing this problem. Finally, mandatory prescription practices and restrictions on the availability of medicines over the counter can strengthen efforts to promote rational drug use and the monitoring of such use.

Many of these systemic factors contribute to the picture of adherence to NCD medication found in the WHO STEPS surveys (Chapter 3). Ineffective medicines policies leading to high prices are a primary cause of the intermittent use of medicines (non-compliance or irregular compliance with the prescribed regimen). In some cases, this is exacerbated by perceived quality concerns for generics, especially in imported markets, that push people towards high-priced branded generics and lead to even greater unaffordability. The poor are less likely to adhere to medication than the non-poor, as indicated in a recent study in Kyrgyzstan (Murphy et al., 2016), which further suggests that affordability issues play a large role. Wider health system factors, including low health literacy and the nature of provider-patient communication, also play a major role in poor adherence. Overall, only a complex set of systemic policies will help address these interlinked causes and contribute to achieving the targets related to NCD medicines.

## Barrier 9: Underuse of information solutions

Information solutions facilitate a more effective health system response to NCDs and are particularly important in the areas of managing population health, translating information and evidence into public health and clinical practice, ensuring coordination and communication among providers at different levels, etc. All the country assessments show significant efforts to put in place, expand and improve information solutions, although the assessed countries show wide variations in the stage of their development towards more comprehensive information solutions. Some countries (Armenia, Belarus, Kyrgyzstan and Tajikistan, for instance) are still focusing on putting in place basic information technology (IT) infrastructure. Others have already passed this stage, and substantial IT infrastructure has been put in place with high functionality. These countries (including Croatia, Hungary, Kazakhstan and Turkey) are in the process of establishing uniform standards of interoperability and greater integration across levels of care. A smaller set of countries (such as Estonia) exhibit extended use of information solutions, with significant levels of integration, and are focusing on enhancing their functionality.

Despite this variation, a number of common challenges need to be overcome in order to strengthen the health system response to NCDs through information solutions:

- Most of the countries assessed report challenges in establishing regular monitoring of NCD-related behaviours, such as diet and smoking. Behaviour surveys are ad hoc and not systematic over time; samples may not be large enough for targeted policy measures by region; and surveys are not integrated with sources of administrative information.
- There are limited information solutions to track equity in NCD outcomes and related health system performance. There is accordingly little evidence of a targeted policy response and monitoring in the countries assessed.
- The vast majority of the countries assessed do not use population health information to establish risk profiles and to design targeted public health and primary care action, particularly strategies for case detection and disease management. Enrolment databases at primary care level are typically used administratively for the purchaser to calculate capitation payments, rather than to analyse the risk profile of the population and vary the local public health and primary care response accordingly.
- Electronic medical record systems that are shared by primary and specialist care levels continue to offer a great area of unexploited opportunity in most countries.
- Even when large amounts of valuable data are generated through existing information solutions, countries are not using them to their full potential to improve system performance.

## Health system barriers and equity concerns

Within-country inequalities in NCD outcomes can arise from factors at several levels, including the broader socioeconomic context, differential exposures to risk factors, differential vulnerabilities, different experience within the health system and different consequences of illness (CSDH, 2008). The health system can play an important role in reducing inequalities in NCD outcomes and help address their consequences, for example through policy formulation, intersectoral action, equity-sensitive public health policies, and universal access to cost-effective individual health services without financial hardship. The country assessments explored equity dimensions of the health system barriers. The following section and Table 5.3 give a brief synthesis of equity-enhancing and inequality-perpetuating health system policies from the 12 country assessments where future action could narrow health inequalities.

As a rule, the general population's access to health services is viewed as quite good in the country assessments, and concerns related to equal access are of a specific nature. In part, good general access is a legacy of the health systems in this part of the Region, with extensive service delivery networks, particularly for primary care, and a relatively large health workforce. However, it also reflects an increasing orientation towards equity in national development and health plans, which place appropriate emphasis on equity-enhancing policies in line with Health 2020, the European health policy. In a significant number of the countries assessed, health equity is one of the main components of the national health plan or development programme. Turkey stands out in this regard, since the ultimate goal of its Strategic Plan 2013–2017 was “to protect and improve the health of our people in an equitable manner”. Similarly, the Estonian National Health Plan 2009–2020 includes social cohesion and equal opportunities as one of its core areas, and it specifically highlights the issue of high out-of-pocket payments for chronic disease care affecting low-income groups. This equity focus is also observed in countries such as the former Yugoslav Republic of Macedonia, where improving the health of vulnerable populations (including the poor and ethnic minorities) has been set as a national priority, and Kyrgyzstan, whose current national health plan aims to ensure equity and access to quality health services.

Despite the greater focus on equity in national health plans, this orientation has not been reported with regard to NCD-related public health action in these 12 countries. Health promotion and disease prevention strategies for tobacco control, alcohol-related harm and

nutrition target the general population. Approaches reflecting universal proportionalism (Chapter 7) have not been widely noted in country assessments. In turn, this reflects the need to strengthen the mandate of public health agencies in this area, as well as the competencies required to develop, implement and monitor equity-enhancing public health policies.

An important equity concern relates to the underuse of primary care by men. This is especially relevant in central Asia, as reflected in the country assessments. According to a household survey carried out in Kyrgyzstan in 2010, there was a more than twofold gender gap (favouring women) in primary care utilization after the age of 40 years. Similarly, the assessment report on Tajikistan identifies the poor detection and treatment of hypertension among men as being the result of fewer primary care visits and links this to the higher NCD mortality among this population group. Kazakhstan's Gender Equality Strategy 2006–2016 acknowledged delayed health-seeking behaviour among men, as well as the higher priority given to women's health in health services that were mainly designed to address maternal and child health needs.

There are a number of hypotheses regarding this pattern. First, theories of masculinity have been proposed to explain delayed care-seeking by men, and these patterns of behaviour are stronger in the eastern part of the Region (Jeffries & Grogan, 2011; Noone & Stephens, 2008; Springer & Mouzon, 2011). Second, gender matching can also potentially explain these patterns of care-seeking. Since most primary care doctors and nurses are women, men may view primary care units as care-seeking locations for women (Rechel, Dubois & McKee, 2006). Finally, men may have a greater distrust of primary care than women and may have a preference to seek care immediately at specialist and hospital levels (Balabanova & McKee, 2002). While the precise reason is not well understood and requires more research, given the high yet avoidable premature CVD mortality among men, overcoming the gender gap in primary care utilization would yield a large dividend in terms of better NCD outcomes.

Living in distant rural areas results in compromised access to skilled health professionals, including primary care staff and specialists, mainly because of internal and external migration and the lack of replacement of the ageing health workforce. In the Republic of Moldova, the shortage of specialists in rural areas, coupled with a decreasing number of family doctors to manage and diagnose NCDs, hampers optimal access to care by rural populations with chronic conditions. Likewise, the wide disparities in the distribution of NCD professionals, including cardiologists, in Tajikistan between the capital and its surrounding rural regions have been noted. In many countries, access to palliative care

**Table 5.3. Equity dimensions of health system barriers**

Barrier	Equity-enhancing	Inequality-perpetuating
<b>1</b> Governance	The strong focus on equity in national policies and plans reflects a changing political ethos in the Region	The implementation, effectiveness and monitoring of equity-enhancing policies could be strengthened
<b>2</b> Public health		Public health agencies are insufficient champions of equity-oriented policies  Health promotion and disease prevention strategies and policies do not adequately reflect inequalities in nutrition and in tobacco- and alcohol-related harm  Surveillance systems have not integrated equity dimensions into the monitoring and analysis of health outcome and health behaviour information
<b>3</b> Primary care	Strong universal access to a broad network of primary care facilities in all countries without significant financial burden	Significant underuse of primary care by men reduces the potential for early detection and management  Poor quality of care leads to inappropriate prescribing and dispensing of medicines or inappropriate referral, which shifts health-care costs onto patients
<b>4</b> Specialist services	Increasing regionalization of specialist care improves the quality of specialist care as close to the patient as it is safe	Delayed care-seeking and forgoing of primary care services, by men in particular, can lead to a higher financial burden when seeking frequent care at the specialist/hospital level  Rural and/or financially vulnerable people may face barriers to physical access to specialist care (cardiology, palliative care, high-technology services)  The widespread practice of informal payments adds to the financial burden, and this is most prevalent at the specialist/hospital level
<b>5</b> Provider-centred systems		Lack of specific policies to address health illiteracy among the poor and vulnerable  Poor awareness about entitlements, especially in changing contexts, may lead to a higher than necessary financial burden  Care quality based on informality and personal relationships jeopardizes care for the vulnerable

Barrier	Equity-enhancing	Inequality-perpetuating
<b>6</b> <b>Health workforce</b>		<p>Lack of competencies related to equity-enhancing policy design</p> <p>Shortages of skilled staff in rural areas, such as general practitioners, nurses and specialists, compromise access to adequate health care by rural populations</p> <p>Low salaries of health workers contribute to the practice of informal payments</p> <p>Limited access to certain types of health professionals (nutritionists, diabetologists, palliative care workers)</p>
<b>7</b> <b>Financing</b>	<p>The commitment to high levels of population coverage translates into mobilization of compulsory pooled funding in many countries</p> <p>Explicit regional equalization mechanisms have improved services in previously underfunded, typically rural, areas</p>	<p>In some countries, there is limited political will to increase public funding for health, reduce fragmentation in pooling arrangements and seek efficiency gains, leading to high out-of-pocket payments</p> <p>Implicit resource allocation mechanisms and processes lead to inequality in funding, services and quality of care</p>
<b>8</b> <b>Medicines</b>	<p>Good availability of essential NCD medicines through effective pharmacy networks, with the exception of pockets of unavailability in selected remote areas</p>	<p>Low coverage of outpatient medicines for patients with chronic conditions and cancer, leading to high out-of-pocket payments</p> <p>Lack of explicit instruments for regulating prices or improving the market competitiveness of outpatient medicines</p> <p>Lack of availability of palliative medicines, particularly in rural areas</p>
<b>9</b> <b>Information solutions</b>		<p>Underuse of information solutions for sharing medical information leads to duplication of tests, diagnostics and medicine prescriptions and hence to a higher financial burden on patients</p>

is practically not available in rural areas and is often limited to certain diseases, such as cancer or AIDS (Skarphedinsdottir et al., 2014). Small hospitals may not be allowed to stock and prescribe strong opioids and analgesics, hindering access to appropriate palliative care by patients from remote rural areas (Human Rights Watch, 2015).

In several countries, the uneven distribution of the health workforce, together with the scarcity of public and private transport and the low number of primary care services in rural areas, was found to be responsible for increasing the rate of hospitalization. In the same way, the lack of public transport to hospitals is often reported as an important barrier to access to specialist care for rural populations. The absence of a formal system of regionalization of the care of patients with CVDs in some countries limits access by vulnerable and rural populations to quality high-technology services. At the same time, it also triggers informal regionalization, whereby wealthier patients bypass their assigned regional hospital to seek care in the hospitals of the largest cities.

The 12 countries assessed vary significantly in terms of financial protection, with the variations closely linked to their public finance capacities and strategies and their coverage policies. Armenia, for instance, with the lowest per capita public financing in the Region, reports a significant financial burden for patients, including for NCDs. Kyrgyzstan and the Republic of Moldova have demonstrated successes in bringing down the financial burden by giving high priority to health in government spending, thereby partially compensating for their limited fiscal space. Croatia and Hungary, on the other hand, report that financial burden is not an issue for those seeking care for NCDs. Regardless of where countries lie on this spectrum, spending on medicines is the main contributor to out-of-pocket payments in the Region, and thus to financial burden.

The role of informal payments, especially for more complex care received at higher levels, has been highlighted in a number of country assessments as a factor potentially influencing the financial burden. In the Republic of Moldova, more than one third of patients make informal payments for outpatient care, which may limit their access to

the necessary medical attention. A similar picture is seen in Armenia, where financial protection is jeopardized by informal payments, preventing people from seeking care even if they are eligible for the basic benefit package. Several countries, including Kyrgyzstan, have invested heavily in monitoring informal payments, and the data support the hypothesis that patients are more likely to pay informally for care sought at higher levels of specialization and for high-technology interventions. For NCDs, the Kyrgyzstan assessment highlights the fact that more than 70% of patients frequently pay for admissions related to circulatory system diseases and cancer. While moderate amounts are paid for circulatory diseases, cancer treatment tops the chart of informal payments to physicians (Jakab, Akkazieva & Kutzin, 2016). On a more positive note, of the assessed countries, Estonia stood out for not having informal payments at all, and their role is of less importance in the majority of central European countries.

In sum, reducing health inequalities for NCDs through action from within the health system requires featuring equity-enhancing policies in national development and health plans, introducing the concept of universal proportionalism in public health action, addressing the gender gap in primary care utilization, strengthening health workforce policies in terms of numbers, distribution and skills mix, addressing the equity implications of regionalization, increasing public financing for health and strengthening coverage policies for medicines. This agenda is fully in line with the agenda of moving towards universal health coverage.

## Conclusions

This chapter has put the spotlight on nine health system barriers that prevent core NCD interventions and services being scaled up for better NCD outcomes. It has also highlighted the equity dimensions of these health system barriers in order to reduce NCD-related health inequalities. The nine following chapters in Part C of the report will outline policy options to address each of these health system barriers in a systematic way.



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# 6

## **Governing** for better noncommunicable disease outcomes

**Frederiek Mantingh, Sylvie Stachenko,  
Monika Kosinska, Melitta Jakab, Jill Farrington**

# Agenda for action

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**Stakeholders need to be engaged throughout the policy cycle** to ensure greater commitment and accountability for outcomes

1

2

**Moving towards more stable governance arrangements** strengthens sustainability of intersectoral action for NCDs

**Good governance principles should be applied** to guide the relationship between the government and non-State actors

3

4

At the local level, **governance** across sectors and between levels of government **needs to be coherent**

## Motivation

Although good progress is being made in reducing premature mortality from NCDs in the WHO European Region, there is scope for acceleration (Chapter 3) and there is certainly great potential for reducing the prevalence of risk factors by scaling up core NCD interventions and services (Chapter 4). While the risk factors for NCDs imply personal behaviours, these behaviours are driven by the broader social, economic and environmental determinants of health, and the conditions in which people are born, grow, live, work and age. Policies in sectors such as trade, taxation, education, agriculture, urban development and food production have a major influence on these risk factors and the underlying determinants for NCDs (WHO, 2015). Thus, governing for better NCD outcomes requires a strong outcome focus in policy development and implementation on the one hand, and action across different sectors on the other (Marmot, 2014).

Recent global and regional processes have resulted in a powerful outcome framework for NCDs, giving important momentum for stronger outcome orientation. Under Sustainable Development Goal target 3.4, Member States agreed that by 2030 they would “reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being” (United Nations General Assembly, 2015). The adoption of this target was preceded by the adoption, by the Sixty-sixth World Health Assembly, of the nine targets of the Global NCD Monitoring Framework (WHO, 2014), and of the targets for implementation of Health 2020, the policy framework for health and well-being in the WHO European Region, by the Regional Committee for Europe at its sixty-third session (WHO Regional Office for Europe, 2014a). These global and regional commitments give clear guidance to Member States for setting their own targets and measuring progress. Annual regional and global reporting against these goals also provides good benchmarks of progress and helps to maintain momentum at the national level.

Global and regional processes have supported a shift in the focus of NCD policy development from the health system alone towards inter-

sectoral action and health in all policies. The Political Declaration of the High-level Meeting of the United Nations General Assembly on the Prevention and Control of Non-communicable Diseases highlighted the need for a whole-of-government and a whole-of-society response (United Nations, 2011). Heads of State and government acknowledged the need for multisectoral action at all levels to address NCD risk factors and their underlying determinants comprehensively. This commitment was reaffirmed in the Outcome document of the 2014 High-level meeting of the United Nations General Assembly to undertake the comprehensive review and assessment of the 2011 Political Declaration (United Nations, 2014). In the WHO European Region, Health 2020 calls for new forms of participatory governance for health and emphasizes the need for better coordination and integration both within and outside government (WHO Regional Office for Europe, 2013a). Health 2020 is fully aligned with the Sustainable Development Goals, which call for national responses that build synergies across sectors ensuring coordination and coherence between policies (United Nations, 2015). Taking action on the social and environmental determinants of NCD can also address many health inequalities effectively (Marmot, 2014).

Chapter 5 highlighted that all 12 of the country assessments on health system response to NCDs had noted that Member States are striving to place health high on their government agendas (including by integrating health into national development plans). They are expanding policy reach beyond the traditional health system and are launching and strengthening intersectoral action. At the same time, Chapter 5 also underscored the need for more rigour in policy development to ensure that commitments are translated into effective action and that national time-bound targets are adopted. Establishing effective governance arrangements for sustained intersectoral action has, however presented challenges in many countries, especially regarding instruments of joint action, joint enforcement and joint monitoring.

Against that background, this chapter proposes strengthening governance arrangements for actionable and pragmatic policy directions for

better NCD outcomes. It focuses both on strengthening outcome orientation through policy development and implementation and on different dimensions of intersectoral action. It reviews how countries can adapt their governance mechanisms and instruments in response to key challenges. Since the focus of this report is on health systems, this chapter will consider intersectoral governance issues from inside the health system, and discuss how to engage stakeholders in a complex multilayer policy cycle for stronger accountability for outcomes. It describes the necessary structures for the accommodation of intersectoral governance, and zooms in on a particular type of intersectoral action: the interaction with the private sector relevant for NCDs. Lastly, the chapter ends by highlighting opportunities for action at subnational levels.

Governance is an all-encompassing topic and beyond the four focus areas included here, many other issues would merit attention (such as the governance of individual health services, financing, health workforce, medicines). This chapter does not, however, aim to address these.

While governance may be variously defined, for our purposes it shall be understood to mean “the structure of decision-making and policy implementation in a system” (Greer et al., 2016). The approach put forward in this chapter is underpinned by the value base of Health 2020, which includes fairness, sustainability, quality, transparency, accountability, gender equality, dignity and the right to participate in decision-making (WHO Regional Office for Europe, 2013a).

## Stakeholders need to be engaged throughout the policy cycle to ensure greater commitment and accountability for outcomes



**Key Message**

Taking up the challenge of Health 2020 for more participatory governance for health and an increasingly intersectoral approach requires rethinking NCD policy development and implementation, including the role and participation of key stakeholders at different stages in that process.

NCD policy is increasingly complex and presents significant challenges for policy coherence. Policies that aim to improve NCD outcomes are likely to be embodied in a wide range of policy documents developed and implemented at various levels of authority through multiple policy cycles. These can include broad or umbrella health and development policies, health system strengthening policies (which focus on, among others, public health, health promotion policies, preventive health services policies, primary care policies), disease or risk-factor specific policies (such as a cardiovascular disease programme, obesity policy or diabetes prevention policy) and policies for the local level or specific settings (Wood-Ritsatakis et al., 2009). This complexity poses a major challenge with regard to ensuring policy coherence and alignment across policy cycles and policy documents. Achieving this requires that major priorities with an impact on outcomes are indeed included and

resourced, complementary policies are identified and designed, conflicts among policies are resolved, and overlaps are systematic rather than ad hoc and wasteful.

Systematic thinking and engagement of a broader group of stakeholders throughout the policy cycle can help create greater policy coherence and alignment in the health system response to NCDs. Policy cycles can be broken down in various ways but typically they consist of problem definition, in-depth diagnostics, formulation of policy options, implementation, and monitoring and evaluation; politics plays an important role throughout the cycle (Roberts et al., 2008). Management tools, such as logic models, can be useful for thinking through the basic components of the policy cycle process linking the available resources and capacities to activities, which lead to outputs, outcomes and impacts (WK Kellogg Foundation, 2004; Whittington, 2001).

An example inspired by the logic model would be that developed by NHS Scotland (NHS Health Scotland, 2018), which encourages the use of outcome frameworks for linking activities to outcomes, focus-

ing monitoring and evaluation, and engaging a range of stakeholders. These frameworks address specific topics, such as alcohol, healthy weight, mental health, pregnancy and tobacco, rather than taking a more comprehensive policy approach to NCD prevention and control. This also illustrates that the application of linear logic models is not straightforward, given the interconnected complexity of NCD policy. This interconnectedness breaks the linear character of the logic models and creates feedback loops for potential synergies and conflicts. These must be taken into account when considering the complex pathways towards a change in outcomes.

Managing this multifaceted process is not easy. Establishing a policy hub with the task of connecting multiple policy layers can contribute significantly to coherence and alignment. Engaging a broader group of stakeholders throughout the policy cycle can also foster synergies and highlight potential conflicts. The situation in Turkey is illustrative of this complex policy environment and of some helpful strategies to manage it. NCDs feature prominently in the Tenth Development Plan 2014–2018 (Grand National Assembly of Turkey, 2013), the Strategic Plan of the Ministry of Health 2013–2017 (Ministry of Health, Turkey, 2012), and in the umbrella Multisectoral Action Plan of Turkey for NCDs 2017–2025 (Meriç Yılmaz et al., 2017), which was conceived to unite several NCD disease and risk factor prevention and control plans. The Ministry of Health has led policy alignment and coherence efforts, as well as the management of the stakeholder consultation process, while the former department for chronic diseases, elderly health and disabilities of the Public Health Institute addressed NCDs specifically. Some 66 ad hoc multistakeholder committees were convened to advise on drafting of the Tenth Development Plan. The Health Strategic Plan was developed with the contribution of over 4000 stakeholders, including representatives of the central Government, academic institutions, local government, civil society, professional groups and nongovernmental organizations. The NCD Action Plan was prepared by multiple ministries, institutions, civil society and other organizations. The drafting of previous issuespecific plans, such as for chronic respiratory diseases, also involved the participation of patients, professionals and other relevant stakeholders (European Commission, 2016). For individual plans, agencies outside the Ministry of Health are often listed as being

responsible for key actions. Performance is monitored by the number of multisectoral actions completed, an indicator which reflects the performance of all government departments (Jakab et al., 2014).

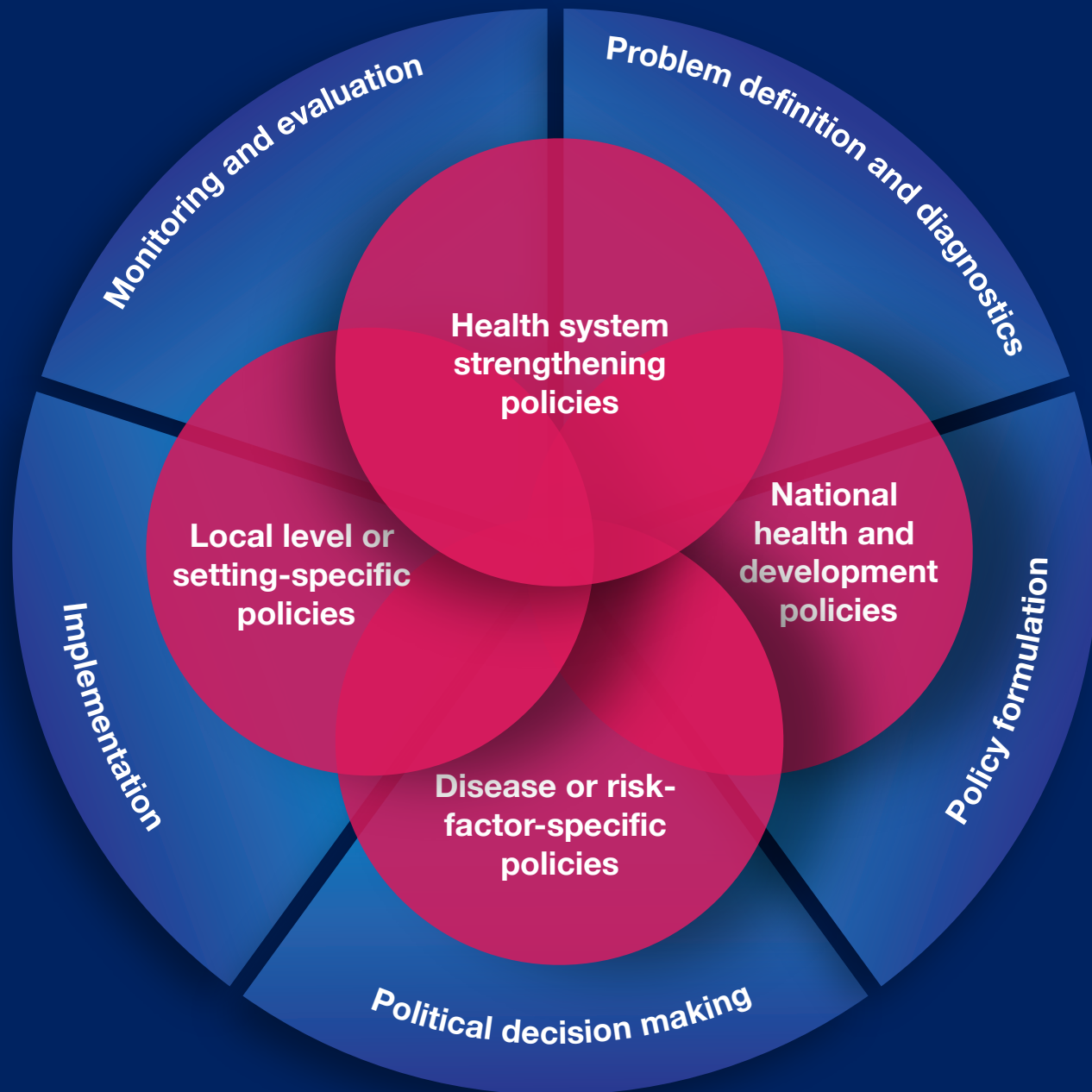
While an effective policy cycle for NCDs implies upfront establishment of multistakeholder collaboration, different partners will need to be engaged at different stages of the policy cycle, and there are various degrees of collaboration, ranging from informal coexistence and information sharing to more formal cooperation, coordination of activities and collaboration on goal achievement (Boston & Gill, 2011). The following are examples of how this might be achieved.

## **Problem definition and diagnostics**

The pathways to improve NCD outcomes are complex and influenced by many factors. It is therefore critically important to use a systematic approach to policy design, starting with a sound definition of the problem and an in-depth understanding of its multiple and often inter-related causes. The country assessments carried out within the scope of this work programme (see Chapter 2) are in fact an example of an in-depth problem definition and diagnostics exercise. The Country Assessment Guide, with its simple three pillar framework, constitutes a useful tool for Member States to define policy problems and carry out an in-depth assessment, using multiple data sources and involving multiple stakeholders. They start with an analysis of trends in NCD outcomes linked to the coverage of core interventions and services, and subsequently look into each health system barrier, seeking to understand the reasons for poor coverage and identifying root causes. Policy recommendations are then formulated then to address those root causes. Some policy recommendations can be implemented best at the government level (including by establishing effective intersectoral governance arrangements, and ensuring adequate funding for health), while some can be addressed through policies at the health system level (such as health workforce issues, models of service provision) and others through policies in other sectors. Some issues may also be more appropriately addressed at the national level, such as taxation, while others can be handled at the subnational level, such as urban design for the promotion of physical activity. The assessment



Figure 6.1. Ensuring policy coherence in complex policy cycles for better NCD outcomes



itself is helpful for ensuring that all major policy priorities are included in a policy document, resourced and monitored. Launching the assessment report at a high-level event, as was done in Belarus (WHO Regional Office for Europe, 2016a) and Armenia (WHO Regional Office for Europe, 2017a), affords an opportunity for representatives of government, nongovernmental sectors and international organizations to agree on the situation analysis and recommendations for next steps.

## **Policy formulation**

Engaging stakeholders at the policy formulation stage leads to an up-front agreement, shared goals and an accountability framework, thus making stakeholders more likely to be committed to implementation. In addition, joint policy formulation among partners with explicit benefits for all enables early alignment of policy strategies, yields win-win for the partners, and increases the chance of the policy fitting the context (Hendriks et al., 2013; Storm I et al., 2011; Molnar et al., 2016; WHO Regional Office for Europe, 2016b; Hawkes et al., 2016). While the importance of strengthening the capacity of stakeholders, particularly local partners and nongovernmental organizations, is well understood for the success of multistakeholder processes, there is also a need to ensure sufficient management and governance capacity within government to lead and manage these processes.

## **Implementation**

Ensuring timely implementation of multilayered action for NCDs requires managing a complex change process involving many actors with diverse interests, who may resist change. The subsequent chapters will outline a number of essential health system areas where institutional, cultural and behaviour change is required to scale up NCD interventions successfully, and where resistance from various sources can

be anticipated. These areas include shifting the focus and resources of public health agencies to reflect the true burden of NCDs (Chapter 7), investing more in primary care to create multidisciplinary teams accountable for population health (Chapter 8), changing health workforce education to create an ethos of people-centredness (Chapters 10 and 11). Managing such large-scale transformative agendas requires a planned but flexible process with change management experience (chapter 16). Implementation is influenced by multiple factors occurring in complex environments (Wood-Ritsatakis, et al., 2009).

## **Monitoring and evaluation**

In addition to various monitoring frameworks, comprehensive health system performance assessment can be a helpful tool for dealing with some of the complexities described above and creating a multilayered, institutionalized accountability framework. Performance assessments can create a feedback loop between policies implemented and their impact on the goals and objectives set in policy documents; lessons learnt can be returned into subsequent policy cycles. From an NCD perspective, a new generation challenge for health system performance assessment is to include assessment of the effectiveness of intersectoral action for better NCD outcomes, and translating those outcomes into measureable indicators. Additionally, integrating social determinants of health and the ways to influence them into the assessment can also spark action beyond the health system to reduce health inequities. The assessment can provide a powerful platform for regular dialogue to assess progress towards integrating information from different perspectives. Performance assessment and other robust monitoring efforts require a well functioning information system; this is an area of health system strengthening for NCDs in which investment is particularly worthwhile (see Chapter 14).

## Moving towards more stable governance arrangements strengthens sustainability of intersectoral action for NCDs



We have already seen that engaging stakeholders across the policy cycle leads to stronger commitment and greater accountability for outcomes. Since NCDs require the engagement of stakeholders from both within and outside the health system, it is important to consider how to create the preconditions for sustainable intersectoral governance and the mechanisms for participatory governance.

The most common and necessary approach for facilitating intersectoral governance is political leadership. Political leaders can push for intersectoral collaboration by requesting intersectoral policies and setting targets and goals involving sectors other than health. They can show their support for intersectoral collaboration in their speeches and public appearances (Greer & Lillvis, 2014). Before political leadership can be leveraged, however, much must be done in preparation for seizing the moment for policy change. The problem must be recognized, a solution must be available, and the political climate must be right for change (Kingdon, 1984). If those preparatory conditions are not met (the problem is not recognized, or there is no solution available), it will not be possible to seize that political opportunity when it arises. Capacity to govern a multistakeholder process (be it across government or involving external partners), is therefore very important; lack of capacity to initiate, prepare for, or follow up on processes can result in their failure.

Policy-makers can use information, evidence and knowledge tools, such as geographical information systems, environment impact assessments and health impact assessments, as a catalyst for intersectoral governance. The effectiveness and reach of these assessments have been reviewed in high-, middle- and low-income countries (Lock, 2005; Wismar et al., 2007; Haigh et al., 2013; Byambaa, Janes & Davison, 2014). The direct benefits of health impact assessments were reported as the possibility to change and influence policies under consideration and having an immediate impact on decision-making. Indirect benefits identified were a positive influence and a change in stakeholder relationships, and a better understanding of how health is affected by different policy areas. These assessments stimulate the development of shared policy agendas, and improve intersectoral

collaboration, thereby creating openings for health advocates and experts to be brought into the discussion. For some low- and middle-income countries, it is reported that health impact assessments may not have had optimum impact owing to a lack of specifically designed training and capacity-building materials.

Another way of building the knowledge and evidence base as a precondition for strengthened intersectoral governance is to assess the comparative health consequences, for example through the development of a business case. Collaboration with other sectors and ministries (Chapter 12) may be easier to achieve when initiatives are framed in terms of language, concepts, goals and values that are appropriate for the sector concerned. Business cases can empower policymakers by showing the positive financial benefits of investing in NCD prevention. An analysis of the economic burden of NCDs, the cost of interventions and the return on investment can illustrate how the reduced cost of a healthier population often outweighs the investment needed to lower the prevalence of NCDs. The contribution of other sectors is therefore crucial in helping to achieve agreed NCD goals and policy priorities. Kyrgyzstan serves as a good example when making the case for investment on NCDs (Ministry of Health of Kyrgyzstan, 2017).

Alternatively, intersectoral governance can be facilitated using indirect techniques to create pressure for policy change, such as broadening access to data. This can be, for example, public health indicators that reveal territorial, class-based or ethnic health inequalities. Such indicators make it possible to focus public attention on particular issues by providing advocates with the opportunity to expose the extent of a health problem, or show that a past problem is getting worse (Greer & Lillvis, 2014).

While political leadership and support have been identified as key facilitators for intersectoral governance, relying on political leadership alone as a mechanism for governing across sectors can at times be risky, for example when priorities change. Additional mechanisms pro-

posed for successful intersectoral collaboration include institutionalizing processes into bureaucracy, and using indirect strategies serving to empower allies (Greer & Lillvis, 2014).

Institutionalizing intersectoral processes into bureaucracy complements political leadership because it allows intersectoral action to be less dependent on individuals and more sustained over time. While in some cases, bureaucracy's lack of flexibility can be considered its weakness, it might be seen as a strength if the aim is consistency. Table 6.1 provides an overview of possible mechanisms for governing across sectors, including definitions and country examples by way of illustration. The mechanisms have been grouped into six categories: political, legal, financial, processes, mandates and structures. This grouping is derived from a literature review on governance struc-

tures supporting health in all policies in the WHO European Region and structures supporting the integration of health outcomes into the agendas of other sectors (WHO Regional Office for Europe, forthcoming 2018).

Several factors have been identified to make these mechanisms for governing across sectors sustainable and successful, including: flatter organizational structures (Hendriks et al., 2013); incentives to enhance different units to work together (Forbat, 2015); using already established structures and mechanisms, such as existing interdepartmental working groups (Jakab et al., 2014); and institutionalizing a mechanism for the duration of the programme (WHO Regional Office for Europe, 2016b).

**Table 6.1. Mechanisms for intersectoral collaboration and their application at country level**

Mechanisms	Definition	Country examples
<b>Political</b>	High-level intersectoral committees and parliamentary committees	<b>Iceland</b> has established the Ministerial Council on Public Health. The members of the Council are the Prime Minister, the Minister of Health, the Minister of Education, Science and Culture and the Minister of Social Affairs and Housing, as well as the Minister for the Environment and Natural Resources, as needed.
<b>Legal</b>	Public health acts and legislative frameworks, such as tobacco control acts	<b>The Republic of Moldova</b> has a strong law on tobacco control which includes smoke-free public and work places, a ban on tobacco advertising, promotion and sponsorship, health warnings on cigarette packets and the prohibition of State partnerships with the tobacco industry (Law No. 124).
<b>Financial</b>	Joint or pooled budgets, dedicated or delegated funding	<b>Andorra</b> has adopted the "Nereu" programme to tackle childhood overweight and obesity. Primary funds for the programme came from the budget of the Ministry of Health and Welfare, while the Ministry of Education and Culture funded physical activity lessons.
<b>Policy</b>	Includes policies, targets, strategies and plans	<b>Luxembourg</b> has taken intersectoral action to reduce obesity, under its national "get moving and eat healthier" strategy to increase physical activity and promote balanced diets for all its residents (WHO Regional Office for Europe, 2016b).
<b>Technical</b>	Includes guidelines, norms and standards and health impact assessments	<b>Slovenia</b> has a long tradition of assessing impacts on health, with procedures for doing so embedded in legislation. An assessment model for food and agricultural policies related to accession to the European Union was developed, which resulted in better cooperation between the agriculture and health sectors, with the outcome being inclusion of the food security pillar as an important part of the resolution on the national food and nutrition action plan (Wismar et al., 2007).
<b>Structural</b>	Interdepartmental committees with secretariats, specialist agencies, small units attached to the Prime Minister's office, or secretariats	<b>Hungary:</b> the Government has merged health, social affairs, education, youth, sport and social inclusion into one ministry. This provides a structural framework for closer cooperation between sectors (Vokó et al., 2014).

Regardless of how intersectoral action is catalysed, the health system – specifically the health ministry and public health agencies – has important roles to play in this process: convening and fostering dialogue, engagement and participation; mobilizing other sectors; contributing synthesized actionable evidence; mediating between interests; fostering consensus on priorities; monitoring the impact of actions. As well as technical know-how, a new set of skills is required. Taking the example of Turkey, as already described, dealing with the complexity of multiple policy cycles going beyond the health system, it should be noted that

the fact that some policies to improve health shifted within government and into other sectors did not diminish the role of the health system; on the contrary, the health ministry and public health agency had an important – but changed – role in catalysing action, creating dialogue, marshalling evidence, producing policy documents and creating and reporting against monitoring frameworks, among others. As this way of working is becoming more extensive, it is important to develop hubs of competencies for the skills needed for intersectoral action in ministries of health and public health agencies (see Chapter 7).

## Good governance principles should be applied to guide the relationship between the government and non-State actors

The relationship between government and the private sector, such as businesses, pharmaceutical companies and private health providers, requires particular attention. It is not a binary relationship (partnership or enmity), but is much more nuanced. The private sector is increasingly involved in public health initiatives at the local, national and global levels, which poses both challenges and opportunities for intersectoral governance, requiring sound management.

The private sector has spread its influence, both for good (for example through nutrition initiatives for salt reduction through food reformulation, or through the development of drugs and technology) and for ill from the perspective of public health (Kickbusch, Allen & Franz, 2014; Hernández-Aguado & Chilet-Rosell, 2018). The food and beverage companies influence research away from the ill-effects of their products and towards areas that can be blamed on behaviour. Drugs and technology companies bribe top officials to align their actions with company interests. Tobacco companies develop multimillion dollar campaigns to convince youngsters to take up smoking, using budgets that the public sector cannot counter. Governing this relationship is therefore a critically important aspect of governance for better NCD outcomes.

Building on the value-based approach of Health 2020, this means ensuring good governance of the commercial determinants of health.

For these purposes, a working definition of “commercial determinants” has been proposed as follows:

A commercial determinant of health refers to a good or a service where there is an inherent tension between the commercial and the public health objective: where the public health objective is to rationalize the use of the good or service, and the commercial objective is to increase the use or consumption of the good or service; or conversely, where the public health objective is to increase the accessibility or affordability of a good or service, and the commercial objective is to reduce the accessibility and affordability of the good or service. This tension can be seen in a number of the determinants of noncommunicable diseases, for example, tobacco, alcohol and certain food products, but also more broadly in the health system, such as in relation to pharmaceuticals and health services. (Kosinska & Östlin, 2016).

Safeguards must be put in place when building a relationship with the private sector, making sure that public health remains the main purpose of the relationship. This in turn requires that the roles and responsibilities of the public sector are not weakened, and that there is awareness of any conflict of interest (Buse, Tanaka & Hawkes, 2017; Johnston & Finegood, 2015; Marks, 2017). Private corporations are



## Box 6.1 Commercial determinants of health

**“A commercial determinant of health refers to a good or a service where there is an inherent tension between the commercial and the public health objective: where the public health objective is to rationalize the use of the good or service, and the commercial objective is to increase the use or consumption of the good or service; or conversely, where the public health objective is to increase the accessibility or affordability of a good or service, and the commercial objective is to reduce the accessibility and affordability of the good or service. This tension can be seen in a number of the determinants of noncommunicable diseases, for example, tobacco, alcohol and certain food products, but also more broadly in the health system, such as in relation to pharmaceuticals and health services.”**

(Kosinska & Östlin, 2016).

sensitive to the loss of market share and to taking any actions that might adversely affect their commercial interests. “The default relationship between government agencies and industry actors should be at arm’s length” (Marks, 2017).

Buse, Tanaka & Hawkes (2017) reviewed three models of private sector involvement in governing the determinants of NCDs: self-regulation by industry, regulation through partnership (hybrid regulation) and regulation of the private sector by the public sector. Of these models, the most effective, from the perspective of safeguarding and improving the health of the population, is public regulation (Ottersen et al., 2014). There is still much scepticism about self-regulation as corporations remain accountable to shareholders, thereby distorting their decision-making and leading them, on occasion, to operate against the interests of the public’s health. Some industries make products that lead to poor NCD outcomes, and their involvement in regulation can sometimes be used as a delaying tactic to prevent full regulation. The formal rules of any interaction need to be explicit and aligned with the mission and goals of public health and must have measurable and identifiable health benefits. At times, commercial actors could use the private-public interactions to acquire political and market intelligence in an attempt to gain political influence. It is therefore critical that public health interests navigate carefully and are politically sensitive.

It is expected that regulation through partnership will persist, since the private sector influence on the commercial determinants of health can also support solutions to complex health problems. Criteria to safeguard people’s health through public-private partnerships have been proposed in the literature (Buse, Tanaka & Hawkes, 2017; Johnston & Finegood, 2015; McQueen, 2012). These include appropriate and transparent setting of SMART targets with clear accountability frameworks. Risk management approaches also need to be addressed, in particular the management of conflicts of interest. These approaches tend to vary. For example, the EPODE International Network, which seeks to support childhood obesity prevention, has established a public-private partnership forum. In doing so, the Network committed its partners to non-interference in programme content, to not promoting their products using EPODE, and to not using their own branding on EPODE materials. This example, among others, is described by Johnston & Finegood (2015) in a study on cross-sectoral partnerships and public health. Independent monitoring of compliance and impact, and independent and transparent reporting with remedial action to ensure accountability, have also been noted to be critical success factors for private sector partnerships (Buse, Tanaka & Hawkes, 2017; Johnston & Finegood, 2015; McQueen, 2012).



One aspect of collaboration that has not yet been explored is the absence of a relationship altogether. Under such circumstances, there is no governance arrangement for cooperation, but rather there is active resistance by the industry or other sectors, and no willingness to join any of the collaborative planning processes, whether linear, nuanced or complex, that have been outlined in this chapter. There could be active, pervasive and highly successful lobbying of governments by the for-profit private sector. If there is to be more transparency and accountability between government and the private sector, lobbying needs to become more transparent (Leppo, 2013). There is sufficient evidence that this type of negative or antagonistic action exists where the industry has campaigned to stop or delay policy actions related to tobacco, alcohol and nutrition (McQueen, 2012; Leppo, 2013; Ulucanlar, Fooks & Gilmore, 2016; Jiang & Ling, 2013). Some may suggest that this could be deemed intersectoral action against health. There is less information on how to address these problems as a policymaker beyond ensuring political leadership and strong united government will to prioritize public health.

A number of experiences at national and global levels, however, provide examples of successful approaches against an industry that was resistant and delaying the process. For example, the Russian Federation worked in response to the industry with health-based nongovernmental organizations which were a valuable resource that catalysed and supported NCD action on tobacco. The Russian Anti-Tobacco Advocacy Coalition supported the work of the Government against the industry. The Coalition garnered evidence through advocacy, mobilization and consensus-building among civil society organizations, and acted as a watchdog. A case study of this joint civil society action concluded that the process had contributed to the decline in smoking rates (Greer et al., 2017). In Slovenia, the advocacy skills and media access of the Slovenian Coalition for Public Health, Environment and Tobacco Control and the No-Excuse youth nongovernmental organization, were key contributors to the adoption of a new tobacco law in 2017, despite strong lobbying from the industry (Greer et al., 2017).

In France, science and research have been used to ensure effective options for nutritional labelling through the Nutriscore (a five-colour nutrition label), which opposed a competing design presented by the industry. In recent years, collaboration has been instituted between researchers, food producers, retailers, industry and public health officials in France to develop and design a product mark in the style of energy consumption scores. Various product marks, proposed by several different groups, were tested in a study of 3 million purchases involving just under 2 million labelled products. The industry funded the research and proposed a competing design to the one presented by the Ministry of Health. The results are impressive, with identification of a clear preference for the Nutriscore, the label developed by a public health research team (Julia et al., 2017). This example shows how a government can engage with the private sector and intervene effectively by conducting a study and thereby using research rather than regulation to foster industry cooperation.

A global legally binding agreement can be effective in framing and protecting against potential risks. A unique example of this for NCDs is the WHO Framework Convention on Tobacco Control (WHO FCTC) (WHO, 2005). The WHO FCTC presents a success story of the health sector being able to stand strong against the consumption and exposure of a commercial product causing ill-health. Although a global mechanism, the FCTC has governance implications at the national and subnational levels in relation to individual articles. As a governance mechanism, it provides a clear area of action for Member States in the European Region, three of which have yet to ratify it. Furthermore, progress on implementation needs to be stepped up if global NCD targets are to be met (WHO Regional Office for Europe, 2017b). At the global level, other mechanisms are in place, such as the United Nations Interagency Task Force on the prevention and control of NCDs, established by the United Nations Secretary-General in June 2013 and placed under WHO's leadership (WHO, 2017). The Task Force coordinates the activities of relevant United Nations entities and other intergovernmental bodies to support governments in fulfilling high-level commitments in response to NCDs.





## At the local level, **governance** across sectors and between levels of government **needs to be coherent**

The adoption of the 2030 Agenda for Sustainable Development in 2015 has created a new framework under which to align global, national and local goals and to take action on which governments can be held to account. The adoption of a goal and targets for cities has emphasized the importance of local leadership to advance the global development agenda, while linking to other goals that can have significant influence, including action on NCDs. It recognizes that local institutions, local economic actors and communities provide legitimacy for global and national development by grounding development choices in the will of the people, through participation and ownership, “Most critical objectives and challenges of the post-2015 development agenda will certainly depend on local action, community buy-in and local leadership well coordinated at and with all levels of governance...” (Helen Clark, UNDP Administrator. On the other hand, globalization requires more coordinated action from all sectors to work on health-related issues, as well as greater support through national policies and strong and efficient coordination with policies at the local level.

Competencies at the local level differ both within and between countries. In some cases, cities may not have the competence for health care and may therefore need to focus more on work across sectors to influence the determinants of health. In this regard, there has been good experience in engaging multiple stakeholders to effectively tackle the determinants of NCDs (WHO Regional Office for Europe 2014b; 2016c). In Italy, the “Breathe by the sea” initiative was implemented on the littoral coast of Bibione to address the challenge of smoking and tobacco smoke exposure in public settings. It successfully used a whole-of-government and whole-of-society approach and involved communities in a participatory process and action. Likewise, Community Action for Health in Kyrgyzstan is a health promotion programme built on direct citizen participation. Volunteer village health committees have worked with primary health care services to identify health-related priorities and implement health actions, one of the most effective of which has focused on hypertension and has directly con-

tributed to improvements in early detection and subsequent monitoring of people with high blood pressure.

Intersectoral initiatives at the municipal and regional levels could provide good inspiration to learn from, while being aware of the contextual challenges related to the transferability and scalability of experiences. The social determinants of NCDs can be effectively tackled at the local level. Local governments often have the policy and legislative tools needed to address key issues affecting NCD risk and the accountability lines are more direct between actors, and between the population and policy-makers. At the local level, there is greater proximity between stakeholders, which enhances governance for NCD outcomes across sectors. An examination of municipal-level efforts to address the social determinants of health inequalities has shown that equity in health principles was included more widely in the policies of other sectors than at the national level (Ritsatakis, Ostergren & Webster, 2015).

At the municipal level, intersectoral collaboration for preventing NCDs has been reported to function both as a tool to drive and steer action and as a means of achieving specific outcomes. An analysis of the role of the WHO European Healthy Cities Network reported on the interdependency of the national and local levels, for example in relation to tobacco control, stressing that cities were crucial for the successful implementation and enforcement of policies, for leading the way, for challenging the status quo or advocating for stronger action, for developing innovations, and for piloting approaches (Farrington, Faskunger & Mackiewicz, 2015). Local governments are not only embracing intersectoral work through creating and maintaining appropriate governance mechanisms, but also through by deploying resources to deal with NCDs using a value-based approach (de Leeuw, 2013). The Healthy Cities Network builds on the opportunities for cities and towns to engage in collaborative leadership across levels of government to gain health and improve health equity (WHO Regional Office for Europe, 2013b).

Although several determinants of health, such as transportation and urban planning, are centred in cities, they also depend on regional and national bodies. Planning NCD interventions at the municipal level should include not only other sectors across the city, but also, where applicable, other levels of government, for interventions such as health-care delivery, training and education of key professionals and regulating marketing and advertising. To increase physical activity through urban planning, for example, overarching policies and large-scale interventions are needed, such as developing planning documents with guidelines, while small-scale and highly detailed interventions are also needed, such as taking measures to facilitate walking and cycling (WHO Regional Office for Europe & European Commission, 2017).

A key governance challenge is to ensure that resources, capacity, knowledge and skills are available at the local level. An example of good governance related to this can be found in Croatia, where over 13 cities, linked through the Croatian Healthy Cities network, have been working for over 25 years to increase the capacity of cities and counties to develop intersectoral policies and to manage their implementation. The network developed a variety of tools and training programmes, which have influenced the reorientation of public health at the national, county and municipal levels, ensuring that resources are directed at local priorities. A training programme (Health Plan) was developed to strengthen management and public health capacity at the county level. It incorporates a multidisciplinary and intersectoral approach, active participation of the community and use of qualitative analysis. It is a model of good practice for cooperation between the academic community and local and national governments. The Croatian Healthy Cities network has also reached beyond Croatia's national borders by participating in a variety of academic initiatives for south-eastern Europe (Tello et al., 2015).

Decentralized, inclusive cooperation can harness the potential of local and regional partnerships and enhance the health, economic and development opportunities. In this regard, a Standing Conference of Towns and Municipalities (2004) was established in Serbia to promote the interests of local authorities and serve as a key point in the flow of information-sharing and capacity-building, thus offering a platform for the development of capacities and intersectoral cooperation. The Conference, which can be considered a soft convening governance mechanism, works with the health sector through the local health council to enhance access to services, improvement of quality of life and advance NCD-related issues (Farrington et al., in press 2017).

In summary, horizontal integration across sectors and vertical integration across levels are the key to fully addressing the complexity and scope of NCDs, and are facilitated by the flow of information between

the local, regional and national levels. We recommend strong support for local and regional intersectoral initiatives; they present an opportunity for partnering with civil society, private and non-profit sectors, and with the people. Implementation at the population level tends to be almost exclusively local or regional, although governance arrangements differ from country to country. Integrated local governance fosters synergies between actors and resources, knowledge pooling and sharing of experiences. Subnational and regional governments serve as a bridge between central governments and communities, and can play a significant role in fostering the involvement of civil society, academia, community-based organizations and private enterprises. Governance arrangements between levels matter a lot for effectiveness, impact, transferability and scalability. In contrast to national government, which often deals with system-wide policies, local governments interact daily and intensively with citizens.

## Conclusion

A comprehensive NCD policy approach to prevention and control is likely to be complex, encompassing a multitude of policies and policy cycles both across health and development and beyond health, involving specific risk factors and diseases, as well as health system strengthening, among others. A participatory governance approach that engages relevant stakeholders throughout the policy cycle(s) and holds them to account for actions can be challenging. Some tools and mechanisms do, however, exist to support certain aspects.

Governance must be integrated, intersectoral and value-based. It must facilitate the engagement of stakeholders across the policy cycle, and then manage the cycle to show the results of the policy package with clear accountability. Governing for NCD outcomes needs to be considered in the light of the specific context and governance realities of each country, in terms of both competencies and capacities in and beyond the health sector, as well as taking into account context-specific challenges and opportunities. Different approaches, mechanisms and structures can serve as a catalyst for intersectoral governance, and for making governing across sectors sustainable. Political sensitivity is needed, however, regarding the relationship between the government and the private sector. Good examples of governance at local level serve as an example, when adapted to take into account contextual specificities, challenges and opportunities. It is clear that despite challenges and differences, governance must be a key consideration for policy-makers when planning how to address NCDs. For key messages and policy responses, see Table 6.2.

Table 6.2. Overview of key messages and policy responses

Key messages	Policy responses
<p><b>Stakeholders need to be engaged throughout the policy cycle to ensure greater commitment and accountability for outcomes</b></p>	<ul style="list-style-type: none"> <li>■ Work towards policy coherence and alignment across NCD-related policy documents and their policy cycles. Ensure outcome orientation in goal-setting, including equity dimensions, establish and resource priorities, identify and design complementary policies, resolve conflicts between policies and make overlaps systematic and reinforcing.</li> <li>■ Establish a governance mechanism for engaging stakeholders throughout the different stages of the policy cycle.</li> <li>■ Complete the full policy cycle with the engagement of stakeholders as appropriate, and in particular ensure sufficient time and capacity for problem definition and root cause diagnostics. This is particularly important for the complex web of determinants for NCDs.</li> <li>■ Establish clear accountability frameworks, also capturing the roles and responsibilities of a variety of partners.</li> </ul>
<p><b>Moving towards more stable governance arrangements strengthens sustainability of intersectoral action for NCDs</b></p>	<ul style="list-style-type: none"> <li>■ Create the preconditions to facilitate intersectoral governance through the use of information, evidence and knowledge tools.</li> <li>■ Ensure that the production and use of information, evidence and knowledge tools is resourced, and that there is sufficient capacity and know-how to carry it out in a sustained manner.</li> <li>■ Institutionalize these strategies to build political support and pressure using information, evidence and knowledge tools, as well as capitalizing on political leadership.</li> </ul>
<p><b>Good governance principles should be applied to guide the relationship between the government and non-State actors</b></p>	<ul style="list-style-type: none"> <li>■ Facilitate good governance of the relationship between government and the private sector, building on the values-based approach of Health 2020, through good governance of the commercial determinants of health.</li> <li>■ Ensure that the rules of any formal interaction with the private sector are explicit, aligned with the mission and goals of public health, and have measurable and identifiable health benefits.</li> </ul>
<p><b>At the local level, governance across sectors and between levels of government needs to be coherent</b></p>	<ul style="list-style-type: none"> <li>■ Include local and regional government levels at all stages in the policy cycle, as their proximity to key stakeholders provides a great opportunity for more effective policy design and locally appropriate solutions within national frameworks.</li> <li>■ Support local and regional initiatives to tackle the determinants of NCDs, including intersectoral initiatives, with resources, capacity development and political support.</li> </ul>

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# 7

## **Strengthening public health services** to tackle NCDs

**John O'Dowd, Anna Cichowska Myrup,  
Martin Kraye von Krauss, Bernd Rechel and Tit Albrecht**

# Agenda for action

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**Strengthen public health intelligence capacity** in order to effectively assess population health needs and act on NCDs

1

2

**“Walk the talk” and prioritize investment in disease prevention and health promotion,** so that public health services can mobilize the new human resources required to tackle NCDs

Public health services **must focus on health equity** across all essential functions

3

4

**Coordination across public health and primary care services** is key for effective health promotion and early detection of NCDs, as are **community services and community engagement**

## Motivation

As set out in Chapter 4, the impact of NCDs on premature mortality and the quality of life, and their cost to societies and individuals, make them the public health challenge of our time. While progress is being made in terms of premature mortality related to NCDs, the rate of progress is heterogeneous, and some parts of the WHO European Region are lagging behind. Further challenges include increasing levels of disability in those living with NCDs and rising rates of multimorbidity (two or more chronic conditions). Other contributors have also pointed out that much more still needs to be done to deliver WHO's core interventions for NCDs: there remain significant gaps in Member States' ability to deploy these interventions. Chapter 5 has noted that significant factors include a mismatch between the functions of public health services (see Box 7.1) and overall public health goals at country level; limited capacity for health promotion, disease prevention and intersectoral working; limited coordination between public health and primary care services; and limited coordination between national public health agencies and actors at regional and municipal levels.

More must be done to strengthen essential public health services across government and within the health sector, and to facilitate work across sectors for the promotion of health, the primary prevention of disease and the prevention of further complications for those with established NCDs. This chapter focuses on solutions, exploring the challenges faced by public health services, and seeks to make recommendations concerning the structures, processes and outcomes that Member States should consider in order to further strengthen the role of public health services in the response to NCDs.

## Box 7.1 What are public health services?

Across the WHO European Region, there is a lack of consensus about the scope and definition of public health services (Kaiser & Mackenbach, 2008). The European health policy framework and strategy, Health 2020, (WHO Regional Office for Europe, 2013) and the European action plan for strengthening public health capacities and services (WHO Regional Office for Europe, 2012a) define “public health” using the definition first put forward by Winslow in 1920, later adapted by Acheson in 1988, namely “the science and art of preventing disease, prolonging life, and promoting health through the organized efforts of society” (Department of Health, 1988).

The “organized efforts” referred to in the definition are carried out by actors in government and society at large. Within government, numerous sectors are involved, including education, social services, agriculture, transportation and trade. Typically, a number of public health services are delivered from within the health sector, and one key challenge is to achieve horizontal alignment and integration of clinical, public health and population health services. The European action plan sets out 10 essential public health operations (EPHOs), which illustrate the essential functions that are required to deliver an effective public health service at country level. Of particular interest to the issue of NCDs are the public health intelligence services (EPHOs 1 and 2) that monitor NCDs, risk factors and determinants. In addition, services for health promotion (EPHO 4) and disease prevention (EPHO 5) are important in the NCD agenda, both for individuals and for populations.

## Strengthen public health intelligence capacity in order to effectively assess population health needs and act on NCDs



**Key Message**

In the WHO European Region, public health services have historically had a strong focus on sanitary reforms, epidemiology and communicable disease control. Since the 1970s, public health has increasingly embraced a new paradigm, which extends the scope from communicable diseases to embrace health promotion and disease prevention, using intersectoral action to facilitate change in the NCD agenda. The historical focus on sanitary epidemiology was particularly strong in the Soviet Union. This “sanepid” model was well suited to the early 20th-century public health of communicable disease control and environmental health (WHO Regional Office for Europe, 2009). However, as we have clearly seen earlier in this work, the latter part of the 20th century and the early 21st century have seen the rise of NCDs and inequity as the most significant problems facing Member States in terms of the health of their populations.

While progress has been made across the Region in reorienting public health services to focus on NCDs in addition to communicable diseases and environmental health, challenges are still being faced, particularly, but not exclusively, by countries whose public health services were influenced by the “sanepid” model. The picture is varied, with some countries seeing little public health activity focused on NCDs, and others making considerable progress while continuing to take action on historical threats such as communicable diseases (Maier & Martin-Moreno, 2011).

As set out in Chapter 5, a major barrier to effective action on NCDs is the absence of regular epidemiological assessment and surveillance of NCDs and their underlying risk factors (WHO Regional Office for Europe, 2012a). Such surveillance and monitoring is a prerequisite to effective action on NCDs (Verschuuren et al., 2014). The specific intelligence data sets required to drive action on NCDs are clearly set out in the WHO Global Monitoring Framework for NCDs (WHO, 2014a) and are summed up succinctly in Box 7.2.

While public health actions can be delivered in diverse ways across the WHO European Region, there is a need for consistency in the provision of the essential functions that underpin effective action against NCDs. In this context, the Essential Public Health Operations (EPHOs), developed and refined through consensus and collaboration since 1998, are central to the European action plan for strengthening public health capacities and services (WHO Regional Office for Europe, 2012a). Public health intelligence consists of two related EPHOs: the surveillance of population health and wellbeing (EPHO 1), and the monitoring and response to health hazards (and risk factors) and emergencies (EPHO 2). Taken together, these intelligence functions underpin effective national and local public health action, by providing information for health needs assessment and health impact assessment that can be used to clarify threats, behaviours and their impacts on health equity (the distribution of health status across different groups within the population), in order to prioritize and formulate policy directions. This information is critical for driving Member States’ actions in terms of health promotion and

### Box 7.2 Intelligence data sets for NCDs

What is needed is a willingness among policy-makers to invest in “intelligence”, a system in which knowledge generation, synthesis and implementation are crucially integrated in the health-care system, in order to enable systematic and comprehensive assessment of population health needs and to inform strategic responses to the rising burden of chronic illness in Europe and elsewhere.

Source: Pomerleau, Knai & Nolte (2008) .

disease prevention strategies, as well as for the evaluation of actions throughout the policy cycle. The equity dimension of NCD intelligence and surveillance is vitally important, since different groups are known to be at greater risk of NCDs and can have greater amenable mortality from them, owing to differences in their access to and use of health promotion information and health services.

Across the Region, surveillance is often fragmented and lacks overarching governance and the advantages that come from institutional stewardship of surveys and data sets. In this context, we define stewardship as the oversight and actions that extend beyond the traditional governance of resources and include strategic planning for their sustainability and use, in order to achieve improvements in public health. In some Member States, especially the countries of the former Soviet Union, there are significant issues with the completeness of vital statistics and surveillance data, owing to the fragmentation of public health information systems or non-reporting by private providers (Maier & Martin-Moreno, 2011).

The organizational arrangements for public health services are also extremely diverse across the Region, reflecting different historical understandings of the scope and definition of public health services (WHO Regional Office for Europe, 2012b). Institutional stewardship can generate enhanced value over time, by creating networks to improve the quality of data collection, providing time trends for intelligence and evaluating the impact of policy on health. In general, surveillance systems using routine data and ad hoc information such as that obtained from surveys require strong governance. The skills and capacity required to steward surveillance systems are often best centralized within a public health institution at national level. The advantage of such institutional oversight is that the arrangement can provide assurances concerning leadership, responsibility and accountability for critical functions (Bloland et al., 2012). Nevertheless, the institution will require good vertical governance with regions and localities, in order to assure the quality of routinely available data and to ensure that the intelligence reports created are disseminated and acted on at all levels. An example of NCD surveillance strengthening in the Republic of Moldova is given in Box 7.3.

While progress has been made in orienting public health services towards improved NCD intelligence and surveillance, significant challenges remain. Member States should therefore assess and strengthen their public health intelligence capacity to tackle NCDs through the following policy actions.

## Republic of Moldova

### Box 7.3 Strengthening public health surveillance and monitoring

In common with other eastern European countries, the Republic of Moldova experienced significant health challenges following the collapse of the Soviet Union. Reductions in life expectancy were linked to levels of poverty and rising rates of NCDs. The public health service had a traditional “sanepid” orientation, but the Government has embarked on a radical reform of the service in order to create one that focuses on NCD surveillance, in addition to communicable disease surveillance, in order to guide policy on health promotion and disease prevention. Following the adoption of legislation in 2009 and 2010, a network of public health centres was established, led by the National Centre for Public Health and the State Surveillance of Public Health Service. This reform integrated 37 fragmented public health institutions. Working groups have reformed the surveillance system by prioritizing 13 conditions that have an impact on public health. The National Centre for Public Health coordinates periodic (but not regular) household and behavioural surveys.

*Source: Turcanu et al. (2012).*

- WHO's Global Monitoring Framework for NCDs (WHO, 2014a) should be used as a basis for mandatory and ongoing NCD and associated lifestyle risk factor surveillance and monitoring programmes at country level.
- Surveillance and intelligence systems on NCDs and risk factors should take account of equity dimensions such as age, gender, belief, orientation and socioeconomic status.
- Stewardship and accountability for NCD surveillance and monitoring should be centralized within a national public health institution.

## “Walk the talk and prioritize investment in disease prevention and health promotion, so that public health services can mobilize the new human resources required to tackle NCDs



Health promotion and disease prevention services are central to the effort to tackle NCDs and mitigate risk factors such as tobacco and alcohol consumption, unhealthy diets and lack of physical activity. Health promotion services include interventions targeting the behaviour of individuals (lifestyle counselling or social marketing, for instance), as well as those aimed at the broader determinants of health (such as measures against tobacco, fat and sugar taxes or food labelling). Disease prevention services include activities that enable the early detection of disease, such as screening programmes for different cancers, as well as maternal and child health programmes. Intrinsic to both health promotion and disease prevention services are efforts to address social determinants and health inequity, whether by increasing access (cultural mediation and interpretation services for minorities, or outreach services and mobile clinics for homeless people or sex workers), or through intersectoral action such as policies and plans on employment, housing, the environment, education and development. These services therefore play a key role in efforts to ensure that healthy lifestyles are accessible to all people, irrespective of their age, disability, marital status, gender, sexual orientation, religion, ethnicity or socioeconomic status.

At individual and population levels, delivering promotion and prevention services requires knowledge and competencies that are distinct from those typically required to address communicable diseases. Expertise in areas such as child and maternal health, healthy ageing, occupational health, nutrition, addiction, and violence and injury prevention becomes crucial, as do so-called soft skills such as intercultural competencies, counselling, collaboration and brokering partnerships. In this respect, one important regional feature is that much of the public health workforce currently in place in the countries that are members of the Commonwealth of Independent States (CIS) has been educated and employed to deliver hygienic and sanitary control services targeting communicable diseases. As such, a new cadre of

human resources must now be put in place, in many countries of the Region, to augment the current public health workforce.

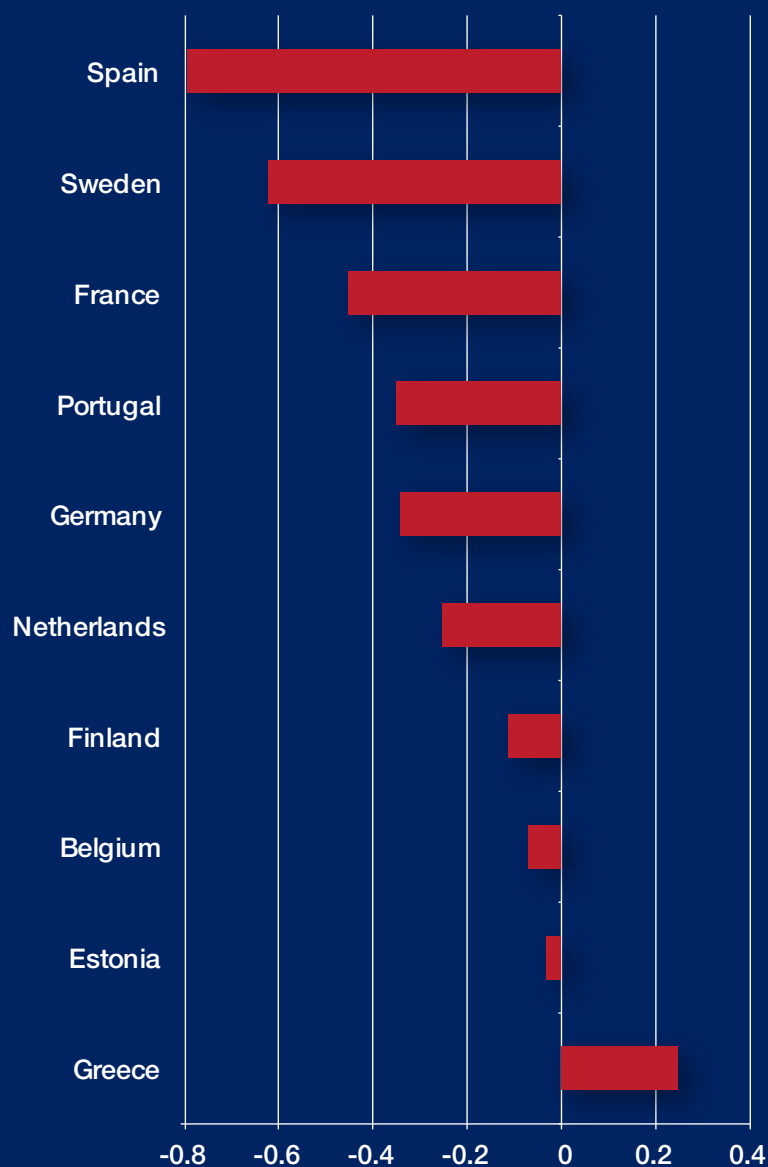
In order to secure the new human resources required to address the challenge of NCDs, governments will need to invest substantially more in health promotion and disease prevention services. In the years following the 2008 financial crisis, governments chose to cut health promotion and disease prevention services, while expenditure on other health services continued to grow, albeit at a slowed pace. In comparison to other areas of health expenditure, funding for public health has also been on the decline in EU Member States since 2009 (Figure 7.1).

Beyond financing, the regional trend to give lower priority to disease promotion and the prevention of NCDs is also apparent in the availability of educational programmes and the extent to which governments legislate for public health services.

An important barrier that governments in the Region will need to overcome in order to foster the new competencies required in the workforce is the relative lack of continuous professional development and modern educational programmes in public health in universities, especially in the CIS countries. Owing to the fact that until the 1990s public health services in a large part of the Region were organized following the “sanepid” model, the overarching priority in public health curricula there was the monitoring and control of communicable diseases. Since 1990, organizations such as the Association of Schools of Public Health in the European Region (ASPHER), the Open Society Institute and many other bilateral and international funding agencies have invested considerable efforts in modernizing public health education in these countries. In a review conducted in 2011, Ádany et al. noted that much progress has been made in introducing the concept



**Figure 7.1. Percentage point change in the financing of preventive care as a share of current health expenditure, selected countries, 2009–2014**



Source: Eurostat (2018), B. Rechel's calculations.

of “new public health” and establishing new schools and departments of public health in countries of eastern Europe and the Baltic States, but that progress has been much slower in the CIS countries. For example, the Kazakhstan School of Public Health, established in 1997, remains the only educational institution in the central Asian republics offering postgraduate training in public health.

The conclusions of Ádany et al. are consistent with the findings of a WHO review of public health services and capacities in the Region (WHO Regional Office for Europe, 2012c). On the basis of a survey of EU Member States (Aluttis et al., 2013) and the findings of 17 country EPHO self-assessments, the review concluded that:

- although university-level public health education has seen a rapid expansion in capacity over recent years, specialist public health training programmes that include multidisciplinary approaches and systems of continued professional development and accreditation exist mostly in western Europe;
- workforce capacity is the major limitation on public health services, and few countries have an overall public health workforce plan;
- only a small number of countries have a defined postgraduate specialist public health training programme, and most countries do not define core public health competencies for the (public) health workforce;
- leadership capacity in public health is insufficient; this is an issue both for political cross-sectoral leadership and for the public health workforce itself.

WHO has also explored the priority that Member States give to the EPHOs, by examining how well each is supported through mandate or legislation (WHO Regional Office for Europe, 2012d). The study identified a gap in support for EPHO 5 (disease prevention). This finding is consistent with the continued focus on the “sanepid” function in many CIS countries (Gotsadze et al., 2010) and with the finding of limited intersectoral prevention activity and limited disease prevention, both with regard to primary prevention of disease and for secondary prevention of complications of established NCDs, as mentioned earlier in this work.

Intersectoral action on health is not a new concept. It builds on the Declaration of Alma-Ata (WHO, 1978) and is developed in the Ottawa Charter for Health Promotion (WHO, 1986) and the 2008–2013 plan for the global strategy for the prevention and control of noncommunicable diseases (WHO, 2008). The 2010 Adelaide Statement on Health in All Policies (WHO, 2010) sets out the prerequisites for intersectoral action. These include clear leadership and mediation across interests; a systematic approach to take account of interactions across sectors;

and clear accountability, transparency and participatory processes. The Adelaide Statement also describes a series of tools and methodologies that support this way of working, including interdepartmental and interministerial committees, joined-up workforce planning and development, community engagement and participation, and legislative frameworks. An illustration of how this can work out at country level is offered by New Zealand, where intersectoral action has been mandated by successive governments to address challenges such as long-term unemployment, low educational attainment and low uptake of early years education (Scott & Boyd, 2017).

In Chapter 4, we presented some evidence that, in the context of preventive approaches, progress is being made in identifying people at greatest risk, such as those with risk factors for CVDs, but that, when identified, people with risk factors or diseases such as diabetes are not receiving effective interventions aimed at prevention. Public health services must provide leadership in disease prevention and health promotion activities across the health sector and other sectors, such as transportation and the environment, in order to support all actors in tackling NCDs. Based on the New Zealand experience, it is possible to enhance prevention and promotion activities within and across sectors by providing leadership and adopting a variety of approaches, such as interagency cooperation, policy development, setting targets and monitoring implementation, and the judicious use of incentives.

An example of public health services making the shift to prevention and promotion is provided by Slovenia, where strong leadership has been shown in restructuring services and establishing disease prevention programmes (Box 7.4).

There is a clear need for a paradigm shift and associated investment in health promotion and disease prevention for NCD control, and in particular in the development of human resources in this area. Member States should:

- invest significantly more resources in health promotion and disease prevention services;
- invest in continuous professional development programmes in order to enhance the competencies that all clinical staff require to deliver effective prevention and promotion services at the population level, and in particular the competencies needed to work across sectors to mobilize action on health inequity;
- revise the curriculum of graduate and postgraduate programmes for physicians, nurses and other relevant clinicians, in order to strengthen the development of competencies in prevention and promotion;
- align the curriculum of graduate and postgraduate public health

## Slovenia

### Box 7.4 Modernizing public health services to promote health and prevent disease

Since 2002, Slovenia has shown increased commitment to health promotion and NCD prevention, following the establishment of the Centre for Health Promotion within the National Institute for Public Health. This centre was instrumental in organizing training and education for nurses who head health education centres in primary health care centres (PHCCs). Training and education are delivered through a network of regional public health institutes, which link to PHCCs and support staff and the organization of health promotion workshops.

In addition, a programme for the early detection and management of CVDs has been established. This programme focuses on health promotion approaches across the population, in order to reduce risk factors such as smoking, poor diet and the lack of physical activity, as well as enhanced care for those with established disease in order to minimize their risks of disease progression. People with a diagnosed condition or risk factors are referred to a health education centre, where they can attend workshops addressing their health needs. Basic workshops are intended for people at risk of developing disease, while extended workshops are organized for those who have been diagnosed with a disease (e.g. hypertension), to support patient self-care and disease management.

*Source:* Djomba, Vrbovšek & Čuš (2014); Petek et al. (2012).

programmes with international standards, such as those promulgated by ASPHER and the Agency for Public Health Education Accreditation (APHEA);

- ensure effective workforce planning for public health professionals, taking into account specific public health policies on NCDs and the burden of disease;
- ensure the inclusion and integration of workforce planning for public health professionals within overall planning efforts for human resources for health, in view of the fact that public health is a signif-

icant contributor to overall health policies and the effectiveness of national health systems.

In addition to prevention and promotion activities, efforts must be made to tackle not only the immediate risk factors and behaviours but also the “causes of the causes”, such as poverty and gender. This issue is explored further below.



## Public health services **must focus on health equity** across all essential functions

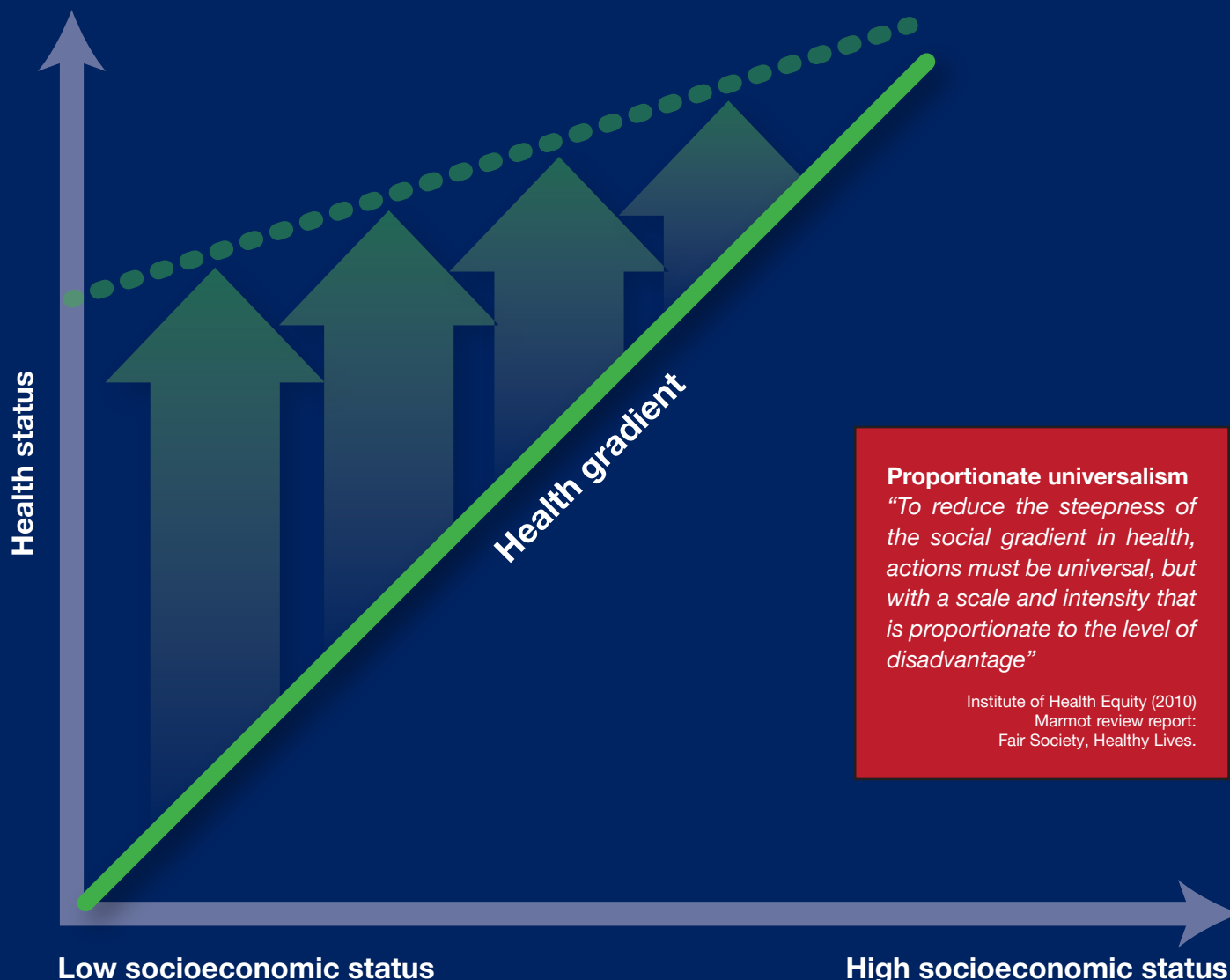
Health equity, the desire for equality of health across all subgroups of society, is a central goal of Health 2020, and socioeconomic deprivation in particular is strongly linked to increased levels of NCDs. There is also clear evidence of earlier onset of NCDs and of multiple NCDs, or multimorbidity, in groups affected by socioeconomic deprivation (Barnett et al., 2012). The barriers to NCD control vary by socioeconomic deprivation, gender and age. This results in marked differences in life expectancy and healthy life expectancy across societies. Any approach that tackles NCDs must be tailored to account for inequity, as generalized approaches to health and social care can widen existing inequities.

Health inequity has proven remarkably resistant to public health action, despite attempts to focus on preventive care and upstream intersectoral action to address the “causes of the causes” of inequity. One of the reasons for this resistance is an over-reliance on targeting vulnerable populations as a strategy for reducing inequity. The Marmot review of health inequalities in England (Marmot et al., 2010) has suggested that targeting fails to reduce inequity and proposes that proportionate universalism provides a more secure approach to tackling health inequity (see Figure 7.2). The report states (p. 15) that:

**... focusing solely on the most disadvantaged will not reduce health inequalities sufficiently. To reduce the steepness of the social gradient in health, actions must be universal, but with a scale and intensity that is proportionate to the level of disadvantage. This is called proportionate universalism.**

This approach fits well with Sustainable Development Goal 3.8 on universal health coverage (United Nations General Assembly, 2015). What is needed is a broader approach that aims to move away from narrow, vertically targeted programmes focusing on individual diseases or population groups and instead considers health in a more holistic, multisectoral manner. Such approaches would allow health needs to be addressed in an increasingly proportionate manner: matching the scale and intensity to the levels of need. The implications of proportionate universalism for NCDs are significant. The approach requires enhanced skills and refined programmes of intervention that take account of groups within the population, focusing on each group to identify and explicitly address the barriers and levers for lifestyle change such as culture, gender, poverty, literacy and education. This approach requires clinical and public health professionals to be equipped with more sophisticated knowledge, skills and competen-

Figure 7.2. Improving equity in public health action through proportionate universalism



**Examples of applications of proportionate universalism to public health action for NCDs:**

- routinely track tobacco, alcohol and nutrition behaviour by key socioeconomic groups;
- apply population risk stratification tools incorporating socioeconomic variables to tailor health interventions and resource allocation according to needs;
- introduce comprehensive tobacco control policies and prioritize smoking cessation workplace interventions in low-income and less secure areas of employment including heavily subsidized or free nicotine replacement therapy and counselling;
- in countries with large gender gaps in premature NCD mortality, invest in targeted outreach efforts to apply cardiometabolic risk assessment and in proactive condition management.

cies. Prevention programmes would also need to match this level of sophistication by analysing prevention needs in a much more granular manner, taking account of intelligence and data on inequity, as well as evidence concerning the barriers and levers for change, and explicitly linking this information to prevention approaches for each group through the actions of different sectors and actors.

An example is given below (Box 7.5) of how public health services can work with health-care providers to support such proportionate universalism. Public health services have a key role to play in the surveillance of health needs and in the creation of multisectoral approaches that can address health inequity in an effective way. This is especially important in the field of NCDs, where risk factor clustering, multimorbidity, poor access to services and limited engagement with health improvement programmes are strongly associated with socio-economic disadvantage. Spain has implemented a chronic disease stratification programme that combines strong surveillance and intelligence methods (consistent with Message 1), using population-level data on risk factors and diseases obtained from records of health-care delivery and utilization, with local approaches to enhance health-care activity in support of prevention and promotion for groups at higher risk. This is an example of using intelligence resources to align the delivery of preventive services with the health needs of the population in a proportionate manner, in order to support health equity.

This example demonstrates how equity-sensitive NCD surveillance can form a basis for more granular segmentation of health promotion and disease prevention activity, with approaches that are proportionate to the needs of each subgroup. For each group, the knowledge of barriers and levers for prevention can be drawn on, and shared outcomes for prevention can be agreed for the service sector (education, leisure/sport, health, etc.), such as access to exercise programmes for those with cardiovascular risks or diseases. The approach provides opportunities for further development, including the linkage of data from multiple sources in order to improve our understanding of groups and individuals. Furthermore, training for practitioners at community level can support knowledge, skills and competencies for behaviour change that also take account of the cultural, group and individual factors which promote health. Such a proportionate universalism approach therefore relies on a spectrum of actions, extending from the population through groups and communities to the level of person-centred care, which understands the individual's context, barriers and levers for change and negotiates an individualized, shared approach between the practitioner and the individual to promote health.

A further dimension to be considered in enhancing action on inequity is governance. A WHO report exploring governance for health equity

## Spain

### Box 7.5 Using intelligence to drive prevention for groups with NCDs

Population surveillance data on health problems, including NCDs, are used to stratify populations. This approach is being adopted to support actions in local areas and services, in order to drive disease prevention activities that reduce the complications of NCDs and, for those with risk factors, to intensify health promotion and primary prevention messages concerning physical activity, diet, smoking cessation and moderation of alcohol intake.

Data from a range of health information sources are collated with resource use, to allow stratification of individuals by clinical complexity and resource use. This results in 31 groups, ranging from those who are relatively healthy and rarely use health care to those with a high number of chronic diseases or cancer and high resource use. The guiding principle behind this approach, which links population data with local action, is person-centred care within a primary care prevention approach.

*Source: Monterde et al. (2016).*

has identified four failures that reduce the impact of actions to reduce inequity (WHO Regional Office for Europe, 2014): conceptual failure, or a problem with our understanding of the theory of change being applied; delivery chain failure, in which the desired actions do not reach the actors intended across all sectors; control strategy failure, or the inability to hold different stakeholders to account for outcomes; and public health system failure, in other words a failure to develop the competencies needed to govern for equitable health as a societal objective.

Given the need for transformational change in order to move from health-care systems to whole-of-society health systems, it is clear that public health services must ensure that the skills required for comprehensive health systems to address inequity are in place, supporting health in all policies (WHO, 2014b). The report on governance for equity suggests that an enhanced set of public health capacities are needed to tackle inequity in health. These have been described as the new domains of civic agency for public health, and they have been specifically developed to enhance intersectoral collaboration in the public health service (WHO Regional Office for Europe, 2014, p.45).

Scotland offers a further example (Box 7.6) of how public health services can respond to the challenge of reducing health inequity surrounding NCDs. The example demonstrates how whole-of-government collaboration, using multisectoral action and shared outcomes, can drive action in support of health equity.

Member States should strengthen public health services and enable them to take comprehensive approaches to health equity through the following policy initiatives:

- mandate public health services to steward comprehensive, intersectoral action on health equity in relation to NCDs, and allocate the resources required for them to do so;
- enhance training and encourage the use of systematic approaches such as health equity impact assessment in policy creation, evaluation and service planning;
- promote the use of proportionate universalism in health services to address NCDs;
- ensure that health promotion and disease prevention training programmes instil the competencies required to address health inequity;
- develop robust intersectoral governance for health equity by formalizing multistakeholder agreements on shared outcomes.

## Scotland, United Kingdom

### Box 7.6 A multisectoral approach to reducing inequities

In Scotland, as a result of concerns about inequity and lack of economic progress, a whole-of-government approach was developed to tackle inequity. This resulted in the development of the “Equally Well” framework. A task force was established to review evidence, model policy options and debate priorities for action. Methods used included expert panels, seminars and public consultations, to ensure the involvement of a wide range of stakeholders from national and local authorities, non-governmental organizations, academia, business and public service providers.

Implementation has been under way since 2007 and includes an accountability framework for action (such as the concordat with the Convention of Scottish Local Authorities), which is a formal agreement on priorities, responsibilities and the relationship between the national and local levels. A clear joint process for review and ongoing assessment has been established. One principal instrument used is “Single Outcome Agreements”. These are agreements between the Scottish Government and local-level planning units called community planning partnerships. They set out how the Scottish Government and local-level planning teams will work towards improving outcomes for local people in a way that reflects local circumstances and priorities.

Regular public reports and debates on progress are also undertaken, along with independent reviews, to inform policy adaptation over time. An important feature of this approach was the introduction of test sites, which allow policy to be tested in a structured way, with the aim of informing the scaling-up of effective actions to tackle critical problems.

Source: WHO Regional Office for Europe (2014).





## Coordination across public health and primary care services is key for effective health promotion and early detection of NCDs, as are **community services and community engagement**

Delivering more effective health promotion and disease prevention is dependent on action on the first three messages set out above: better surveillance (“information for action”), resources to strengthen skills (“investment”), and improved health equity across the population (“proportionate universalism”). The final message in this chapter considers the context within which prevention and promotion services are delivered. Effective prevention requires engaged communities and settings for action on NCDs. This entails stronger action across public health services, communities, municipalities and primary care services.

Primary health care is a central partner for public health services in actions designed to tackle the burden of NCDs and address health inequity. The scale of multimorbidity, the effectiveness of prevention strategies and the opportunities for community participation and multisectoral action all make it the ideal setting for preventing disease and promoting health. Primary health care plays a key role in the pursuit of universal health coverage. The Organisation for Economic Co-operation and Development (OECD) has recently found a positive correlation between life expectancy and the proportion of the population covered by health care, and also a positive association between life expectancy and the density of general practitioners per 1000 population (OECD, 2016). Further, there is clear evidence of the effectiveness of health care in extending life expectancy for some groups, through the observation that deaths from conditions amenable to health care fell at twice the rate of other causes of death in the period from 1997 to 2007 (Nolte & McKee, 2011). Despite this promise, across the WHO European Region there is a lack of coordination between public health services and primary health care. Notwithstanding some evidence of risk stratification for some groups, only limited action is being taken to ensure that prevention and promotion actions follow from this stratification activity (see Chapter 5). There are a number of potential barriers to effective health promotion and disease prevention within primary care. The main issues

explored below relate to governance and shared accountability for addressing population health through the primary care system.

At the level of public health services in the Region, there is evidence that governance for public health is robust within central institutions, which can influence policy, but that governance with regard to actions at the regional and local or municipal levels is fragmented, with little clarity about roles and responsibilities and a lack of accountability. In some countries within the Region, health promotion and disease prevention are separate systems that have no relationship with stand-alone primary health care. This often limits the effectiveness of action on NCDs, as issues identified in one system cannot be acted on effectively in the other, owing to a lack of integrated working and communication channels.

In some countries, such as Italy, Portugal and the United Kingdom (Scotland and Wales), public health services have an explicit focus on primary health care (McKee, Rechel & Busse, 2014). A significant advantage of this arrangement is the ability to create shared outcomes that address prevention and promotion, taking account of local contexts and equity. In the United Kingdom, where primary care staff contracts focus on preventive outcomes, such approaches may have reduced inequity (Roland & Guthrie, 2016). In Portugal, a robust attempt is being made to integrate public health services within the health system, so that activities related to intelligence, health promotion and disease prevention are carried out in order to tackle NCDs effectively (Box 7.7).

Stronger links need to be forged between public health services and primary care, in order to provide a setting for action on disease prevention and health promotion. However, intersectoral action to address inequity also requires the support of communities and other municipal resources. This approach tackles barriers to prevention through the actions of community members and allows community resources, such



## Portugal

### Box 7.7 Integrating public health and primary health care

Recent changes to the organization of the primary health care and public health services in Portugal have improved integrated working for local communities. Since 2008, family health units (FHUs), which comprise general practitioners and nurses (and others), have been grouped together with local public health units within geographical areas, in order to tackle health needs and prevention within local communities. These collections of FHUs and public health services are called “Agrupamentos de Centros de Saúde” (ACES). FHUs have responsibility for the delivery of curative care, rehabilitation, disease prevention and health promotion, for both communicable diseases and NCDs. Surveillance and health needs assessment are carried out by the public health units, who work closely with the FHUs and are linked with local municipalities, regional public health services and national public health functions, such as the health observatory in the National Institute of Health.

Source: Simões et al. (2017).

## Kyrgyzstan

### Box 7.8 Community action on hypertension

Community action for health in Kyrgyzstan is a collaboration between communities in villages and primary health care staff to promote the early detection and subsequent monitoring of people with hypertension. The country has high levels of cardiovascular mortality and morbidity, and hypertension was seen as a public health priority within primary care and by the community. The approach, built on a pilot scheme, has a strong theme of empowerment. Community health councils set their priorities, and volunteers work closely with primary care staff in the programme. Over the years, this approach has narrowed the inequity that was apparent in the higher levels of untreated hypertension in rural areas compared with urban areas, and it has led to better levels of patient concordance with treatment. The collaboration empowers communities and individuals and is carried out in a spirit of partnership.

Source: WHO Regional Office for Europe (2016).

as those found in the education and leisure sectors – health literacy resources and exercise facilities, for example – to support outcomes around the lifestyle changes required to improve health. Kyrgyzstan offers a further example (Box 7.8) of how community actions linked with services can overcome barriers to health promotion and disease prevention. This approach empowers communities and individuals to detect and treat hypertension and reduce health inequity.

In order to strengthen community health promotion and disease detection services in primary care, Member States should:

- establish a service dedicated to strengthening population-oriented planning and action with primary care;
- embed health promotion and disease prevention in primary care through the creation of shared outcome agreements for public health services and primary care;
- strengthen governance between national, regional and local public health services to deliver agreed population outcomes;
- promote community participation in health promotion and disease prevention at the municipal level.

## Conclusions

Tackling the burden of NCDs requires Member States to strengthen the role of public health services as part of their health reforms. Priorities across the WHO European Region should include a focus on strengthening public health intelligence and the surveillance of NCDs. This action is pivotal for effective policy around the NCD agenda. In addition, public health services must make a decisive shift to disease prevention and health promotion, in order to tackle NCDs in an inter-sectoral manner. Inequity is a key driver of NCDs, and an effective approach in this area will entail public health services focusing on health equity in all their activities. Concerted efforts will be required to make resources available to invest in core public health skills in support of these approaches, as part of a wider investment effort for public health service delivery. Finally, community health promotion and early disease detection are important priorities, which should be taken up hand in hand with the primary care sector, bringing treatment, prevention and promotion pathways together through empowered communities. For key messages and policy responses, see Table 7.1.

Table 7.1. Overview of key messages and policy responses

Key messages	Policy responses
<p><b>Strengthen public health intelligence capacity in order to effectively assess population health needs and act on NCDs</b></p>	<ul style="list-style-type: none"> <li>■ Use the WHO Global Monitoring Framework for NCDs as a basis for mandatory and on-going NCD and associated lifestyle risk factor surveillance and monitoring programmes at country level.</li> <li>■ Ensure that surveillance and intelligence systems on NCDs and risk factors take account of equality dimensions such as age, gender, belief, sexual orientation and socioeconomic status.</li> <li>■ Centralize stewardship and accountability for NCD surveillance and monitoring within a national public health institution.</li> </ul>
<p><b>“Walk the talk” and prioritize investment in prevention and promotion, such that the human resources required to tackle NCDs can be mobilized</b></p>	<ul style="list-style-type: none"> <li>■ Invest significantly more resources in health promotion and disease prevention services.</li> <li>■ Invest in continuous professional development programmes which enhance the specific competencies that public health staff require to deliver prevention and promotion services at the population level, in particular the competencies needed to work across sectors to mobilize action on health inequities.</li> <li>■ Revise the curriculum of graduate and postgraduate programmes for physicians, nurses and other relevant clinicians to strengthen the development of competencies in prevention and promotion.</li> <li>■ Align the curriculum of graduate and postgraduate public health programmes with international standards, such as those promulgated by ASPHER and APHEA.</li> <li>■ Ensure effective workforce planning for public health professionals, taking into account specific public health policies on NCDs and the burden of disease.</li> <li>■ Ensure the inclusion and integration of workforce planning for public health professionals within overall planning efforts for human resources for health, noting that public health is a significant contributor to overall health policies and the effectiveness of national health systems.</li> </ul>
<p><b>Public health services must focus on health equity across all essential functions</b></p>	<ul style="list-style-type: none"> <li>■ Mandate public health services to steward comprehensive, intersectoral action on health equity in relation to NCDs, and allocate the resources required for them to do so.</li> <li>■ Enhance training and encourage the use of systematic approaches such as health equity impact assessment in policy creation, evaluation and service planning.</li> <li>■ Promote the use of proportionate universalism in health services to address NCDs.</li> <li>■ Ensure that health promotion and disease prevention training programmes instil the competencies required to address health inequity.</li> <li>■ Develop robust intersectoral governance for health equity by formalizing multistakeholder agreements on shared outcomes.</li> </ul>
<p><b>Coordination across public health and primary care services is key for effective health promotion and early detection of NCDs, as are community services and community engagement</b></p>	<ul style="list-style-type: none"> <li>■ Establish a service dedicated to strengthening population-oriented planning and action with primary care.</li> <li>■ Embed health promotion and disease prevention in primary care through the creation of shared outcome agreements for public health services and primary care.</li> <li>■ Strengthen governance between national, regional and local public health services, to deliver agreed population outcomes.</li> <li>■ Promote community participation in health promotion and disease prevention at the municipal level.</li> </ul>

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Transforming individual  
health services: towards  
**integrated multidisciplinary**  
primary health care

Jan De Maeseneer, Liesbeth Borgermans, David Beran, Juan Tello

# Agenda for action

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**Effective regulatory instruments offer great potential to expand primary care further,** strengthening its resolute capacity with regard to NCDs and reducing reliance on specialist and hospital services



# Motivation

Primary health care is a powerful tool for scaling up core individual NCD interventions and can potentially be used to accelerate the reduction of premature mortality from NCDs. Chapter 5 has shown, however, that several barriers, including systemic “push” and “pull” factors, undermine primary care-based approaches to NCDs. These barriers include models of care that do not adequately address patients’ needs, narrow task profiles for managing complex and multimorbid patients, capacity constraints and real or perceived low resolute capacity of primary care practitioners to implement appropriate diagnostic and treatment strategies. Other important factors include purchasing and payment mechanisms, as well as cultural factors and expectations favouring hospital care.

The response to these challenges must cater for an environment dominated by multimorbidity (Salive, 2013; Stewart, Fortin et al., 2013) diverse communities, changed expectations in patients, and social

concerns. Ongoing chronic care management, community services, and social services must therefore be provided, in addition to episodic acute care. Complex medical and social problems can no longer be solved by actors working in isolation or by reductionist approaches with a limited set of interventions (Langins & Borgermans, 2015). People-centred and integrated health services delivery (WHO, 2016), firmly embedded in strong primary care systems, is therefore essential to improve the access, quality, relevance, continuity, and effectiveness of care (Van Loenen et al., 2016; Van den Berg, Van Loenen & Westert, 2016). Primary care is central to the economic sustainability of the health and social care system as a whole (WHO, 2016), and is crucial to overall health systems strengthening (WHO, 1978; WHO, 2008; WHO Regional Office for Europe, 2012; WHO Regional Office for Europe, 2015). Any call for action to develop integrated care inherently implies a call to strengthen primary health care.



## Moving towards larger multidisciplinary primary care teams affords an opportunity to scale up core NCD services as part of a comprehensive service offering

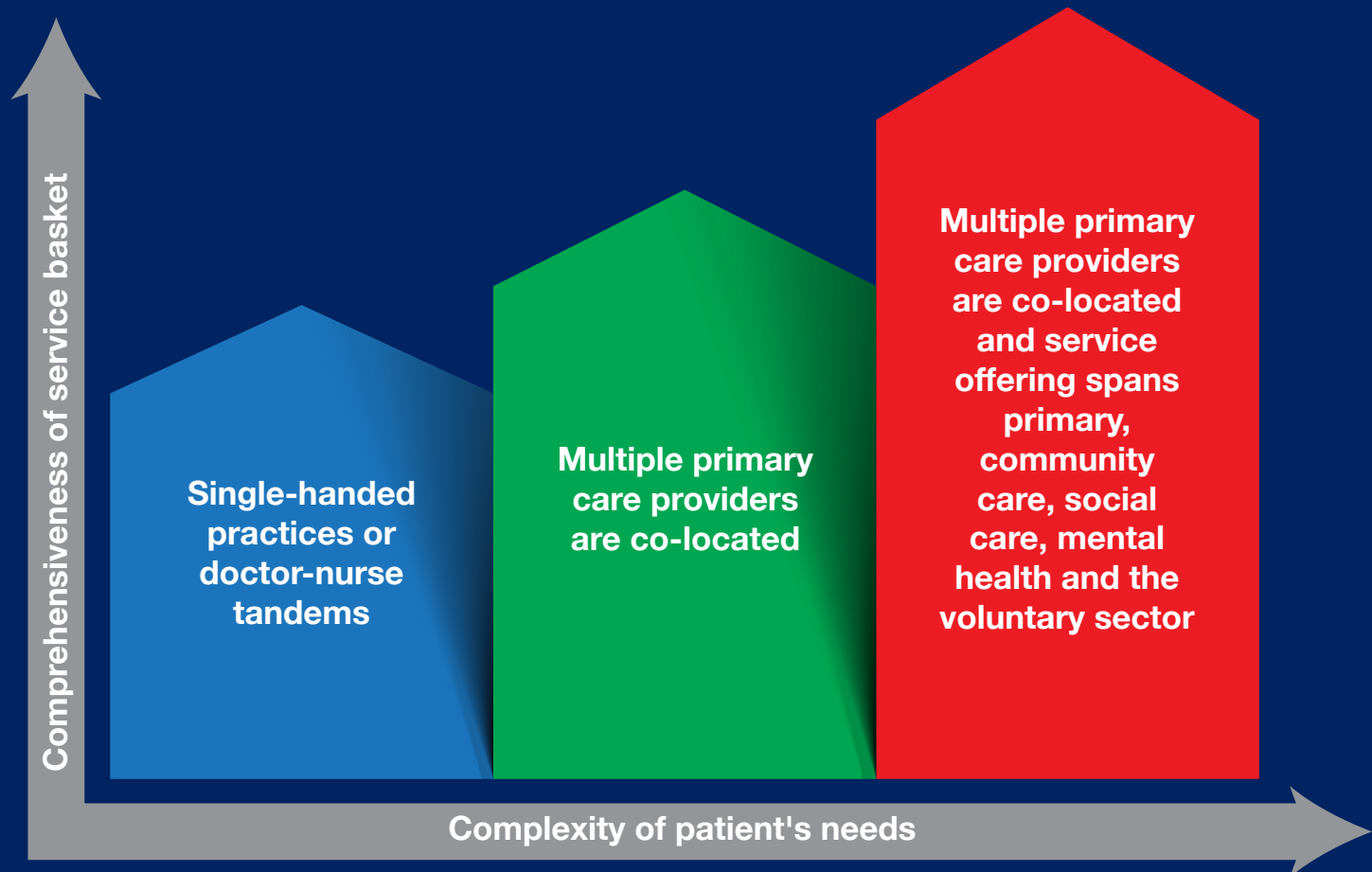
In this chapter we will put the spotlight on how multiprofile primary care teams contribute to improving NCD outcomes (see Figure 8.1), and on the policy responses required to strengthen the resolute capacity of primary care. For country case studies, see Boxes 8.1-8.5 below.

Multidisciplinary primary care teams have been set up in Belgium (Art, De Roo & De Maeseneer, 2007), Estonia (De Maeseneer, 2016), Finland (Kokko, 2009), France (Afrite et al., 2013), Italy (see Box 8.2), the Netherlands (Van Weel, Schers & Timmermans, 2012), Portugal (Santana, Szczygiel & Redondo, 2014), Spain (Hämel & Vössing, 2017), Sweden (Bäck & Calltorp, 2015) and the United Kingdom (Beacon, 2015) to overcome the limitations of single-handed practices

and doctor-nurse tandems. These limitations include episodic, reactive and fragmented care, strong orientation towards curative services, overuse and underuse of services, and limited attention to health promotion and prevention. This often leads to poor treatment outcomes, patient dissatisfaction and high costs to society.

Multidisciplinary primary care teams consist of various primary care entities, including primary health care practitioners, located in one place, which aim to proactively and adequately address the needs patients and communities present on a health-wellness continuum. They offer a comprehensive service including prevention and health promotion, curative services, patient education and self-management support, patient and family caregiver empowerment, psychological counselling, social services, referral and care coordination. Teams include fami-

Figure 8.1. Moving towards multiprofile teams



ly physicians,<sup>10</sup> registered nurses, psychologists, health promoters, nutritionists, clinical community pharmacists, physical activity counsellors, community health workers and front desk staff, all of whom operate under one roof. No one particular staffing model or ratio (for example, family physicians, nurses or nutritionists per head of population) is therefore recommended, as there is limited evidence on the exact team composition that impacts NCD care outcomes, as well as limited resources available in the health system. Various clinical team compositions have positive health-related outcomes (Riverin et al., 2017; Saint-Pierre, Herskovic & Sepúlveda, 2017; Archer et al., 2012; Chwastiak et al., 2017; White et al., 2014), especially when compared to traditional primary care models (single-handed and group practices) (Riverin, Li, Naimi & Strumpf, 2017). Besides team composition, the sociopolitical and organizational context in which primary care teams operate, the task design, the team process and the psychosocial traits of the team also determine its effectiveness (Brennan et al., 2013).

The primary care teams described above are quite different from the interdisciplinary practice used in polyclinics in the eastern part of the Region, where co-located specialists work in a single organization and sometimes work together with primary care practitioners. Different operating modes will be needed in the future, including an improved focus on core NCD services, community-oriented primary care and coordination and integration, as outlined in the key messages at the end of the chapter (Table 8.3).

Primary care teams have significant resolute capacity and can thus broaden the scope of individual core NCD services. There are two main reasons to embed core services more firmly into these teams. The first is that most patients targeted by core NCD services can be diagnosed and treated with primary care, provided that health-care practitioners have the requisite training and that the legal framework allows. More than 95% of patients with type 2 diabetes mellitus can be treated at the primary level, as can patients with hypertension or heart failure and those in need of secondary stroke or heart attack prevention, cancer screening and palliative care. Most chronic diseases generally only require short specialist interventions for complex diagnostic work-up or at the time of severe exacerbations and hospital admissions.

The second reason to embed core NCD services more solidly into primary care teams is that most people have more than one primary and secondary risk factor or chronic condition (such as hypertension, obesity, diabetes and depression) and present with multiple psychological and social needs (Pan American Health Organization, 2013).

<sup>10</sup> Here we use the terms “family physician” and “general practitioner” interchangeably, to indicate a professional trained to fulfil a comprehensive medical function in primary care.

## Catalonia, Spain

### Box 8.1 Scaling up NCD core services

Primary health care services in Catalonia were thoroughly reformed in 1985. Catalonia is mapped geographically into “basic health areas”, based on population distribution. These catchment areas have helped to structurally deploy the primary care reform in a non-competitive setting, emphasizing community orientation and holding primary care accountable to designated populations. On average, a basic health area covers around 20000 people. Primary care teams comprise family doctors, paediatricians, dentists, paediatric and primary care nurses, nurse aides, social workers and health user care clerks, all of whom serve a given basic health area. In addition to the traditional diagnostic and therapeutic activities, primary care teams offer prevention, health promotion and health education activities, which are mostly performed by nurses. Comprehensiveness and responsive capacity have increased significantly over recent decades owing to the adoption of techniques and technologies that were previously used only in hospitals. Tests such as anticoagulant treatment, echography and dermatological prick tests are now offered closer to home in primary care centres. Professional compensation shifted from a salary based on lists of patients to a base salary with remuneration supplements to recognize population characteristics, such as accessibility (of rural communities) and socioeconomic status.

It would therefore make sense to treat their conditions and needs with an integrated framework of care provided by several professionals who address their patients' physical, emotional and social NCD-related challenges in a comprehensive manner (Reeves et al., 2010). Single-handed general practitioners, even with peers or nurses in group practices, do not always have the time or competencies to provide high-quality patient education and support for patient self-management. These interventions are complex and time-consuming and require highly trained professionals, such as advanced nurse practitioners, supported by nutritionists and health psychologists, who help patients make lifestyle changes. This type of comprehensive service offering is characteristic of multidisciplinary teams. Other interventions include the prevention of, among others, foot ulcers and limb amputation in diabetic patients, which requires close monitoring by allied health professionals such as podiatrists. Another example is polypharmacy in patients who present with multimorbidity. Polypharmacy is closely linked to adverse drug reactions, risk of drug–disease interactions, inappropriate dosing and nonadherence. In this context, clinical pharmacists can provide important support and optimize medication reconciliation services before or after the patient is discharged from hospital. See Table 8.1.

These examples all show the importance of adequate policy responses that use legal changes and educational reform to shift competencies in providers and scale up NCD core services as part of a comprehensive

service basket. Other important policy responses include contracting multidisciplinary teams to provide NCD core services with explicit agreements about quality and equity. While quality measures are clearly described for NCD core services and clinical guidelines exist, the equity dimension is often forgotten. Although primary care teams alone cannot improve all equity aspects and the determinants of health for all of society, they can address disparities in NCD core services directly at the point of care. Equity can be improved by enhancing the participation of particular groups, such as Roma (Europe's largest ethnic minority), in screening and lifestyle intervention programmes. Compared with national averages across Europe, Roma have significantly higher morbidity from NCDs and lower uptake of preventive health care than non-Roma (Murray, 2014). The underrepresentation of men in screening and lifestyle intervention programmes shows that programme-specific factors that attract men to participate are required (Gavarkovs, Burke & Petrella, 2016). For women, equity issues go beyond gender, as illustrated by the need for improved detection programmes in older women with diabetes and osteoporosis (Shepstone et al., 2017), both of which have significant associated morbidity and mortality (Jansen et al., 2017). Lastly, measures to improve point-of-care testing in remote settings and increased participation of community organizations working with primary health care services to scale up health promotion programmes are important policy responses to equity issues in NCD core services.

**Table 8.1. Filling the gaps in individual core services with multidisciplinary primary care teams**

Gaps in individual core services	Response provided by multidisciplinary team
Inadequate control and outdated protocols that require confirmation of diagnosis and prescription by specialists	Multiple actors need to be involved to address the core issues of poor control, which can include clinical management, knowledge of the individual and psychological and social factors.
Lack of standardization in the prevention of complications	Team members can work in complementarity in the prevention of complications, by task shifting and competency sharing.
Gaps in the prevention of acute exacerbations	Exacerbations can be prevented with effective coordination between professionals in primary, secondary and tertiary care.
Unsafe prescription of medicines	The involvement of community pharmacists within multidisciplinary teams will provide opportunities to better manage the individual, thereby ensuring safe and appropriate prescription of medicines and proper patient compliance.
Inadequate patient education	Patient education is an ongoing process, which must begin at the time of the diagnosis and continue on a regular basis to increase health literacy and patient compliance with the therapeutic regimen. Doctors, nurses and peers can deliver this education in a standardized manner.



## Community-oriented primary care **responds proactively to people's needs** by using tools to understand and manage population health and its determinants

Community-oriented primary care, as practiced by primary care teams, has three dimensions: knowledge of the community's state of health and factors affecting it; response at the patient- community- and primary care team levels; and measuring the effectiveness of those combined responses (Muldoon et al., 2010). For most attributed communities (affiliated geographically, socially, culturally, or ethnically) (Williams, 2004), a small percentage of patients account for the majority of total spending (Wodchis, Austin & Henry, 2017). It is therefore important to identify them in a timely manner and determine what actions a multiprofile team can take to respond more effectively to their needs, thereby avoiding excessive costs.

### **Knowledge of the state of health of the community**

Several tools enable primary care teams to proactively understand the health and risk profiles of their communities. Patient registries and health registries, using the WHO International Classification of Primary Care (ICPC-2) coding (WHO, 2012), are useful instruments for population health management. ICPC-2 classifies patient data and clinical activity in the domains of general or family practice and primary care, taking into account the frequency distribution of health problems seen in these domains. It allows for classification of the patient's reason for encounter, the problems or diagnosis managed, interventions carried out, and the ordering of these data by episodes of care. The International Classification of Functioning (ICF) is another useful tool that allows for the multidimensional assessment of functional status in patients (Wodchis, Austin & Henry, 2017). It is a WHO framework for measuring health and disability both at individual and population levels. As the functioning and disability of an individual occur in a particular context, the ICF includes a list of environmental factors. Proactive management of individuals and communities is also enhanced by the use of risk stratification tools. These build on health

data from empanelment, which is the assignment of individual patients to individual primary care providers with sensitivity to patient and family preference.

One example of a first-generation risk stratification tool is the risk stratification tool for CVD recommended in the WHO Package of essential noncommunicable (PEN) disease interventions in which CVD and diabetes with their risk factors are considered in an integrated manner. This approach can be a good starting point for low-capacity and low-resource countries. When using second generation risk stratification tools, patients are risk-stratified to identify opportunities for intervention before the occurrence of any adverse outcomes that would result in increased medical costs. These tools enable people to be grouped according to the "constellation" of diseases they experience and the support they receive, ranging from those in good health, for whom the appropriate interventions are health promotion and screening, to those requiring end-of-life care. Risk stratification using predictive modelling is a key stage in evidence-based intervention focused on the population with multimorbidity and additional psychological and social needs.

### **How the patient, community and team can take action to improve health**

Community-oriented primary care places particular emphasis on empowering people and the communities they live in to maximize their own well-being. When disease-specific interventions are replaced by responsiveness to individual and community needs, the orientation of care can be directed at and evaluated in the context of individually specified goals (goal-oriented care in terms of quality of life and goals that are important to the patient) (De Maeseneer & Boeckxstaens, 2012). Rather than telling patients what to do, effective primary care teams engage them in shared decision-making that respects and starts from their personal goals. Professional education should there-

## Veneto region, Italy

### Box 8.2 Risk stratification

Since 2013, predictive modelling has been used in the Veneto region to stratify the population according to risk of specific health outcomes, and to improve case identification for case management and care coordination. Predictive models identify individuals and groupings within a particular population who are expected to be major users of health-care resources. These are predominantly people with long-term conditions. The Adjusted Clinical Group (ACG) predictive model is a population grouper for risk adjustment developed by Johns Hopkins University (United States of America). The ACG model has three key goals: stratify the population and their risk; use data to integrate the process of health-care service delivery; and improve care coordination for patients with multimorbidity. The ACG model enables the identification of the top 1%, 5% or 10% of high-need, high-cost patients in a given population, and thus those who would benefit from case and disease management, as well as palliative care. Data for utilization of primary care include GP attendances, prescriptions, diagnostics and referrals. Secondary care data include admissions and bed days. Key drivers of the ACG model are prevalence within the population (numbers), ability to risk-rank the population, data quality, reach-engage ability, cost-benefit of interventions, timeliness, resource productivity and random variability in outcomes.

fore prepare health practitioners for new skills, new skill mixes and teamwork, as outlined in Chapter 11.

Primary care teams provide the most patient-centred care when they make an effort to understand the meaning behind varying patient priorities and adjust diagnostic and treatment plans accordingly. Consequently, effective community-oriented primary care emphasizes people-centred communication strategies and tools (such as integrated and individualized care plans, structured patient education, decision aids, outreach activities, lifestyle counselling, multidisciplinary assessments and multidisciplinary treatment protocols) (Muldoon et al., 2010). Teams should also engage patients in leadership roles, calling on them as experts in chronic care management and to identify priorities for improvement. For a full overview of people-centred care strategies and tools, see Chapter 10.

### Measuring the effectiveness of community-oriented primary care

The final key aspect of community-oriented primary care is to measure its effectiveness, starting from the premise of collective ownership of shared goals and outcomes. Measuring the performance of community-oriented primary care is challenging, as the use of a rigid list of quality metrics disregards the reality of complex interactions and interdependencies characterizing the system, which cannot be understood or predicted simply by measuring its individual elements. Patient care in the primary setting must take account of each patient's socioeconomic factors, as well as comorbidities, disease severity, functional status, medication tolerance, beliefs and goals (Stringhini et al., 2010). These input variables for health outcomes are often beyond the control of both the physician and the patient (Hershberger & Bricker, 2014). Current summative quality scorecards often disadvantage physicians who care for the most vulnerable patient populations and existing metrics may, paradoxically, encourage poor quality of care (Greenhalgh, Howick & Maskrey, 2014).

Primary care teams therefore need well aligned quality measurements for community-oriented primary care that promote accountable performance by rewarding team members for managing complexity, solving problems and thinking creatively when addressing the unique circumstances of individual patients with NCDs. Priorities for outcome and performance management include patient-centred reporting, quality goals that are not based on rigid targets, metrics that capture avoidance of inappropriate testing or treatment, attributes associated with better outcomes and lower costs, and patient-centred outcomes. Patient-centred outcomes include patient-reported experience and outcome measures, days of avoidable disability and peer-led quali-



tative reviews of patterns of care, practice infrastructure and relationships with other health and social facilities in primary and secondary care (Bodenheimer et al., 2014). Overall, monitoring progress requires data systems, feedback mechanisms and benchmarking strategies

to compare data in a given region. Performance measurement data should be drilled down to each clinician and the entire staff to stimulate and evaluate improvement.



## Coordination and integration are essential for people-centred services and outcome management

Coordination within primary care teams ensures that a combination of health services and information are provided that not only meets a patient's needs but addresses them in the right order. The main aim of care coordination is to improve NCD outcomes while containing overall health-care costs. Effective coordination has been shown to: improve care outcomes, such as effective medication management, early detection of disease exacerbation, and reduction in hospital admissions; avoid duplication of services and conflicting information from multiple providers; increase patient and caregiver satisfaction. Coordination can also prevent vulnerable populations from falling through the cracks in the health-wellness continuum.

Effective care coordination is complex, as it requires the integration of health and social care, prevention, promotion and curative services, rehabilitation, mental health, palliative care and the voluntary sector. Primary care teams need to work closely with other agencies and civil society organizations to ensure that programmes reach beyond patients to support their social health and the health of the wider community. Examples of this type of coordination include active living strategies to reduce childhood obesity, and the prevention of childhood adverse events by providing education on parenting skills for adults. Such initiatives are essential to address the upstream causes of chronic conditions; there is a strong link between childhood adverse events and the onset of chronic diseases in later life (Alastalo et al., 2013; Brown, Thacker & Cohen, 2013).

Challenges to care coordination are, however, numerous and include limited availability of time for family physicians to take on care co-

ordination roles and responsibilities. Well established processes are required to identify patients in need of care coordination. Mutually accepted interdisciplinary care protocols need to be shared between primary care teams and providers or organizations from other settings and levels of care. Care plans must be individualized, with regular case discussions and easily available knowledge-sharing communities. Several new care professions have therefore been established to facilitate coordination of care, such as the (nurse) case managers who fully engage in a care coordination. The pros and cons of care coordination models are outlined in Table 8.2.

Primary care teams assign patients who are eligible for care coordination to a (nurse) case manager or social worker, who supports the team by overseeing the care process as a whole. The case manager can either be part of a particular team or can work for a primary care organization while serving multiple teams in a given region. The case manager can perform a variety of roles and responsibilities within the care coordination process. Comprehensive client health risk assessments are conducted, with reassessment at determined intervals. This process goes beyond clinical needs assessment and includes a holistic approach to determining medical, psychological and social needs. Case managers then support patients and their families in getting the right care in the right place at the right time, and often provide social and psychological support, as well as advocacy. They actively inform patients about the roles of their service providers and about their rights, and provide support during visits to health-care practitioners. Some case managers also play an important role in clinical monitoring, such as monitoring the effects of medication and treatments, tracking progress and adjusting therapy to ensure optimum disease control



## Belgium

### Box 8.3 Community-oriented primary care (and how to prepare medical and nursing students for it)

Belgium has over 160 community health centres providing community-oriented primary care, mostly in deprived areas. The centres use a patient list system, with integrated needs-based capitation, which provides payment for family physicians/general practitioners, nurses and physiotherapists, and in most centres also includes social workers, nutritionists, health promoters, and psychologists. The team offers prevention and health promotion, curative services, patient education and self-management support, patient and family caregiver empowerment, psychological counselling, social services, referral and care coordination. Risk stratification, outcome monitoring and community participation are important strategies to improve NCD prevention and management.

To prepare medical students for community-oriented primary care, Ghent University has integrated an inter-professional exercise into its undergraduate medical curriculum, whereby students spend four days in a deprived community, developing a “community diagnosis”. This involves visiting a local family and its various care providers. Qualitative findings are combined with available, local epidemiological, sociodemographic and other population-based data, to arrive at the “community diagnosis”. The medical, nursing and social work students then brainstorm possible solutions, and by the end of the week they write an advocacy letter to an agency requesting some form of improvement in the local living conditions based on their family case study.

## Turkey

### Box 8.4 Care coordination for improved cancer screening

Turkey has launched a national cancer control programme, which is an integrated public health strategy focusing on primary prevention, early detection, effective treatment (including palliative care) and surveillance of cancer. National screening standards are currently in place for breast, cervical and colorectal cancers. Specialized outpatient departments, known as centres for early cancer diagnosis, screening and education, have been established to provide screening, diagnosis, training and smoking cessation services. The centres are managed by general practitioners, nurses and imaging technicians and are hospital-based. Care coordination between the centres and family medicine and community health centres helps to facilitate organized and systematic screening. An enrolment database allows family physicians to identify individuals in a screening target group and enables community health centres to organize public campaigns and arrange transport for patients on the day of appointment. Close collaboration between family practices and the centres resulted in a significant increase in coverage rates for all three of the aforementioned cancers between 2007 and 2014.

**Table 8.2. Pros and cons of care coordination models**

Care coordination models	Pros	Cons
<b>Dedicated case manager working for a single team</b>	<ul style="list-style-type: none"> <li>+ All expertise in one team member.</li> <li>+ Patients have a clear understanding of who the case manager is.</li> </ul>	<ul style="list-style-type: none"> <li>- Risk that other team members continue providing “care as usual”.</li> <li>- Case manager is not known to the patient and patient has no choice of case manager.</li> </ul>
<b>Dedicated case manager working for a primary care organization and serving several teams in a region</b>	<ul style="list-style-type: none"> <li>+ All expertise in one team member.</li> </ul>	<ul style="list-style-type: none"> <li>- Potentially less knowledge of team dynamics and of the expectations of the different teams.</li> <li>- Number of tasks is limited, as the case manager is not familiar with the patient’s context (enhanced communication will be needed between acute care and post-acute care providers to ensure critical information follows the patient through the transition).</li> <li>- Case manager is external to the team caring for patients.</li> </ul>
<b>Assignment of case manager within a team on a case-by-case basis</b>	<ul style="list-style-type: none"> <li>+ All team members are obliged to expand service basket and competencies.</li> <li>+ The patient can be involved in choosing a case manager, which positively influences the patient’s trust in the team and improves quality of interaction.</li> <li>+ Increased job satisfaction for providers, owing to greater variability in tasks.</li> </ul>	<ul style="list-style-type: none"> <li>- Potential lack of competencies if there is no specific (postgraduate) training in care coordination or a lack of interest on the part of individual team members.</li> </ul>

and symptom relief. Case managers often take part in patient and caregiver education and self-management support, collaboratively establishing care goals and assisting patients in developing the skills associated with self-efficacy. In view of the foregoing, the coordination role can be intellectually demanding and time-consuming, hence the need for task shifting from doctors to nurses or social workers, as outlined in Chapter 11. Another care coordination scenario is to prepare all team members for the role and then appoint the case manager depending on competencies of providers and patient preferences. The pros and cons of the various care coordination models are outlined in Table 8.2 above.

Other policy responses that promote coordination and integration of care include integrated care certification programmes, which focus on a life-course approach to care, co-location in primary care, health and social care budget pooling, promotion of multidisciplinary guidelines, care plans and shared-care protocols, and appropriate referral systems and handover strategies from hospital to primary care. There is also an increasing emphasis on ensuring adequate information solutions that promote integrated care between levels and settings, as described in Chapter 14.

## Effective regulatory instruments offer great potential to expand primary care further, strengthening its resolute capacity with regard to NCDs and reducing reliance on specialist and hospital services



To promote the development of primary-care-based teams, the resolute capacity of primary care to deal with NCDs needs to be strengthened (Kringos et al., 2010). Other important aspects that can be considered pro-primary care regulations are addressed elsewhere in this book. Chapter 6 highlights the importance of governance, emphasizing the need to link health with other sectors at the community level. Chapter 7 outlines the role of primary care in preventive and curative services, while applying a life-course approach to the individual. In Chapter 9, the role of primary care is described in the context of regionalization initiatives, highlighting the need for clear referral and counter-referral pathways. Chapter 10 focuses on people-centred strategies, emphasizing the importance of a focus on the individual and integrating a biopsychosocial approach to health. Human resources, financing mechanisms, medicine policies and information solutions are covered in Chapters 11, 12, 13 and 14 respectively.

### Government vision for the role of primary care and how to safeguard equity

It is essential that the government has an explicit vision and strategy for the role of primary and multidisciplinary care within the health system.

This vision should provide a strategic narrative and context for taking forward the implementation of pro-primary-care regulations, and the required actions to improve equity, enhance efficiency and achieve financial sustainability. As highlighted in Chapter 5, various challenges exist with regard to equity and the response to NCDs. For primary care specifically, equity issues relate to underutilization of services by men, differences in accessibility between urban and rural areas, and issues related to service delivery in rural areas including lack of human resources, less comprehensive services and poor access to medicines. There is also the issue of equity in the allocation of resources between the primary, secondary and tertiary levels of care, and the impact this has on the delivery of services for NCDs. Chapter 6 emphasizes the importance of local governments in developing NCD responses; primary care is one of the instruments for doing so. Equity issues must be addressed by assessing inequities and their causes, looking at equity-related indicators, and measuring equity in outcomes as part of routine data collection at the primary care level. Greater investment in deprived areas is needed to ensure equity in access, from both geographical and financial perspectives.

## Volume, type and distribution of services

Given growing concerns about the substantial increase in primary care workload and the need for sufficient numbers of health-care practitioners, especially family physicians, per capita and by geographical distribution, it is important to ensure proper alignment between need for care and availability of care. Most Member States in the WHO European Region have either nationwide or local shortages of family physicians, according to national standards. There is therefore some considerable variation in the distance that patients are required to travel to access services. Several countries report concerns that the availability of family physicians will become increasingly restricted owing to the ageing workforce, or that they face particular difficulties in providing general practice services to rural and deprived urban areas. There are few easy solutions to workload pressures in primary care. The perception of general practice as a stressful, high-pressure, low-status career choice with excessive administration needs to change. Immediate steps might include increasing payment for family physicians and increasing the availability of practitioner consulting time by reducing the non-direct clinical workload for a given period. Other strategies would be to reduce patient health-seeking behaviours and increase self-management (Kringos, Boerma et al., 2015). Greater emphasis on team-based care and important task shifting towards nurses and allied health personnel would also be effective. A gatekeeping system might be useful to contribute to regional primary care performance. Appropriate mechanisms should be put in place to optimize the gatekeeping process according to the various contexts (European Commission, 2014). Lastly, a significant budget shift by reducing the oversupply of acute hospital beds in favour of strengthening primary care is also an important strategy (European Commission, 2017).

## Formal educational requirements for providers to work in multidisciplinary teams

Over recent years, significant progress has been made in preparing the health workforce to work in primary care, and enhancing skills that promote collaborative efforts. Although in most countries quality assurance is guaranteed by the requirements of formal professional education for providers working in primary care, there is still much to improve. The extent of training and subjects studied varies considerably, and in several countries the domain of general practice remains

limited (family physicians are not trained to provide care for children, for instance). In some countries, postgraduate training for family physicians is very limited. It could be important to ensure that around 50% of medicine and nursing graduates are prepared to train for primary care. For homecare nurses and community nurses, opportunities to obtain advanced education are limited, and are mostly only available in countries in western Europe that have well developed systems of primary care (Kringos, Boerma et al., 2015).

Ensuring equity requires training for health personnel in a variety of skills that will allow them to approach their work through an “equity lens”.

## Aligning incentives

Changing physicians’ payment methods may facilitate, but not guarantee, the necessary changes in delivery of care. It is, however, acknowledged that the way physicians and teams in primary care are remunerated affects the organization and outcomes of care (Gibson, Segal & McDermott, 2013). Payment reforms include incremental approaches aimed at improving existing volume-based models using coordination and performance-based incentives or monitoring over-bundled payment and retrospective or prospective full capitation models (needs-based integrated capitation system). Overall, important aspects in the design of payment reform are aligning incentives with system goals, striving for consistency in incentives and payment methods across providers and payers, and protecting providers against unavoidable risk and variation in patient morbidity (Borgermans et al., 2017).

## Conclusion

The ageing population and the increase in the number of people diagnosed with multiple NCDs are forcing policy-makers and public health leaders to reform health-care systems with increasing urgency. Multidisciplinary primary care teams are a valuable means to address demographic, epidemiological, social and cultural challenges with regard to NCDs, although a substantial set of pro-primary-care regulations with systemwide consequences is required.

Table 8.3. Overview of key messages and policy responses

Key messages	Policy responses
<p><b>Multidisciplinary teams afford a great opportunity to expand coverage of core services for NCDs as part of a comprehensive service offering</b></p>	<ul style="list-style-type: none"> <li>■ Contract multidisciplinary teams for core NCD services with explicit agreements about quality and equity.</li> <li>■ Make legal changes (shift provider competencies) and changes in education.</li> </ul>
<p><b>Community-oriented primary care responds proactively to people's needs by using tools to understand and manage population health and its determinants</b></p>	<ul style="list-style-type: none"> <li>■ Establish regulatory frameworks for population health management.</li> <li>■ Use predictive analytics to model medical conditions to identify high-risk patients.</li> <li>■ Enhance mechanisms to voice patient needs (patient associations provide feedback on health workforce performance, support the development of professional curricula for health, set benchmarks and indicators of services).</li> <li>■ Use primary care outcome indicators.</li> </ul>
<p><b>Coordination and integration are essential for people-centred services and outcome management (that responds to individual and population needs)</b></p>	<ul style="list-style-type: none"> <li>■ Introduce new professionals for care coordination.</li> <li>■ Apply integrated care certification programmes targeting a life-course approach to care.</li> <li>■ Pool health care and social care budgets.</li> <li>■ Use information solutions that promote integrated care between levels and settings of care (shared electronic medical records).</li> </ul>
<p><b>Effective regulatory instruments offer great potential to expand primary care further, strengthening its resolute capacity with regard to NCDs, and reducing reliance on specialist and hospital services</b></p>	<ul style="list-style-type: none"> <li>■ Develop a governmental vision on primary and multidisciplinary care with strong stakeholder involvement and a focus on equity.</li> <li>■ Promote particular medical specialties (e.g. family medicine).</li> <li>■ Reduce the oversupply of acute hospital beds.</li> <li>■ Apply regulatory frameworks for professional accreditation (clinical licensing, certification and periodic recertification examinations for health professionals).</li> </ul>

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# 9

## **Transforming individual health services:**

regionalization of  
specialized care for  
noncommunicable diseases

**Nigel Edwards**

# Agenda for action

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**Organization of hospital services requires a nuanced approach**  
given the evidence and drivers for  
and against centralization

1

2

**The regionalization model employed should be in line** with  
the type of service being provided  
and patient needs

Creating regional systems **requires**  
**skilful management of process**

3

4

Making the models work **requires**  
**new ways of working** and relationships  
across the system

## Motivation

This Chapter describes how health-care services, in particular hospitals, can respond to the increase in NCDs in Europe (Chapter 3), and the related challenges (Chapters 4 and 5). Particular issues include: the growing burden of NCDs; multiple morbidities, particularly for an ageing population; long-term illness frequently interspersed with acute episodes; and the growing evidence base for what can be achieved clinically. Chapter 5 suggested that a lack of well functioning regional planning, along with ambiguity over the respective roles of different levels of care, variable quality of pre-hospital care, and barriers to access have contributed to imbalances in the distribution of specialist care. The potentially widening gaps between western and eastern countries in the WHO European Region, between men and women, and between socioeconomic groups, require attention when designing solutions.

Chapter 8 describes how primary health-care has been developing and how it can improve outcomes, particularly where patients are engaged in managing their own care. At the same time, changes in information communication technology and medical knowledge are also shaping the way that hospitals organize their services for patients with NCDs. This is having a profound effect on the role of hospitals and how they relate to each other and to primary care. These changes have created pressures to centralize services as the need for multidis-

ciplinary, highly specialist and technology-dependent care has grown, for example in cases of cancer and stroke.

At the same time, however, the potential to decentralize has also increased, owing to new technologies, improved primary care and the creation of standardized pathways of care. This is particularly the case for more common chronic diseases (such as diabetes, respiratory diseases, and ischaemic heart disease), where the development of more organized approaches to population health requires different ways of working and which create opportunities for decentralization.

Policy-makers and planners are interested in both of these trends as they often see regionalization as offering opportunities for improved outcomes and efficiency, and decentralization as creating better integration and more responsive and accountable services (Simpson, 2011).

This Chapter examines why these changes are happening and how to treat the evidence, some of the models that are emerging and the choices these entail, the ways in which policy-makers, planners and those responsible for the system can shape these trends, and how the models can be made to work effectively. The development of regional governance for health systems is a separate policy trend and is not considered here.

## Organization of hospital services requires a nuanced approach given the evidence and drivers for and against centralization



Long-term and powerful forces drive the organization of specialist services in the direction of both regionalization and decentralization; the case for change needs to be carefully examined. Factors driving the centralization of hospital services are mostly related to growing specialization in medicine. This means that some hospital services increasingly need to serve larger populations in order to sustain the professional teams required to meet modern standards (Simpson, 2011). The increased specialization of medicine means that there is also an economic reason for change (Kaul, Prabha & Katragadda, 2016); small populations simply do not generate the amount of work needed to make it cost-effective to maintain the large teams required to be able to provide 24-hour cover (see Box 9.1). A further issue is the conflict between the trend towards increasing specialization, and the growing numbers of patients with multiple conditions that do not fit neatly into the traditional categories of medicine and require multidisciplinary care. This creates a particular challenge for the management of emergency conditions, where a 24-hour response is required. In some countries (such as the United States of America, the United Kingdom, the Netherlands and other member countries of the European Union) there has been a reinvention of the skilled general physician to respond to this challenge (Wachter & Goldman, 2016; Howe, 2012).

While some changes have led to increasing regionalization and hospital consolidation, the development of technology and improvements in primary care (Quanjel et al., 2017; Martínez-González et al., 2015; Murphy et al., 2017) have allowed many hospital services to be decentralized. This has great advantages for patients – particularly those with chronic conditions that require frequent monitoring. Examples include: routine monitoring (such as methotrexate levels, international normalized ratio (INR) tests and anticoagulation dosages and the availability of other routine blood tests with storage and collection so that patients do not have to travel to hospital); procedures for investi-

gation and treatment (including endoscopy, hysteroscopy, bladder cystoscopy, removal of skin lesions, other minor surgical operations); routine treatment (such as renal dialysis, light therapy for skin conditions, chemotherapy, other intravenous infusions); post-procedure follow-up; ultrasound and X-ray; and other out-patient and office-based consultations that do not require specialist equipment.

These changes have resulted in a significant reduction in the number of acute hospitals over the past two decades in many European countries, and in particular in the countries of the former Soviet Union and central and eastern Europe. For example, between 1993 and 2003 the number of hospitals per 100 000 population dropped from 10.6 to 4 in Kazakhstan, from 7 to 1.9 in the Republic of Moldova, and from 1.7 to 0.7 in Croatia. The number of hospitals was also more than halved in Estonia, Israel, Lithuania, the Netherlands and several other countries (WHO, 2017). This trend is likely to continue and plans are even being made for further changes in countries with high levels of consolidation, such as the Netherlands, the United Kingdom and Scandinavian countries.

Evidence in support of the centralization of services requires careful consideration as it is stronger for some areas than others and is continually evolving. There is evidence linking volume of care to outcomes in some conditions (Flood et al., 1979; Halm, Lee & Chassin, 2002; Amato et al., 2017). Much of the literature on this relates to surgical procedures and the evidence suggests that, while some of these results are due to the skill of individual clinicians, in many cases superior outcomes come from high-quality, well organized, multidisciplinary teamwork, and the opportunity for teams to learn to work together to develop and continuously reinforce standardized work processes.

## **Box 9.1** Four major NCDs meriting centralization of expertise

### **Cancer**

Highly expensive equipment for radiotherapy and imaging have always tended to be centralized. It is increasingly clear that where clinicians specialize, particularly in some of the more complex types of surgery, this can yield better results. Guidelines from the United Kingdom National Institute for Health and Care Excellence and others suggest that units performing surgery for urological, gastric and oesophageal cancers should serve at least 1 million people (Allum et al., 2011; NICE, 2002), and that specialist head and neck cancer services should treat a minimum of 100 new cases of aerodigestive tract cancers per year (excluding glandular tumours) (NICE, 2004).

### **Stroke**

Stroke diagnosis, treatment of the most acute phase and clot recovery all require the centralization of expertise. In Europe, stroke has an incidence of 95–290 per 100 000 population (Béjot et al., 2016). Running a 24-hour specialist rota that provides the right level of expertise to deal with stroke is therefore unlikely to be economic unless a relatively large population is covered.

### **Acute coronary syndrome**

Similar pressures exist to centralize interventional cardiology. The European Society of Cardiology has advocated one 24-hour percutaneous cardiac intervention centre for every 600 000 to 1 million of the population, based on a percutaneous cardiac intervention rate of 600 per million (NHS Commissioning Board, 2013), and a minimum of 400 procedures per year.

### **Vascular surgery**

There is a growing consensus that major vascular surgical procedures require units that can offer 24-hour expertise, and that this requires a large population base. Guidance from the United Kingdom, for example, suggests a minimum population for major centres of 800 000 people (Imison et al., 2014).

Some of the main areas where there is the strongest evidence for increased centralization are outlined below.

The evidence linking case volumes with the quality of outcomes is not so clear for internal general medicine or cases with no procedure. Fewer studies have been undertaken and the association between volume and patient outcomes for medical conditions has been found to be disease-specific, for example in acute myocardial infarction, heart failure and pneumonia. These benefits are exhausted at relatively low activity thresholds – 610 patients per year for those with acute myocardial infarction, 500 per year for those with heart failure, and 210 for those with pneumonia (Ross et al., 2010).

In countries of the former Soviet Union, the centralized Semashko model had a pattern of a large number of relatively small hospitals offering a limited range of acute services. Many of the smallest of these have been either closed or converted to provide residential or nursing care. Many countries have further to go to consolidate hospitals that often still serve relatively small populations. The main obstacles are shortage of funding for replacements, political reluctance and poor transport links, which mean that patients are unable or unwilling to travel to larger centres. Under the Semashko system, more specialist care was already centralized, although often in individual single-profile institutes. This has made the provision of multidisciplinary care more difficult. The approach taken in Estonia to regionalize the hospital system with a view to addressing these issues is described later in this chapter.



# The regionalization model employed should be in line with the type of service being provided and patient needs

There are different levels and types of regionalization of hospital services according to service and context. They reflect the nature of the services being delivered, and have also been shaped by history, politics and capabilities of the existing system. In practice, there are three broad approaches (see Figure 9.1).

■ **Highly specialist centralization.** In this model, particular types of specialist work are delivered in only a very small number of centres. This can mean that in some cases, particularly in smaller countries, a particular condition may be so rare among the local population that these services need to be sought abroad. Routine follow-up may be conducted by local hospitals, but often patients may need to return to or consult with the main centre for review. Examples of this include specialist care for cystic fibrosis, such as transplants, or rare cancers, such as retinoblastoma.

■ **Hub and spoke networks and tiered services.** In this model, regional centres (hubs) undertake the most specialist work while less specialist “spokes” provide less technical services, diagnostics and aftercare. In colorectal cancer, for example, the “spokes” might conduct high-use, lower-intensity work across a wide range of activities along the patient pathway, such as screening, scoping, imaging, biopsy, surveillance, chemotherapy, rehabilitation and coordinating end-of-life care. The growth in patient survival rates has increased the need for long-term support and follow-up. The local “spokes” are well placed to provide these services. The hubs would provide major surgery, radiotherapy and histopathology, manage complex, metastatic disease, would serve as centres for research, and be responsible for leading standards development across networks.

Tiered services with defined levels of care are similar to the hub and spokes network approach (Ong, 2017); in both cases, there is a shared pathway of care between the various elements of the network and clear rules for determining the levels of care. These models are particularly useful when there is a high volume of more routine care that needs to be delivered in a standardized way, or when there is a need to reduce the amount of patient travel.

## ■ Non-hierarchical networks.

In this model, expertise can be spread more evenly across a system, although some parts of the network may provide more specialist care or expertise than others. The model is likely to span hospitals, primary care and other providers, and as such requires careful assessment of their readiness to take on additional tasks including the management of elements of sometimes complex care pathways. This model is most appropriate when the various types of expertise required are spread between different providers, yet there is no compelling reason to locate them together. These networks can provide advice and expertise to other providers, such as interpreting images (East Midlands Radiology Consortium, 2017), as well as being a vehicle for delivering direct care to patients.

ParkinsonNet<sup>12</sup> in the Netherlands is an example of a nonhierarchical network. Over 3000 professionals in 69 regional groupings work to a standard guideline developed with patients with Parkinson’s disease, who use an online tool to manage their care and exchange information with each other and with professionals. Although the network is coordinated by a specialist hospital, the goal is to support patient self-management and minimize the need for hospital care. The results have been impressive, particularly with regard to reducing depression, falls and fractures and improving self-perceived function. Furthermore, the network also provides a valuable resource for research and quality improvement (Gray, Sarnak & Tanke, 2016).

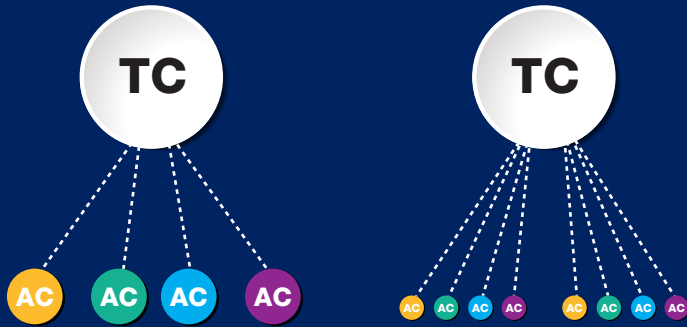
Policy-makers and planners need to ensure that the most appropriate model of regionalization is adopted, reflecting the nature of the service and the needs of patients. The choice and design are determined by: the frequency with which patients need to use the service; the extent to which the service requires specialist or high-tech facilities and equipment, expert team-based care or multidisciplinary teams; or whether the key element of the service is the dissemination of knowledge or advice that does not depend on co-location, and can be enhanced through the use of information communication technologies.

<sup>12</sup> See <http://parkinsonnet.info/> [accessed 3 February 2018].

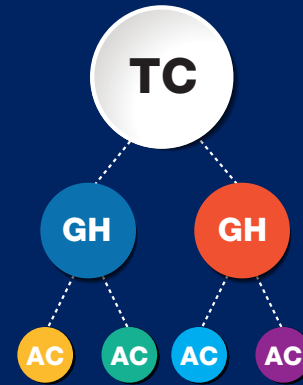


Figure 9.1. Regionalization models for specialist services

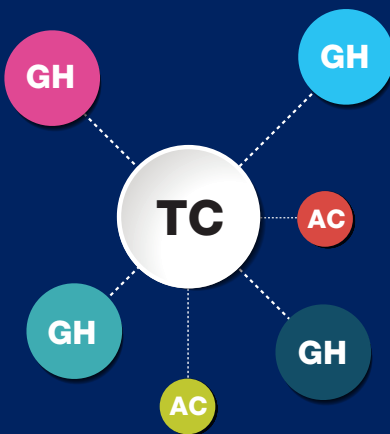
Highly specialist centralization



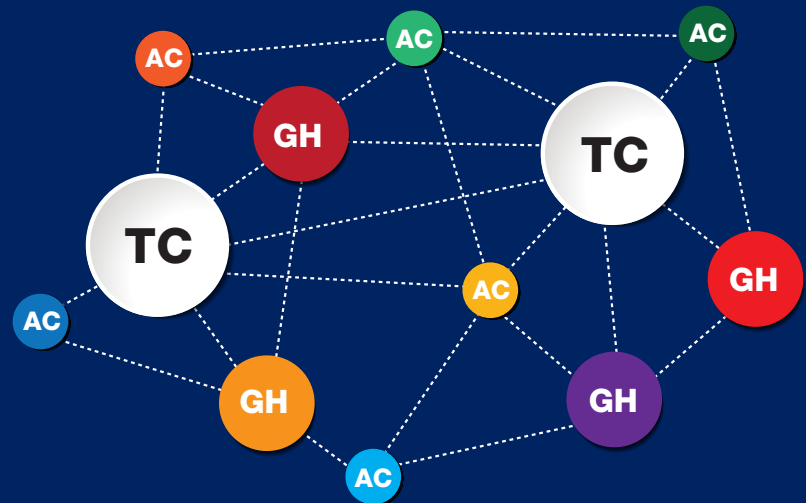
Tiered services



Hub and spoke



Nonhierarchical networks



TC = Tertiary centre  
GH = General hospital  
AC = Ambulatory care

## Creating regional systems **requires skilful management of process**



Although the regionalization of hospital services is a difficult process, several important lessons can be drawn from the successes and failures in attempts to change hospital systems in various countries throughout the WHO European Region.

Hospitals need to be planned as a part of a wider system of care rather than as stand-alone institutions. Experience of large-scale changes suggests that planning-based approaches work well to create momentum for change, provided that political and other opposition can be overcome. While market-based mechanisms may provide some support to the change process, they seem to have more limited effect, owing, among other reasons, to weak signals from prices and payer behaviour. Although selective contracting and other methods that withdraw resources from hospitals can be effective, many payers have been reluctant to take that step because of the potential consequences.

In Estonia, hospitals were very successfully regionalized through the implementation of a master plan and roadmap for change (Koppel et al., 2008). This involved setting criteria for access (such as maximum travel times for certain types of case), quality standards and efficiency criteria. These were developed with expert input and by using benchmarks, such as population sizes for different levels of care. The number of acute hospitals was reduced from 68 to 13, and acute beds from 6500 to 3100. Centralizing complex and specialist care while decentralizing other types of care was an important part of the regionalization process. The change was facilitated by creating merged hospital systems, allowing the managers to enhance clinical collaboration, ensure more rational provision of radiology and laboratory services, create standardized approaches to quality and make other efficiencies. It seems likely that these reforms would have been a lot more challenging if significant progress had not already been made in developing a capable primary care system; this meant that both an effective gatekeeping function and an extended range of primary care services were already in place.

In 2007, a bold reform was undertaken in Denmark's governmental structure, reducing the number of municipalities and converting former counties to five administrative regions (Vrangbaek, 2016). Successful changes occurred where responsibility for hospital services, psychiatry and primary health-care was attributed to the regional level. The five regions each developed a hospital plan. For the capital region, this was based on planning areas with a population of around 400 000 people, a set of principles on volumes and quality, and guidelines about what should be expected in each hospital and which – more limited – services would be provided in local hospitals. An expert panel determined the proposed configuration and very specialist services were approved at the national level. Continuation of the reform process has led to further plans being developed, including re-designing cancer pathways and merging 40 emergency departments to create 21 units offering 24-hour care. In parallel with a reduction in the number of major hospitals, general practice has been strengthened, including through extended opening hours and improvements to the coordination of care on patient pathways. Home care has also been expanded.

Successful planning approaches have tended to focus on improving the quality of service provision by creating larger-scale services and emphasizing a multidisciplinary approach. This has often been achieved by developing a tiered network of care, with clear responsibilities between the different levels. Using standards, set by experts or clinical consensus, to develop the model ensures feasibility, viability, and legitimacy of the approach taken by all stakeholders. These standards may be expressed in terms of population size, minimum numbers of cases or the physical, staffing, equipment or clinical support services required.

Plans should be based on evidence and quality criteria. In response to a growing body of evidence from clinical audit data, stroke care in London, United Kingdom, was reorganized in 2010. The number of

hospitals admitting stroke patients was reduced from 28 to 8, serving 1–1.5 million people each. These hospitals were designated as “hyper-acute stroke units” and pre-hospital protocols were established to ensure the transfer to one of the units of any patient with suspected stroke. The result of this service reorganization has been a significant improvement in the quality of stroke care in London and a 1.1% reduction in the 90-day fatality rate. The process for designating stroke units and hyper-acute stroke units involved setting rigorous standards for the services that should be available and evidence-based response times – for example, the ability to provide rapid imaging and diagnosis, time to administer thrombolysis. Ambulance travel times were also an important part of the calculation. The process involved “bottom-up” design of the standards and criteria and “top-down” implementation. An element of the decision-making process involved hospital providers bidding to become hyper-acute stroke units and being assessed by an independent panel. The implementation was done as a single “big bang” change (Morris et al., 2014).

As in London, the regionalization of specialist care for acute coronary syndrome in St Petersburg, Russian Federation improved quality of care and patient outcomes. The network was designed through the Federal Cardiovascular Programme (2008–2013). The first step was the introduction of a two-level system of regional cardiovascular centres – hospitals which offered percutaneous coronary intervention – and primary cardiovascular departments – hospitals without catheterization laboratories. Pre-hospital logistics to ensure short transportation times had to be developed. A citywide electronic acute coronary syndrome registry was established, and independent reviews of quality of care in each regional cardiovascular centre have been performed twice since the model of care was established in 2013. There are now 16 centres, 13 of which work 24 hours a day.

As seen in the Estonia case study, consolidating the management of hospitals is an effective method of managing change. This may include encouraging the development of hospital groups, designating formal networks, changing ownership, mergers, acquisitions and other approaches. These reduce the tendency for hospitals to undermine change by focusing on optimizing their own position in negotiations. In the example of Denmark, the changes had the effect of weakening the relationship between local government and individual hospitals; when regional authorities have to manage the whole network they are less likely to defend a particular institution. A similar approach was taken in Hungary. Mergers and ownership changes carry risks as the associated costs and disruption can be significant (Fulop et al., 2002). In France and Germany, multiple hospital chains were established predominantly through acquisition rather than merger (Nolte et al., 2014),

as this can reduce the risk of some of the disruptions associated with mergers.

Cost implications should be considered carefully. Changes often mean that some hospitals lose income, which can pose challenges partly due to the fixed nature of many of their costs. This may require the closure or downsizing of some hospitals, along with the expansion of regional centres. Change processes are therefore greatly assisted when linked to capital investment, as was the case for hospital regionalization in Denmark. A national capital fund of 3 billion was made available, which enabled consolidation, the relocation of services and the closure or repurposing of some smaller hospitals. Regions were required to bid for funding against a set of centrally set criteria.

In the case of the hospital system reform in Estonia, while the quality of clinical care improved, there were no administrative savings. A large capital programme (€300 million) helped facilitate the change, as did incentives developed through the payment system including needs-based criteria for payment, minimum quality standards and optimal workload levels. Payment methods also incentivized shorter durations of stay. These measures meant that the National Insurance Fund took decisions to stop contracting with some providers for acute care. The whole process required detailed negotiations with many stakeholders.

It should not be assumed that moving care from hospitals to primary care or out-of-hospital settings is necessarily less costly. The care the patient receives in primary care may be very similar to that provided in hospital, although possibly with less reliance on expensive diagnostics. While some costs may also be saved through more appropriate and conservative investigation and treatment in primary care, most of the prices charged by hospitals are made up of overheads and fixed costs. This means that, to make substantial savings, considerable reductions in capacity, or even complete closure of some sites, would be needed.

The patient perspective should be central to the plan. Chapter 10 highlights the importance of people-centred care, and following those principles it is important to ensure a strong patient voice in shaping services. Although the question of who represents patients and the public varies between systems, in almost all cases their elected representatives will have an important say and also need to be involved as early as possible.

The planning of regional systems needs to take particular account of patient travel. Planners often underestimate the importance of this, particularly for patients who do not have access to a car or who need to use services regularly, such as for chemotherapy. Travel times for

inpatients' visitors are also an important consideration. In the case of stroke services in the London case study, there is an important link between travel times and patient outcomes. The costs of ambulance transport are considerable and in some cases, even though the costs of providing local services are high, they may still be lower than the additional transport costs required by centralized models.

None of the changes described here were easy to design and they were even harder to execute. At the very least the support of professionals and politicians for the programme of change is essential. Professionally led change, in which clinicians identify a case for change and develop and lead some or all of the process, is the most powerful and effective.

The political process is difficult as regionalization does involve some areas gaining services and others losing. In the example of stroke

services in London, the process was highly political, with politicians interested in maintaining the status of their own local organization. Although services for stroke and conditions with stroke-like presentation were a small proportion of the work of hospitals, there was a fear that the loss of these services would lead to a more significant degradation of the hospital's status as an emergency care provider. This does not seem to have materialized.

Arguments that decentralization can actually improve overall access and that centralization improves outcomes appear to be less compelling than many health-care planners believe. Regionalization requires skilful dialogue with the public, high-level support and buy-in from policy-makers and leaders in the medical profession, and significant managerial skill to be executed successfully.

“None of the changes described here were easy to design and they were even harder to execute. At the very least the support of professionals and politicians for the programme of change is essential. Professionally led change, in which clinicians identify a case for change and develop and lead some or all of the process, is the most powerful and effective”



## Making the models work **requires new ways of working and relationships across the system**

Regionalization and decentralization require the development of new ways of working and relationships between the various parts of the system. Many of these models involve hospitals working more closely together, for example as part of a referral network.

They also have significant implications for the way that hospitals and hospital-based specialists work with primary care.

### **Hospital–hospital relationships**

To allow hospital regionalization to function well and for hospitals to operate collectively as part of a network, several mechanisms will need to be developed by policy-makers, planners, payers and regulators to ensure that the systems work well.

Firstly, there needs to be clarity in defining the capabilities and roles of each level of the system. This requires standardization of the patient pathway and clear referral criteria. There also needs to be a good relationship between the different service levels to ensure that they offer appropriate support and cooperate with each other seamlessly to ensure, for example, rapid responses to requests for assistance, and, when the patient is ready, a swift return to a lower level of care. High-quality ambulance services also need to be available. These need to be able to make decisions about where to take patients in an emergency and support the transfer of seriously ill patients.

When specialist work is centralized, maintaining attractive roles in smaller hospitals and providing education and training can be challenging. Measures – such as staff rotation and ensuring that higher-level trainees are required to work in smaller centres – to ensure that roles in these smaller hospitals remain attractive are important.

To support effective relationships, interoperable information communication technologies at each service level, along with telemedicine and

telehealth services, are required to be able to share patient information easily across distances. Payment systems also need to be redesigned to remove the incentive to retain patients who should have been transferred to specialist centres. The regulatory regime may need to reinforce this with appropriate sanctions. Furthermore, quality regulators will need to pay attention to how the whole pathway of care operates, rather than just the care and systems within individual institutions.

### **Hospital–primary care relationships**

Primary care can provide local, regular support for patients with NCDs and is a vital part of their care after hospitalization, at the end of life, and at other key points. As such, it is essential that effective ways are found to keep primary care and hospital services effectively connected (van Hoof, Steevens et al., 2016; van Hoof, Elissen et al., 2016; Modig, Holmdahl & Bondesson, 2016). If not properly considered, regionalization can potentially undermine this. If specialists do not have a good understanding of the capabilities of primary care, they will be unsure about whether it is possible to safely discharge patients back to the care of the primary care physician.

Given the large body of rapidly changing evidence regarding the management of long-term conditions, primary care physicians, nurses and other clinicians need support in their work and help to them keep up to date with the latest developments.

Under the Semashko model, there was often a pattern of basing specialists in areas such as cardiology or endocrinology alongside primary care providers. This had the effect of de-skilling primary care providers by taking over the management of patients that should have been within their capabilities. This also meant that patients were not treated in a holistic manner, which led to an increase in the number of comorbidities. The new models can overcome this problem and create new relationships.



Hospital specialists in areas such as endocrinology, respiratory medicine, nephrology, cardiology and rheumatology have a key role as part of a network to support the management of NCDs, oversee the administration of complex treatments and provide feedback and help with quality improvement. There are similar opportunities in paediatrics and geriatric medicine. This, however, requires new professional skills, a different approach to consultations, and a change in the relationship between hospitals, primary care and patients. The key aspects of this will include the need for all clinicians to take responsibility for ensuring that the patient is either treated or referred quickly to another professional who can help. The development of specialisms has created the risk that the goal of many clinical encounters is simply to exclude a condition, and that no particular clinician is responsible for coordinating the process of investigation, diagnosis and treatment. There will also be the need to plan ahead, to identify risks for individual patients and work with them to address those risks. This often requires action to deal with nonmedical problems in the patient's life that are affecting compliance with treatment plans. Strategies for population health and prevention will also need to be developed using disease registries to help specialists and primary care clinicians identify, risk stratify and intervene with individuals or groups of patients who require screening, follow-up or other interventions. These registries are also important for tracking outcomes and improving care processes, as can be seen from the impact of registries on acute myocardial infarction survival in Sweden (Larsson et al., 2012).

Where specialists take on roles as overseers of care and providers of support to other professionals, this will have implications for their work and they will tend to focus more on patients with more complex conditions. For example, a respiratory service in North London has evolved a long way from the traditional model based on outpatient referral. The service, which is based at Whittington Health National Health Service Trust, provides hospital and community health services to a population of approximately 460 000 people in London. It comprises a specialist outpatient respiratory clinic based at the hospital, a 21-bed acute inpatient ward, including a four-bed high-dependency unit, and the Integrated Community Respiratory (CORE) team, which supports patients at home following discharge from hospital or referral from general practitioners. The CORE team is led by respiratory consultants and staffed by respiratory nurse specialists, physiotherapists, clinical psychologists, a stopsmoking advisor and an integrated respiratory specialist registrar. The team works with 36 general practices in Islington to provide education, training and support to patients in the community. The service manages 4500 outpatient attendances and treats 1400 new patients each year (The King's Fund, 2014). The respiratory department provides a number of other services in hospital and in the community working along pathways of care, including

providing support for patients after discharge, ongoing case management, telephone support and home visits, pulmonary rehabilitation, patient education and a range of other services. The respiratory service has made substantial improvements in patient outcomes and reductions in emergency admission, as well as helping a significant number of patients to stop smoking.

To make these models work, standardized pathways and management approaches need to be developed jointly by specialists, primary care clinicians and patients. These have the potential to reduce opportunities for errors, as patients move through the system, to ensure that each professional is clear about their role and to provide the patient with the information that allows them to participate in or control important parts of their care.

Shared patient records and information systems are an important enabler. This means sharing patient records between hospital specialists and general practitioners, or at the very least the ability to share key information in real time, share images between providers, and conduct video or telephone consultations between clinicians. In Valencia, Spain, for example, integrated models have specialists and general practitioners working in the same facility and able to share information with a common record (Serrano, Ferrer & de Rosa Toner, 2017; Blasco et al., 2007). In the Kaiser Permanente health system, family doctors can obtain video consultations with specialists (Pearl, 2016). In both cases, family doctors and other primary care workers are trained to a high level and the relationship is one of equals – this avoids the risk of disempowering primary care and creating an impression among patients that primary care represents a lower level of care.

There are several other areas in which hospitals have an opportunity to support integrated, people-centred health services, which may be more effectively delivered where there is a critical mass of clinical staff and an infrastructure that can support outreach from the hospital.

Hospitals can be encouraged to reach out to their communities, for example by supporting the management of frail older people in residential and nursing home care, in particular by training staff to deal with crises, providing telephone or other support when staff are uncertain how to manage emerging problems, and providing specialist advice from palliative care experts, geriatricians, pharmacists and others.

Palliative and end-of-life care is a crucial aspect of integrated, people-centred health services. Patients with pain or other symptoms that are refractory to standard palliative intervention or that worsen acutely may require hospitalization for symptom control. In some systems and for some patients, care can be provided at home or in specialist facilities



or, if this is not feasible, ideally in a palliative care ward with doctors and nurses with advanced or specialist training in palliative care. Since some patients require hospitalization before death, the palliative care team should be prepared to assist them or their families with decision-making about end-of-life care and bereavement support. Doctors on the palliative care team should also be available for consultation by colleagues from other departments and from lower-level hospitals or health centres.

Furthermore, it is increasingly possible to provide rapid and effective ambulatory treatment for conditions that would previously have required hospital admission. A short stay in an ambulatory setting, with appropriate follow-up by primary care, helps patients avoid the hazards of hospitalization and reduces the primary care workload, thus allowing more time to focus on supporting patients with more complex needs. Hospitals can support primary care providers in managing conditions that might otherwise require an admission, such as deep vein thrombosis and pulmonary embolism, pneumonia, supra-ventricular tachycardia including atrial fibrillation and asthma and for planned treatments such as infusions and minor investigations. These do not necessarily need to be managed as inpatient cases or even on the hospital site.

To successfully apply the models described, policy-makers need to eliminate significant potential barriers, such as those in regulatory and payment systems. Patients' perceptions of and attitudes towards changes in service delivery also need to be considered, regarding for example their travel and the use of primary care as their "medical home". This area is not always amenable to policy interventions but the messages sent both by policy-makers through co-payment and deductible policies, and by medical leaders about the benefits of change, can help with this. The approaches detailed here to ensure that regionalization works are closely aligned with those supporting the key message 3 in Chapter 10 on people-centred care: "Integrated networks, which provide services that have true added value to patients, families, communities and citizens, are essential".

## Conclusions

The way in which NCDs are managed will continue to change over time. This will alter the relationship of hospital services to primary care, the role of the hospital and the shape of the networks required.

Evidence in this area is quite nuanced and policy-makers and planners need to recognize the limitations and avoid simplistic "bigger is better" or "small is beautiful" arguments. Distinguishing genuine arguments in favour of regionalization, based on improved outcomes and reduced costs, from less legitimate ones that may be based on the aims of organizational or professional growth may not always be easy. The choice and design of model also require careful thought, not least because centralization and decentralization can flow in both directions over time as treatments and technologies evolve and it is therefore important to plan for flexibility.

Good-quality planning and skilful implementation are also needed; managing the change process can be difficult and requires skill as well as a very high level of involvement and support from professionals and politicians. The payment and regulation system can provide support, but is usually not sufficient to drive the required changes without planning, management and political action to make and implement decisions. Payers need to be prepared to stop contracting with some institutions.

Furthermore, there is a need to rethink how the various parts of the system work with each other. Deliberate redesign and the creation of systematic processes of care are required, particularly at the interfaces between different parts of the system, to reduce the potential for errors or omissions in patient care. Regionalization and the grouping of hospitals together do not produce improved integration as a matter of course. As services become more regionalized, risks arise if specialists become divorced from primary care. The creation of pathways, models of "shared care", the use of communications technologies and other measures are needed to build and sustain relationships between specialists in NCDs and primary care staff.

There are important contextual issues to consider and new approaches are required to support hospitals in this very different role. Whichever model is developed, it must include the capability to manage knowledge and provide advice, supervision, education and support across wider networks. For key messages and policy responses, see Table 9.1.

Table 9.1. Key messages and policy responses

Key message	Policy responses
<p><b>Organization of hospital services requires a nuanced approach given the evidence and drivers for and against centralization</b></p>	<ul style="list-style-type: none"> <li>■ Examine the case for change carefully.</li> <li>■ Do not assume the evidence for specific procedures or specialist care applies more generally – the case for centralization is stronger for some areas than others.</li> </ul>
<p><b>The regionalization model employed should be in line with the type of service being provided and patient needs</b></p>	<ul style="list-style-type: none"> <li>■ Establish whether technology can reduce the requirement to centralize.</li> <li>■ Consider different types of models of regionalization and weigh their strengths and weaknesses for particular services.</li> <li>■ Consider whether changes in treatment approach might change the dynamics to decentralize or centralize in future.</li> </ul>
<p><b>Creating regional systems requires skilful management of process</b></p>	<ul style="list-style-type: none"> <li>■ Ensure that the patient perspective is central to the plan.</li> <li>■ Involve stakeholders early and have an open dialogue with the public.</li> <li>■ Plan the system, not individual providers.</li> <li>■ Base plans on evidence and quality criteria.</li> <li>■ Involve clinical professionals in standard-setting.</li> <li>■ Ensure regulatory systems are aligned with the new model.</li> </ul>
<p><b>Making the models work requires new ways of working and relationships across the system</b></p>	<ul style="list-style-type: none"> <li>■ Develop common standardized patient pathways.</li> <li>■ Create systems to hold network models to account.</li> <li>■ Rethink the role of smaller hospitals to ensure they remain viable.</li> <li>■ Develop shared patient records — with patients, hospitals and primary care.</li> <li>■ Incentivize specialists and primary care to work together and ensure that payment models do not undermine the new models.</li> <li>■ Encourage hospitals to reach out to their communities and large hospitals to support smaller units.</li> </ul>

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# 10

**A people-centred approach**  
to strengthening  
health systems for  
noncommunicable diseases

Liesbeth Borgermans  
Ellen Nolte

# Agenda for action

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**Improving health literacy**  
is essential to the development of  
people-centred health systems

1

2

**Health practitioners must  
be empowered** to change their  
behaviour and the clinical settings and  
organizations they work in, for the better

**Integrated networks, which provide  
services** that have true added value  
to patients, families, communities and  
citizens, are essential

3

4

Health systems must consistently **invest  
in engaging patients and citizens**  
and in the regulatory frameworks,  
information technology, intelligence  
and infrastructure that support  
people-centred care

# Motivation

The idea that people should have a stronger voice in decisions about their health and care, and that services should better reflect their needs and preferences, is a top priority in the transformation of health-care systems (Waters & Buchanan, 2017). People-centred health systems embrace a central and expanded role for informed, active patients, families, citizens and communities, who interact with the health system at multiple levels (WHO Regional Office for Europe, 2013) and participate in making decisions about their own health and care and about the health and well-being outcomes they wish to achieve. People-centred care goes beyond the immediate health care context and takes full account of the broader influences that can impact people at the individual level. It is especially important for patients with chronic conditions who have repeated exposure to the health-care system at multiple levels. NCDs are socially transmitted conditions, bound by common upstream drivers (Allen & Feigl, 2017). These drivers not only predispose individuals to developing NCDs (Allen et al., 2017), but also shape the disease course and lived experience (Sommer et al., 2015). Given that the emerging evidence base shows the immense potential community and individual benefits of people-centred care (Dwamena et al., 2012; Boulding et al., 2011; Van den Pol-Grevelink, Jukema & Smits, 2012; Van der Heide et al., 2017; Kim & Park, 2017; Liang et al., 2017; Kane et al., 2015. See also the BMJ “Too Much Medicine” initiative).<sup>14</sup> The WHO Regional Office for Europe is working to support Member States in their efforts to strengthen their health systems and make them more people-centred (WHO Regional Office for Europe, 2015).

Some two thirds of premature deaths in the WHO European Region are caused by four major NCDs: cardiovascular disease, diabetes, cancers and chronic respiratory disease (WHO Regional Office for Europe, 2016a), and it is estimated that tackling major risk factors (such as tobacco and alcohol use, unhealthy diet, physical inactivity, hypertension, obesity and environmental factors) could prevent at least 80% of all heart disease, strokes and diabetes, and 40% of cancers (WHO Regional Office for Europe, 2016a). The presence of just one healthy behaviour, compared with none at all, halves the chronic disease risk in cancer cases (Ford et al., 2009). By increasing patient

empowerment, patients have the potential to participate, jointly with clinicians, in the prevention and treatment of disease, which depend increasingly on changes in personal behaviour (Olsson et al., 2013; Dwamena et al., 2012; Panagiotti et al., 2014).

Shaping policy to strengthen people-centred care will essentially start with a better understanding of the diverse needs of people with chronic conditions. A growing number of people want more options and information about the care they receive, more input into decisions about their care and higher standards of treatment. They do not want to be medicalized and they want to be treated humanely; to be respected as individuals and treated equitably and compassionately. People want a comprehensive assessment with less redundancy, support for transitions into and out of hospital, and more attention to mental health over the course of their care. From the staffing perspective, quicker response times, ongoing patient-provider communication and consistency between providers and across care units are important (Figure 10.1). All of these elements drive the need for change from the patient, family and citizen perspective.

Evidence-informed policy and good practices with regard to people-centred care have come from resource-rich and resource-challenged health systems alike, showing that any health system can achieve positive change with the judicious and appropriate use of existing resources and capabilities (Berwick, 2009). Key strategies involve comprehensive and positive changes across four action areas (corresponding to key health system constituencies), which will continue to drive and sustain the paradigm shift: individuals, families and communities; health practitioners; health care organizations; and health systems (WHO, 2007). The interrelatedness of these four domains means that changes in all parts of the health system must be mutually reinforcing if real transformation is to occur. The strategic people-centred health system responses described in this chapter are comprehensive but not exhaustive, providing Member States with an indicative list of evidence-informed strategies that can be utilized in developing better people-centred health systems. The overview is based on previous WHO frameworks on people-centred care (WHO Regional Office for the Western Pacific, 2007; WHO Regional Office for Europe, 2016b), and expert consultation.

<sup>14</sup> See <http://www.bmj.com/too-much-medicine> [accessed 18 January 2018].



# Improving health literacy is essential to the development of people-centred health systems

**Key  
Message**

## Health literacy is at the heart of people-centred care

The central and expanded role of patients, families, communities and citizens calls for further improvements in health literacy, which is defined as: “people’s knowledge, motivation and competence to access, understand, appraise and apply health information in order to make judgments and take decisions about health care, disease prevention and health promotion to maintain or improve quality of life throughout their lives”. Health literacy is at the heart of people-centred care: poor

health literacy is detrimental to health, well-being and life prospects throughout the life course, as it disempowers individuals from making healthy choices (Dyakova et al., 2017).

The objectives of improving health literacy are to:

- empower citizens, patients, family (caregivers) and communities through improved knowledge, self-management, self-identification, trust, authority to partner, self efficacy, and co-production of services;
- improve access to and navigation of the health-care system;
- improve compliance with follow-up appointments, medication and instructions for at-home care;
- increase patient satisfaction; and
- lower health-care spending.

Health literacy underlines the importance of managing health, self-monitoring, communication with health professionals and the role of emotions related to chronic conditions.

## Health literacy requires a broader view of the determinants of health and well-being

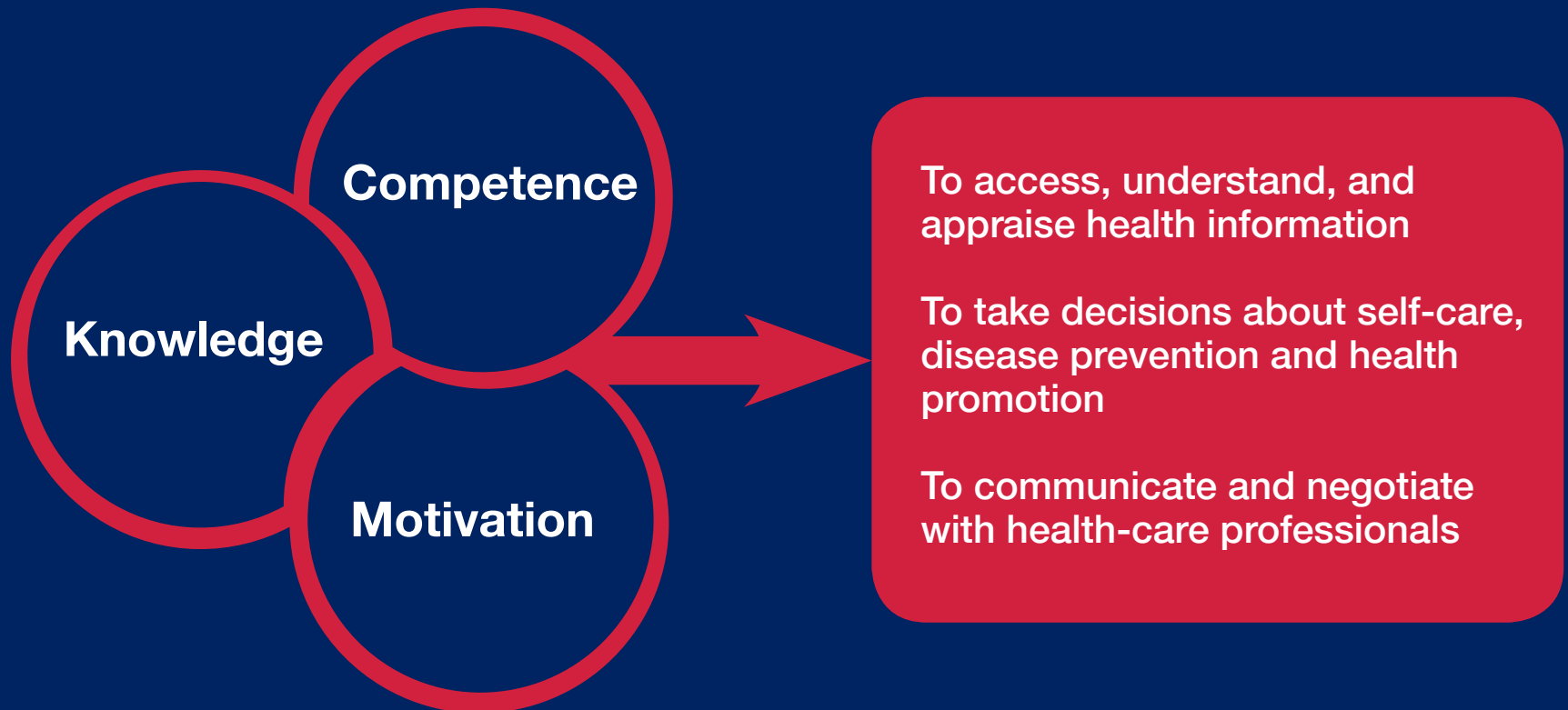
To meaningfully improve health literacy in people with chronic conditions, it is paramount to take into account the broader determinants and thus the “bigger picture” of well-being (Rigby, Kock and Keeling, 2016). While health literacy itself is important for health and wellbeing, the importance of other dimensions that determine health and well-being at the individual level must also be acknowledged (Cavalin et al., 2017). These include material conditions (income and wealth, jobs and earnings, housing), and quality of life (health status, education and skills, social connections, work–life balance, civic engagement

**Figure 10.1. Patient priorities for people-centred care**



Figure 10.2. Enhancing health literacy

# Enhancing health literacy



## Examples of interventions to enhance knowledge, motivation and competence

- Diabetes education and self-management programmes
- Psychological counselling to adhere to lifestyle changes in patients with hypertension
- Patient-led peer support groups for patients with stroke
- Use of online decision tools for patients with cancer
- Patient courses on effective communication with doctors

and governance, environmental quality, personal security and subjective well-being) (OECD, 2015; Prüss-Ustün et al., 2016).

### Health literacy as an effective paradigm across the prevention spectrum

Health literacy is potentially an effective paradigm across the prevention spectrum (primary, secondary and tertiary) as it establishes a pattern for health early in life and provides strategies for mitigating illness and managing it later on (Grady & Gough, 2014).

The general challenges of chronic disease prevention may, however, be compounded by other challenges, such as limited education, and especially the experience of childhood adverse events. There is compelling evidence that different types of trauma in early life are significant risk factors for poor health in adulthood, including all kinds of chronic physical and mental illness. Research into the biology of stress shows that being exposed to “toxic” levels of stress during early life harms the developing brain and other or-

**“Up to 47% of the population in the WHO European Region is thought to have poor or inadequate health literacy, which has a negative impact on health and well-being throughout the life-course.”**

(Sorensen et al., 2015)

gans, and contributes to a chronic state of inflammation. Toxic stress occurs when a child experiences strong, frequent or prolonged adversity, such as economic hardship, abuse or exposure to violence, substance abuse, mental illness and parental divorce. An estimated 50% of the population in Europe has experienced at least one adverse childhood experience, which makes it an important public health concern. In this context, the quality and care coordination challenges to a life-course approach to health literacy cannot be met by any individual organization or entity acting alone. Rather, communities and coalitions are needed to drive improvement, complementing

existing and new health policy responses. These communities go beyond geographic boundaries to include groups linked by objectives, disease, condition, culture, occupation, among others. Chronic diseasespecific affinity groups play a crucial role in gathering, reaching and motivating patient constituents, advocating on behalf of patients, and conducting campaigns that focus on a life-course approach to the development of health literacy (Conway et al., 2006).

## Health practitioners must be empowered to change their behaviour and the clinical settings and organizations they work in, for the better

### Need for revision of workforce competencies

Professional caregivers who deal with complex and multiple health problems in their patients can no longer rely on traditional approaches to care that focus on individual diseases. For many years, common medical practice meant that physicians made decisions for their patients. This paternalistic approach has gradually been supplanted by one that promotes patient autonomy, whereby patients and doctors share the decision-making responsibility. The question to patients, “what is most important to you?” should drive the operationalization of compassionate and competent care. As outlined in Chapter 11, meeting patients’ changing health-care needs must begin at the beginning: in education. Medical education should include preparation for (the ideal of) biopsychosocial chronic care and a team-based approach to care through

practical training for multispecialty collaborative practice and preparing physicians to lead primary care teams that include non-physician providers, cost-effective care in clinical practice, increased training in geriatrics, and “on ramps” and “off ramps” along the physician career path for flexible training over a lifetime (Chung et al., 2012). Since medical care determines only 10% to 20% of overall health prospects, integrating public health into the medical care of individual patients is essential, as described in Chapter 7. These functions include a focus on population health, prevention and the social determinants of health, and thereby recognize the many determinants of health that can be harnessed to promote patient health and well-being.

**Key Message**

Another central feature of educational and professional reforms is the emphasis on patient-centred decision-making, which is the process of identifying clinically relevant, patient-specific circumstances and behaviours to formulate a contextually appropriate care plan. Patient-centred decision-making requires particular communication skills applied by both patients and professionals. Some studies have found that patients have different views from clinicians regarding the importance of certain health goals and health-care risks (Lee, Hultman & Sepucha, 2010). This misperception improves when patients are able to participate actively in their consultations. Increased activation in turn correlates with improvements

**“Fewer than half of patients are satisfied with their level of control in medical decision-making.”**

(Institute of Medicine, 2011)

in a variety of self-management behaviours. Since patients and families vary in their desire and ability to engage, it is important to consider how we can tailor efforts to individual patients and families, address their specific needs and concerns, and facilitate maximum engagement. While some patients like to play an active role in self-management and care decisions, others may not, whence the complex role of patient autonomy in the provision of people-centred care. It is important to consider that adults with limited health literacy are less likely to ask questions of health practitioners, seek information or accept screening programmes. It is therefore important to encourage behaviour that produces small successes, and to provide tailored support and education.



## **Integrated networks, which provide services that have true added value to patients, families, communities, and citizens, are essential**

### **Development of integrated networks**

Future health organizations will not be stand-alone hospitals, but rather will form part of an integrated network in which the classic divides between primary and secondary care, physical and mental health, health and social care, prevention and treatment, and private and public institutions, no longer exist. The patient entry point into an integrated network should be primary-care-based, as described in Chapter 8. The integrated network comprises a combined focus on: personalization of care and population health; an integrated workforce with partnerships spanning primary and secondary care, mental health, community care, social care and the voluntary sector; aligned clinical and financial drivers that allow for shared risks and rewards between partners; and provision of place-based care to a registered population (Kumpunen et al., 2017).

The level of whole-population funding depends on the needs of the population and the scope of services agreed through commissioning arrangements. In this context, the introduction of innovative services is needed to address the health and social needs of complex high-cost

patients. Examples include: self-referral pathways; close cooperation between primary care and the local community, specialists and the voluntary sector; introduction of selected specialist clinics in the community (such as diabetes services); regular pharmacist review; proactive frailty services; and care navigation for non-health issues.

Owing to the sizes of the populations covered by integrated networks, it may be a long time before changes are seen in indicators that show improved health, such as changes in hospital admission rates or population prevalence of particular conditions. It is therefore important to evaluate against a mix of shorter- and longer-term indicators. Depending on the intervention, appropriate shorter- to medium-term indicators might include patient well-being, or biometric markers such as weight or HbA1c measures in diabetics.

### **Importance of learning organizations**

Recognizing the imperative to focus on people, a learning health-care organization is one in which patients and their families are key drivers of the design and operation of the learning process. Patients bring important perspectives on the experience in clinical settings, and on coordination and cooperation among various elements of their care.

# Health systems must consistently **invest in engaging patients and citizens** and in the regulatory frameworks, information technology, intelligence and infrastructure that support people-centred care

## 4 Key Message

### Investment in patient and citizen engagement in health policy-making

People-centred care requires an expanded role for the health system with broader parameters for health-care interaction, patient education, and health education in schools, adult learning and community development programmes, among others. Sustainable and equitable improvements in health and well-being for people with chronic conditions require effective policy across the whole of government and collaborative efforts across all of society. This whole-of-society approach is most meaningful when target communities and groups, or more broadly civil society, are involved in all aspects of policy-making and programme development, implementation and evaluation. Creating resilient communities in which people are empowered and have the opportunity to express their needs and interests in the context of policy development is an important strategy for the WHO European Region, and will be the key to the successful implementation of the 2030 Agenda for Sustainable Development. In this context, civil society organizations can make a vital contribution to improving people-centred health systems (Greer et al., 2017).

### Investment in regulatory frameworks that support people-centred care

While regulatory frameworks that contribute to the development of people-centred care cover many areas, four types are deemed essential to the development of people-centred care.

#### Regulatory frameworks for the development of patients' rights and responsibilities

Patients' rights and responsibilities vary in different countries and under different jurisdictions, and often depend on prevailing cultural and social norms. Some patient charters contain long lists of rights but lack

organization and clarity. As a consequence, people do not realize their specific rights and responsibilities at the time of their care, which can cause confusion for patients and health-care providers alike (Mujovic-Zornic, 2007). It is important to educate citizens about what they should expect from their governments and health-care providers: what kind of treatment and respect they are owed. To support such reforms, methods to accurately measure people-centred care must be developed.

#### Regulatory frameworks for educational and professional reforms

Regulatory frameworks for educational and professional reforms, as also outlined in Chapter 11, target doctors, nurses, physiotherapists, occupational therapists, dieticians and social workers, amongst others. The objectives of these frameworks are to: develop new skill sets and competencies across the health workforce; improve inter-professional education; and improve staffing and task delegation within the health workforce. These objectives illustrate that the process of matching health workforce competencies to patients involves more than just securing a health workforce that has the theoretical knowledge and skills to work more efficiently and effectively (Frenk et al., 2010; Langins & Borgermans, 2015).

#### Regulatory frameworks for collaborative entities and teams

The implementation of regulatory frameworks for collaborative entities and teams (coupled with financial incentives or changes in payment systems) is essential to promote people-centred care. The objectives of such regulatory frameworks are to improve: care coordination; integration of medical and social, mental or community care; inter-professional and interorganizational governance; relationship continuity with health professionals; use of evidence-informed medicine; and continuous discharge planning. Policy-makers can opt for one overarching regulatory framework that applies to all collaborative entities

and teams, or opt for more specific frameworks in support of different types of collaborative initiative. For any regulatory framework, collaborative entities and teams must include: a set of people-centred care indicators that are disease-specific and a set that are not. There are currently no established sets of indicators available for measuring people-centred care for people with chronic conditions, and the indicators used can be disease- or non-disease specific. Value-based payments to support collaborative entities range from incremental approaches aimed at improving existing volume-based models, using coordination and performance-based incentives or monitoring bundled payments, and the retrospective or prospective full capitation models described in Chapter 12. Aligning incentives with system goals, striving for consistency in incentives and payment methods across providers and payers, and addressing provider protection from unavoidable risk and variation in patient morbidity are all important aspects in shaping payment reform.

### **Regulatory frameworks for population health management**

Significant progress has been made in population health management owing to the emergence of integrated care delivery systems as outlined in Chapter 8. Population health management involves both the definition and measurement of health outcomes and the roles of determinants. It also involves providing a wide spectrum of health-care services that encourage behavioural change and healthy lifestyles to obtain optimal outcomes. The objectives of regulatory frameworks for population health management are to improve experiences and outcomes of care and to reduce per capita cost.

### **Investments in information technology, infrastructure and intelligence to support people-centred care**

Since effective people-centred care relies in part on the availability of information technology and intelligence, appropriate investments are needed (see Chapter 14). Patient-centred applications, such as patient portals, personal health records and integrated voice response systems, are designed to educate patients about their condition, their medications, and how they can self-manage chronic conditions such as diabetes, hypertension or heart disease. Health information exchanges allow organizations to share information across organizational boundaries, thereby enabling all participating providers in a community to access patient information, which helps them to provide

better patient care. Clinical decision support systems help providers interpret clinical results, document patients' health status, and prescribe medications using alerts, reminders and customized data entry forms. Disease registries capture and track key patient information to assist care team members in proactively managing patients. Electronic health records with integrated decision support and chronic care management tools help providers manage patient information and monitor health outcomes for those undergoing treatment for chronic diseases. Electronic health records integrated with laboratory and pharmacy information systems can supply import information to support electronic health record chronic disease management functions.

Telehealth applications remotely connect providers and patients in the joint management of chronic diseases. Remote monitoring devices and electronic health records are components that extend traditional telehealth networks to provide enhanced chronic disease management functions for patients and providers.


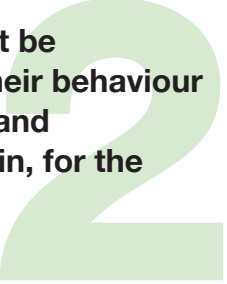
A continuous process for evaluating what works is essential, and must be well supported with adequate data and sufficient statistical input. Data collection must be embedded in clinical encounters (especially where the family physician's record is the most consistent source of data), and information governance rules should be minimized to allow data sharing.

## **Conclusion**

Sustainable transformational change towards people-centred health systems will require high-level political support and commitment to a new "compact" between citizens and services that will empower citizens as patients, carers, providers, and community workers to be active and equal partners. Those with oversight of the system must provide adequate and sufficient political, professional and social support for change to ensure that the necessary actions are taken to reconfigure organizational structures and remove barriers to change. They must ensure that change is comprehensive, consistent and contextually appropriate, and that decision-making is transparent and protected against vested interests, with ongoing stakeholder consultation and participation at all levels. For key messages and policy responses, see Table 10.1.



Table 10.1. Overview of key messages and policy responses

Key messages	Policy responses
<p><b>Improving health literacy is essential to the development of people-centred health systems</b></p> 	<ul style="list-style-type: none"> <li>■ Use regulatory frameworks to promote evidence-based health education and individual or group-based self-management training programmes.</li> <li>■ Promote skills-oriented health education programmes in schools.</li> <li>■ Increase community and mass media health education campaigns.</li> <li>■ Promote participation of citizens and patients in health-oriented groups, consumer organizations, local government.</li> <li>■ Provide personalized and comprehensive decision-making aids, including computerbased and web-based health education packages (these tools provide balanced information on diagnostic and treatment options, including risks and potential outcomes).</li> </ul>
<p><b>Health practitioners must be empowered to change their behaviour and the clinical settings and organizations they work in, for the better</b></p> 	<ul style="list-style-type: none"> <li>■ Enhance clinical leadership capacity in championing people-centred health care.</li> <li>■ Use models of professional education and health curricula that are based on working with users and citizens and that highlight the competencies of people-centred health practitioners.</li> <li>■ Promote continuing professional development for health practitioners in a number of forms (e.g. Internet, professional associations and journals).</li> <li>■ Implement advanced practitioner education and roles.</li> <li>■ Apply tools that deliver reliable, current clinical knowledge to the point of care.</li> </ul>
<p><b>Integrated networks, which provide services that have true added value to patients, families, communities, and citizens, are essential</b></p> 	<ul style="list-style-type: none"> <li>■ Ensure that community leaders advocate and support community involvement in health service delivery.</li> <li>■ Support team development and effective teamwork.</li> <li>■ Apply shared-care protocols across disciplines.</li> <li>■ Establish participation and collaboration mechanisms for local governments, communities, health-oriented groups and consumer organizations.</li> <li>■ Conduct targeted monitoring and evaluation of individual and team performance for continuous quality improvement and people-centred care.</li> <li>■ Promote patient and family participation in decision-making structures of integrated networks.</li> </ul>
<p><b>Health systems must consistently invest in engaging patients and citizens, and in the regulatory frameworks, information technology, intelligence and infrastructure that supports people-centred care</b></p> 	<ul style="list-style-type: none"> <li>■ Engage citizens and patients in policy-making for health.</li> <li>■ Establish regulatory frameworks for the development of patient's rights and responsibilities.</li> <li>■ Establish regulatory frameworks for collaborative entities and teams.</li> <li>■ Establish regulatory frameworks for population health management.</li> <li>■ Investment in information technology, infrastructure and intelligence to support people-centred care (e.g. promoting the use of personal health records).</li> </ul>



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11

Noncommunicable diseases  
and human resources  
for health:  
**a workforce fit for purpose**

Gilles Dussault, James Buchan

# Agenda for action

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**The supply of human resources for health must be improved** using two main strategies: training “new” workers in the correct competencies to meet NCD demands; and utilizing current workers more effectively

1

2

Having “more” health workers is not a sufficient policy response; **they must also be more accessible**

**The quality of the health workforce must improve** for the provision of NCD services to be optimized and needs to be met

3

4

Workforce policy and planning, regulation and management **must be aligned with service planning and delivery**, and must support integrated teams rather than isolated individual health professionals

## Motivation

As discussed in previous chapters, the increasing incidence and prevalence of NCDs in the WHO European Region will require a transformation of services. New types of services will be required, with new modalities and locations of delivery. These will affect the health workforce in terms of skills needed, new roles, additional numbers, mix and deployment. Each aspect of service transformation must be identified clearly and assessed to develop and implement effective policies and strategies that will help strengthen the capacity of the existing and future health workforce. In this chapter, first we examine briefly how the workforce element is defined in recent policy statements on NCDs. We then describe the main challenges that policy-makers face in trying to meet the health workforce needs that derive from the changing and increased demand for services linked to NCDs. We go on to identify policy options that can be considered to respond to these challenges. We do so recognizing that interventions need to be adjusted according to the targeted disease or group of diseases, the epidemiological and demographical profile of the population, and the characteristics and resources of a country's health system.

Which human resources are needed to reduce the incidence and prevalence of NCDs? There are few, if any, detailed analyses of the health workforce changes generated or necessitated by the high incidence and prevalence of NCDs. Most often, the discourse on the importance of strengthening of health systems focuses on the need for a stronger and better prepared health workforce, without saying much about what needs to change and how to change it. For example, the Lancet NCD Action Group and the NCD Alliance have proposed a series of priority actions to address the NCD "crisis", in which the need for health workers with the right skills is only mentioned in passing (Beaglehole et al., 2011). The Global status report on non-communicable diseases 2014 is more specific in advocating for the "incorporation of public health

aspects of NCD prevention and control in teaching curricula for medical, nursing and allied health personnel, and provision of in-service training. Policies and legal frameworks will be required to promote the retention of health workers in rural areas, particularly in primary care" (WHO Regional Office for Europe, 2014).

The WHO Global Conference on Noncommunicable Diseases (Montevideo, 18-20 October 2017) adopted a roadmap that includes a commitment to invest "in health workers as an essential part of strengthening health systems and social protection" and to "work to ensure a highly skilled, well trained and well resourced health workforce to lead and implement actions to promote health and prevent and control NCDs" (WHO, 2017a).

Major stakeholders have acknowledged the need to adapt and orient the workforce to demands related to NCDs. The European Commission (2015) has funded various major research projects, including on new roles for health professionals,<sup>16</sup> continuing education (Executive Agency for Health and Consumers, 2013), and on recruitment and retention, as well as Joint Action on Health Workforce Planning and Forecasting.<sup>17</sup> These initiatives involved most of the 28 member countries of the European Union and helped put issues of availability and accessibility, and quality of human resources for health higher on the policy agenda. The Organisation for Economic Co-operation and Development (OECD) has published Right Jobs.

<sup>16</sup> See <https://www.abdn.ac.uk/munros/> [accessed 20 January 2018].

<sup>17</sup> See <http://healthworkforce.eu/> [accessed 20 January 2018].

# The supply of human resources for health must be improved using two main strategies: training “new” workers in the correct competencies to meet NCD demands; and utilizing current workers more effectively



Right Skills, Right Places (OECD, 2016a), including the extension of the scope of practice for non-physicians (OECD, 2016b).

The most obvious challenge created by the increase in demand for NCD-related services is to increase the availability of health workers with the right skills and qualifications. The critical issue is to push policy thinking beyond focusing purely on numbers, to giving full consideration to other dimensions such as skills, specializations, team work, deployment and working conditions.

In certain areas, gaps in human resources for health are particularly obvious and significant. These areas include mental health, public health, rehabilitation, nutrition services or home care and palliative care. When considering the future profile of the health workforce, however, it is not just a question of “more of the same”. Given the need for both equity and efficiency, it is imperative to ensure that the workforce has the right skills and competencies to meet identified population health needs. This means first identifying the skills required, and then ensuring that pre-service and life-long education and training curricula are adjusted accordingly. Reforming and transforming education for health professionals continues to pose a major challenge, notably in some countries in the east of the WHO European Region (see Chapter 5) but evidence-informed protocols can be applied to give impetus where needed (WHO, 2013a). There must also be a “whole-of-workforce” perspective, which considers how best to educate, train and deploy workers effectively as teams, which may extend beyond the formal health workforce to include patients, volunteers, carers and social workers (Judge, Bass, Snow et al., 2011).

Front-line health workers dealing with patients who have complex and multiple health problems can no longer rely on traditional approach-

es to care that focus on individual diseases (Langins & Borgermans, 2015). The care model of the future will result from a paradigm shift away from acute biomedical care focusing on problems towards goal-oriented care driven by patients’ comprehensive needs. Effective primary care-based teams engage patients in shared decision-making that respects their personal goals.

Multidisciplinary primary care teams will require unique competencies that are not specific to professional specialization. Front-line workers will need to be able to establish a good rapport with patients and their family members in an empathetic and sensitive manner that respects the patient’s culture. They will need to promote patients’ entitlement to the best quality of care and empower them to participate as actively as possible in the management of their condition. They will also need to function effectively as members of an interprofessional team that includes patients and family members and is focused on health outcomes. Each member of the team should be able to demonstrate practice that is informed by the best available evidence and assess and continually improve the services delivered both as an individual provider and as a team member.

The policy brief on horizon scanning for human resources for health in the National Health Service in England (Box 1) summarizes an approach to developing a more systematic focus on the skills profile required of the future workforce.

In short, the challenge is to increase the total number of health workers available, while at the same time adjusting the composition of the workforce in line with current and future demands. This implies attracting suitable candidates to health professions and preparing them to function effectively, while also helping those already in the workforce

Figure 11.1. Task shifting





who were educated according to a different paradigm to adjust to the new care model. It also means focusing policy attention on understaffed occupations and improving retention.

Policies and interventions to increase the number of future health workers for NCD services and to optimize the utilization of the existing workforce include:

- scaling up the capacity of production of education institutions;
- reviewing, and where necessary, reorienting curricula to match NCD demands and interprofessional teamwork;
- implementing strategies specifically designed to attract, recruit and retain qualified candidates to health professions and programmes, especially in understaffed areas;
- broadening the scope of practice of certain cadres and considering the creation of new cadres;
- retraining, where necessary, existing staff; and
- possibly recruiting abroad.

Simply focusing on more of the same – training more workers with the same skills and qualifications as those already in the workforce – is not an effective or efficient option. Policy-makers for education and health must decide which types of human resources are needed, in what quantity, and with which competencies. Curricula and pedagogical methods will then require adaptation, with an emphasis on small-group learning, database mining, exposure to NCD services, and placements in rural, remote or underserved urban areas. As learning strategies are transformed, educators will have to adapt to new roles of mentor and coach.

Strategies will be required that are specifically designed to attract, recruit and retain qualified staff in areas where NCD-related training and service delivery have been neglected, such as geriatrics, mental health, public health, rehabilitation, oncology, primary care and palliative care. Retention can be enhanced by effective alignment with education opportunities and career paths, such as the model developed in Hungary. There is significant scope to expand the roles and scope of practice of some cadres, such as nurses (Browne, Birch & Thabane, 2012; Martínez et al., 2014; Maier & Aitken, 2016; Lovink et al., 2017; Maier et al., 2017), pharmacists (Tannenbaum & Tsuyuki, 2013) or other allied professionals (Bell & Davis, 2017) to free physicians from tasks that can be delegated at no risk to safety or quality of services.

These tasks can include monitoring chronic disease (for example through routine services such as low-density lipoprotein cholesterol laboratory work), and delivering prescriptions as specified in protocols and medical procedures (such as spirometry in patients with chronic

## England, UK

### Box 11.1 An example of horizon scanning

In 2015, the Department of Health and Social Care, England, published research that examined the long-range demand implications of NCDs and other categories of demand for workforce skills, up to the year 2035 (Centre for Workforce Intelligence, 2015). This research investigated the skills and competencies of the health and care workforce – broad categories of activity for different workforce roles and responsibilities – and how the demand for these activities may change across six future scenarios.

Key features of this approach include: the use of systems thinking methods to analyse the complex factors and forces that impact the system; the use of a system dynamics model to simulate how it might evolve; classification of workforce skills; and use of workshops to create six challenging but plausible visions of the future health and care system (futures that all health workforce planners can use to develop their thinking and ideas).

The approach was centred on mapping between the workforce groups, their skills, and the effort they deliver to meet various workforce demands. Skills were classified by type and level of intensity.

There were three key findings.

1. Demand for workforce time is growing faster than the population, with projections showing that demand for health and care workforce time could grow more than twice as fast as the overall population growth by 2035.
2. Over 80% of additional demand is driven by increasing health-care and support needs associated with long-term conditions and NCDs.
3. Growth in demand for lower levels of skill – such as those associated with unpaid care, support carers and staff working in lower-skilled occupational grades – are projected to substantially outstrip growth in demand for higher skill levels associated with medical and dental professionals.

Source: Edwards M (2017).

“Simply focusing on more of the same – training more workers with the same skills and qualifications as those already in the workforce – is not an effective or efficient option.”

obstructive pulmonary disease). This will require an examination of the scopes of practice to revise the current skill mix through task shifting or task sharing methodologies (WHO, 2008; Hoefl et al., 2017). There may also be scope to retrain some existing staff willing to reorient their career, for instance to work in primary care, in home care or in geriatrics. Full consideration will also, however, need to be given to potential barriers that may prevent nurses from working more effectively; these can include gender-based gaps in terms of pay and career opportunities, which continue to pose a major problem (see Chapter 5), or regulatory constraints. The example of the use of advanced nurse practitioners to care for the frail elderly in municipalities in Sweden is one illustration of the benefits and remaining challenges of the expansion of scopes of practice (Ljungbeck & Sjögren Forss, 2017).

Where “skilling up” and retraining is not feasible or sufficient, another option, with a longer period required to reach any scale of impact, would be to consider developing new cadres to undertake new roles and functions, such as coordinators and counsellors (de Carvalho, 2017) or to substitute existing cadres in some areas or activities, for example non-medical clinicians, such as physician assistants (Halter et al., 2013).

International recruitment may be a tempting option in countries with a rapidly ageing population and the capacity to recruit workers from abroad by offering attractive remuneration and working conditions. It should, however, be a last resort option, as self-sufficiency should be a priority. If international recruitment is pursued, it should always be framed by the WHO Global Code of Practice on the International Recruitment of Health Personnel (WHO, 2010a).

## Having “more” health workers is not a sufficient policy response; **they must also be more accessible**



Since most NCDs require long-term treatment and monitoring, people living far from urban specialized facilities need to have access to appropriate services in a timely and convenient manner. This is an imperative on grounds of equity of access and efficiency. The policy objective should be that at least first-contact qualified personnel be easily accessible, normally through proximity primary care services, and that specialized services also be accessible through telemedicine and other communication means, such as mobile devices. This is therefore a twin challenge: first, to extend, to the whole population, primary care services staffed with personnel competent in diagnosing NCDs, counselling patients, and referring to specialists as needed; and secondly, to recruit and retain staff in rural and remote areas.

The evidence of what works in terms of recruiting and retaining staff in rural or remote areas, and in achieving a more effective geographical distribution of staff is relatively well developed. In particular, WHO has published evidence-based guidelines (WHO, 2010b), which recommend that policy-makers consider interventions in four areas: education, regulation, incentives and personal and professional support. It is especially important to consider the gender aspects of working in remote areas, and partners and families’ needs and preferences. This critical policy message – that a bundle of policies rather than single interventions will be more effective in recruiting and retaining staff in rural, remote and underserved areas – has been conveyed in other studies (including Ono et al., 2014; Verma et al., 2016).

Specific policies to consider include: reviewing the criteria and procedures for recruitment of students to ensure that sufficient students from underrepresented and underserved areas are being considered; designing strategies and incentives (such as scholarships, writing off loans, mentorship schemes and career pathing) to encourage them

to practise in their area of origin; and decentralizing recruitment procedures for public service health workers to make their deployment more equitable.

Policy-makers should also consider designing packages of financial, professional, and family-friendly incentives to attract and retain health workers in underserved geographical areas. Such packages are more likely to be effective if they take into account the expectations and needs of each category of workers. These can be assessed using tools such as focus groups, staff surveys or discrete choice experiments – a tool that tests the willingness of future or existing health workers to accept a post in an area with recruitment difficulties (WHO, 2012).

If the introduction of compulsory community service is envisaged as part of a policy to recruit and retain staff, it should be designed as an opportunity for learning and acquisition of experience, under active mentoring and supervision, with transparent and equal conditions for all categories of health workers who are bound by such an obligation. The potentially disruptive impact on work–life balance of working on rotation must also be considered. A good example of increasing recruitment and retention of health workers in remote and isolated regions can be found in the Finnmark region of Norway, where a combination of strategies, such as those identified above, has been applied (Consortium, 2014).

Access can also be improved by supportive technology (Lapão & Dussault 2017). Making more intensive and innovative use of communication technologies (e-health/m-health) to connect staff in remote or isolated areas with specialists in facilities of higher complexity can im-

prove access and effectiveness, as illustrated by innovative practices in Denmark.<sup>18</sup> Where fixed infrastructure cannot be developed, there may also be scope to establish mobile teams of staff, or rotate staff through facilities for scheduled periods of time.

<sup>18</sup> See <http://www.smartaarhus.eu/projects/centre-telemedicine-and-telehealthcare> [accessed 22 January 2018].

Redesigning services based on staff in new or advanced roles can also improve access. One example of this is to expand home care services (Han et al., 2017; Randall et al., 2017), using visiting nurses, especially trained for that purpose (Doyle, 2017).



## The quality of the health workforce must improve for the provision of NCD services to be optimized and needs to be met

Acquisition of the right competencies by future health professionals and by those currently on the health labour market remains a challenge. Those already on the health labour market have mostly been trained to deal with acute conditions and provide curative services, whereas the new epidemiological, technological and organizational context requires additional competencies. The right skills are not only clinical but also include softer skills which are just as important, such as teamwork, case management, prevention coaching, use of communication tools, cultural sensitivity (Centre for Workforce Intelligence, 2016). The introduction of nurses in advanced roles with specific competencies to function effectively in primary care is an example of how quality can be enhanced. This is often enabled by legislation to allow nurses to prescribe. In recent years, developments in this regard have been made in several countries in Europe, such as Finland, Ireland and the United Kingdom (Box 11.2). Nurses in these roles can improve the quality and accessibility of care. See also Box 11.3.

It follows that there will be requirements for new education and training content, new pedagogical strategies, adapted infrastructures and equipment, additional and adequately prepared educators and trainers, and appropriate settings for clinical learning (Frenk et al., 2010; WHO, 2013b). As a result, the quality of training surveillance and assurance mechanisms will also need to be adapted.

If quality of care provided by the workforce is to be enhanced, policy-makers must recognize the strong connection with education and training. Education and continuing education programmes will need to be transformed, and functional accreditation mechanisms will be needed to verify that those programmes equip health workers – both in general practice and in specializations – with the competencies required to prevent, treat and manage NCDs. Accreditation should also cover the competencies of educators and trainers and the adequacy of infrastructures, equipment and clinical learning sites. Accreditation should be a formative process that helps education institutions improve their capacity to produce competent graduates. WHO's policy brief on accreditation of institutions for health professional education contains useful guidance on how to design and operate effective accreditation mechanisms (WHO, 2013c).

In terms of broader regulation, legislation and governance, the role and responsibilities of professional councils may need to be reviewed to ensure that they are effective in monitoring and are accountable for the quality and safety of the actions of their members, irrespective of where they work, as well as to identify any potential legislative or regulatory barriers to implementing new services and new roles in response to changing population needs. Policy-makers should adapt the organization and funding of services accordingly (Naylor, Taggart & Charles, 2017) and actively promote the integration and continuity of services to meet the needs created by the chronicity of numerous conditions. This can be enabled by creating new roles, such as care coordinators and self-management counsellors, to facilitate the functioning of these services (de Carvalho et al., 2017).

Figure 11.2. New health workforce competencies





## Workforce policy and planning, regulation and management **must be aligned with service planning and delivery**, and must support integrated teams rather than isolated individual health professionals

Policy interventions are known to be more effective when adequately combined (such as financial and professional incentives) than in isolation (OECD, 2016). The effective implementation of policies will require that certain prerequisites are met: a higher production of qualified health workers supposes the scaling-up of the capacity of education institutions, particularly by recruiting more educators and ensuring adequate sites for clinical residencies. Improved productivity requires a well trained and motivated workforce, an enabling work environment (for example with access to adequate tools), decent working conditions, competent management, incentives and payment systems (Eriksen et al., 2017), and even pay for performance mechanisms, which many countries have introduced in ambulatory and inpatient services, although evidence on their effectiveness is debated (Mendelson et al., 2017; Milstein & Schreyögg, 2016; see also Chapter 12). To attract and retain students and professionals in understaffed service areas or underserved geographical zones, effective incentive systems are required; competent planners and managers are needed to make the organization of services more effective and efficient. Political authorities must also be committed to ensuring equitable access to NCD services and must engage stakeholders in designing and implementing interventions.

Strategic planning is a powerful tool for achieving improving availability, accessibility and quality. This can take the form of anticipating future needs (workforce, competencies, skills-mix, numbers), and

analysing the implications of different possible scenarios. Rational planning, based on valid and reliable data and information, is key to making informed decisions about the future workforce. This is critical because decisions taken now will have consequences for decades to come. Good planning is also needed to adapt and optimize utilization of the existing health workforce. Regulation and management are the main tools to create an enabling environment in which health workers can better respond to the needs of people with NCDs and help others prevent them.

To implement these policy options, it is recommended that policy-makers:

- create (or strengthen) the capacity to collect and analyse epidemiological and demographic data, and information on the health workforce for horizon scanning (Centre for Workforce Intelligence, 2016), research and scenario building, and policy advice to support planning, through the services of an observatory (or a network of observatories in federal countries, such as Brazil), preferably based in an independent research institution to ensure transparency and freedom from interference by interest groups;
- invest in building a health workforce database so that policy choices are based on valid, reliable and up-to-date information;
- support data owners, such as professional councils and associations, and organizations that provide health services in developing and maintaining harmonized information systems for human



## Box 11.2 New roles in nursing

Expanding nurses' scope of practice can help fill gaps in primary care, improve the quality of care – particularly for patients with NCDs – and alleviate provider shortages. These primary care and workforce drivers are acting to shift the traditional role boundaries between physicians and nurses and other health professionals. Nurse practitioners and other advanced practice nurses typically take care of the common or stable NCDs, including through monitoring and regular check-ups, routine treatment and secondary prevention, while physicians normally focus on complex NCDs and patients with multimorbidity. Systematic reviews suggest that the quality of nurse practitioners, advance practice nurses and other nurses working in advanced roles is at least equivalent to that of physicians, and that when nurses work in advanced roles, patients tend to receive information more frequently and patient satisfaction improves.

A recent snapshot survey of the extent and pattern of use of nurses in nurse practitioner and advanced practice nurse roles in 39 countries, (including 35 in Europe) found that more than two-thirds of those countries had expanded nurses' official scope of practice in primary care (Maier, 2015; Maier & Aitken, 2016). Most nurses work in advanced roles within teams, with various levels of physician oversight. Primary care teams in the early phases of introducing advanced nursing roles commonly revisited and reallocated responsibilities between professions to effectively and efficiently care for patients according to their care needs and complexity. In 11 countries, including seven from Europe, extensive task shifting was seen, whereby nurse practitioners and advance practice nurses were authorized to work at high levels of advanced practice, measured by all seven listed clinical activities.

Governance and regulation are critical policy levers in enabling nurses to practice in advanced roles; without official authorization of expanded scope of practice, they cannot legally practice in these roles in routine care. Adapted payment policies are also important for nurses working in advanced roles as they determine whether services will be reimbursed and at what level. Most nurse practitioners and advance practice nurses work together with physicians and other professionals in primary care teams, which requires a reallocation of roles and responsibilities.

Source: Adams E et al. (2017).

resources for health (using common definitions, time and frequency of data collection) that are easily accessible, to provide an overview of human resources for health supply and demand, and help identify gaps to be filled;

- mobilize main stakeholders to develop responses to NCD-related challenges for the health workforce as part of a national plan that sets out future human resources requirements based on population needs and new care models, sets objectives and strategies, and outlines the resources required;
- design a roadmap that specifies allocation of responsibilities, sequence of actions, and time frames;
- use a standardized data analysis template, minimum data set or national health workforce accounts (WHO, 2017) to keep track of progress in implementing the human resources for health plan, and adjust the plan as needed; and
- ensure that health services have professional managers who are able to manage integrated multidisciplinary teams and coordinate services across the spectrum of prevention, promotion, care and rehabilitation. Redefined managerial roles will involve new training modalities and selection criteria, based on demonstrated capacities.

The Irish National Strategic Framework for Health and Social Care Workforce Planning (Irish Department of Health, 2017) is an example of a recent strategy to scale up planning capacity in health and social care.



# CONCLUSION

To successfully implement the policy options described in this chapter, certain prerequisites must be met. Increasing the number of qualified health workers, for example, will mean scaling up the capacity of education institutions, particularly by recruiting more educators and securing more adequate sites for clinical residencies.

Improved productivity requires a well trained and motivated workforce, and an enabling work environment with access to adequate tools, decent working conditions, competent management and incentives. To attract and retain students and professionals to understaffed service areas and underserved geographical zones, effective incentive systems must be in place. Competent planners and managers are needed to organize services more effectively and efficiently. Political authorities must also be committed to ensuring equitable access to NCD services and engaging stakeholders in designing and implementing interventions.

Overcoming the challenges related the health workforce is not an exact science; it requires consideration of a complex policy framework, such as the one set out in the Global Strategy on Human Resources for Health: Workforce 2030 (WHO, 2016) and the subsequent Regional Framework for Action of a Sustainable Health Workforce (WHO, 2017b). It is an exercise in selecting policy options that fit country context and identified priorities, are consistent with needs, and are economically, organizationally, politically and socially feasible.

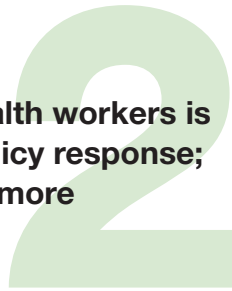
The art of policy-making is then to combine strategies and interventions that have a high probability of effectiveness, are affordable, are agreed by the main stakeholders, are acceptable to the population and service providers, and for which implementation capacity already exists or can be developed. Although the task is demanding, the rewards, if well executed, in terms of population well-being and more efficient use of resources, are well worth the effort. For key messages and policy responses, see Table 11.1.

**Table 11.1. Overview of key messages and policy responses**

Key messages	Policy responses
<p><b>The supply of human resources for health must be improved using two main strategies: training "new" workers in the correct competencies to meet NCD demands; and utilizing current workers more effectively</b></p>	<ul style="list-style-type: none"> <li>■ Scale up the production capacity of education institutions.</li> <li>■ Review and where necessary reorient curricula to match NCD demands with a focus on a multidisciplinary approach.</li> <li>■ Implement strategies to attract, recruit and retain qualified staff in NCD-related training and service delivery neglected areas.</li> <li>■ Expand the scope of practice of certain cadres to free physicians from tasks that can be delegated at no risk to safety or quality of services.</li> <li>■ Consider the creation of new cadres to exercise new roles and functions where “skilling up” is not feasible or sufficient.</li> <li>■ Retrain some existing staff willing to reorient their career, for instance to work in primary care, home care, or geriatric care.</li> <li>■ Recruit abroad as a last resort and using WHO guidance, as self-sufficiency should be a priority.</li> </ul>

## Key messages

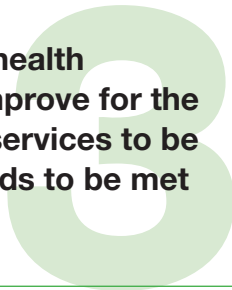
**Having “more” health workers is not a sufficient policy response; they must also be more accessible**



## Policy responses

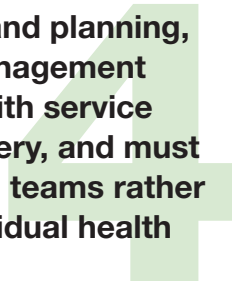
- Extend primary care services, staffed with personnel competent in NCD diagnosis, patient counselling and referring to specialists as needed.
- Review criteria and procedures for recruiting students to ensure that those from under-represented and underserved areas are given equal consideration, and design strategies and incentives (scholarships, loan “forgiveness”, mentoring, career paths) to encourage them to practices in their area of origin.
- Decentralize recruitment procedures for health workers in public services to make their deployment more equitable.
- Design packages of financial, professional, and family-friendly incentives to attract and retain health workers in underserved geographical areas.
- Make more intensive and innovative use of communication technologies.
- Expand home care services, using visiting nurses who are especially trained for that purpose.
- Develop mobile services in exceptional cases when setting up fixed infrastructures is not justified.
- If the introduction of compulsory community service is envisaged, ensure that it is designed as an opportunity for learning and gaining experience.

**The quality of the health workforce must improve for the provision of NCD services to be optimized and needs to be met**



- Set up functional accreditation mechanisms.
- Promote the integration and continuity of services to meet the needs created by the chronicity of many conditions.
- Create new roles, such as care coordinators and self-management counsellors, to facilitate the functioning of such services.
- Adapt the organization and funding of services accordingly.
- Review the role and responsibilities of professional councils and make them accountable for the quality and safety of the actions of their members irrespective of where they work.

**Workforce policy and planning, regulation and management must be aligned with service planning and delivery, and must support integrated teams rather than isolated individual health professionals**



- Create (or strengthen) the capacity for information collection and analysis, of horizon scanning, research and scenario building and policy advice to support planning.
- Invest in the building of a health workforce database.
- Mobilize stakeholders in developing responses to NCD-related challenges for the health workforce.
- Design a roadmap that specifies distribution of responsibilities, sequence of actions and time frames.
- Use national health workforce accounts to keep track of progress in implementing the human resources plan.
- Professionalize the management of health services to ensure that there is capacity to manage integrated multidisciplinary teams and coordinate services across the spectrum of prevention, promotion, care and rehabilitation.

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# 12

## **Health financing strategies**

to support scale-up of core  
noncommunicable disease  
interventions and services

**Melitta Jakab  
Tamas Evetovits  
David McDaid**



# Agenda for action

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**Reasonable levels of public funding** need to be allocated to health-improving activities

1

2

**More explicit criteria should be used** to prioritize the health budget linked to development and health objectives

An outcome-oriented approach is needed **to fund intersectoral actions** and address misalignment of incentives across sectors

3

4

**Incentives should be aligned and optimized** across the service delivery interface to reinforce a service delivery model oriented to population outcomes

## Motivation

Previous chapters have presented ambitious agendas for transforming public health, primary care and specialist services to scale-up core NCD interventions and services. Health financing arrangements (revenue collection, pooling, purchasing and benefit design) are powerful enablers of such transformation, ensuring availability of funding for the right services at the right time, and providing behavioural incentives.

Unfortunately, however, health financing arrangements in many countries not only do not facilitate transformative agendas but may actually hinder them, as shown in Chapter 5. The following issues pose a particular challenge when it comes to scaling up core NCD interventions and services:

- **significant underfunding of health systems** in several European countries, in particular for prevention and health promotion;
- **lack of explicit priority-setting processes**, which undermines governments' ability to allocate resources in line with stated policy objectives and targets, and results in ineffective governance arrangements for holding actors accountable for results;
- **ineffective models to fund population interventions**, including intersectoral action, and limited use of incentives to promote health promotion and preventive activities; and
- **misaligned incentives** throughout the individual service delivery network, which undervalue health promotion and prevention, reinforce specialist and hospital orientation of care provision and episodic rather than continuous care.

In this chapter, we propose four key policy messages for a more effective health financing strategy to address these challenges in a comprehensive and aligned health system response to NCDs. Each message aims to provide specific policy recommendations, while recognizing that at this particular time there may not be clear evidence or consensus in some policy areas. In such cases, we have set out the advantages and disadvantages of the various options for consideration.

We take the view that financing strategies for NCDs cannot be separated from financing strategies for the health system as a whole. The concept of funding NCD interventions per se suggests a vertical, programme-based approach and is at odds with sustainability and systems thinking. Throughout the chapter, we consider overall health system financing strategies that support the scale-up of core NCD interventions and services rather than talking about funding NCD interventions directly in a narrow sense. In more practical terms, this means identifying revenue-raising and pooling arrangements to ensure sufficient health revenues, prioritizing these revenues and considering the implications of how they could be allocated to the organizations and individuals expected to deliver core interventions and services. The approach has to be holistic and the case for investment needs to be strong, whether for NCDs or for other areas. The strategies we propose will therefore be helpful not only for scaling up NCD-specific interventions, but also for improving all health outcomes where service delivery strategies are based on health promotion and prevention through intersectoral action (such as road safety) and on integrated primary care centred service delivery (such as maternal and child health and tuberculosis care).

## Reasonable levels of public funding need to be allocated to health-improving activities



**Key Message**

### Ensuring sufficient fiscal space for health

There is a strong business case for investing in health, and in NCD interventions in particular. Yet insufficient funding remains one of the most frequently noted obstacles to progress. The overall funding envelope for NCDs comes from the budgets of the health sector and other sectors engaged in intersectoral activities that affect – among other social objectives – NCD outcomes. In this chapter, we will focus on the former in key messages 1 and 2, and on the latter in key message 3. If a health system is underfunded in general, NCD interventions will certainly be underfunded. A united effort by all stakeholders in health and welfare is therefore needed to secure sufficient fiscal space for health, with appropriate priorities and effective mechanisms for resource allocation and purchasing, to ensure equity and efficiency.

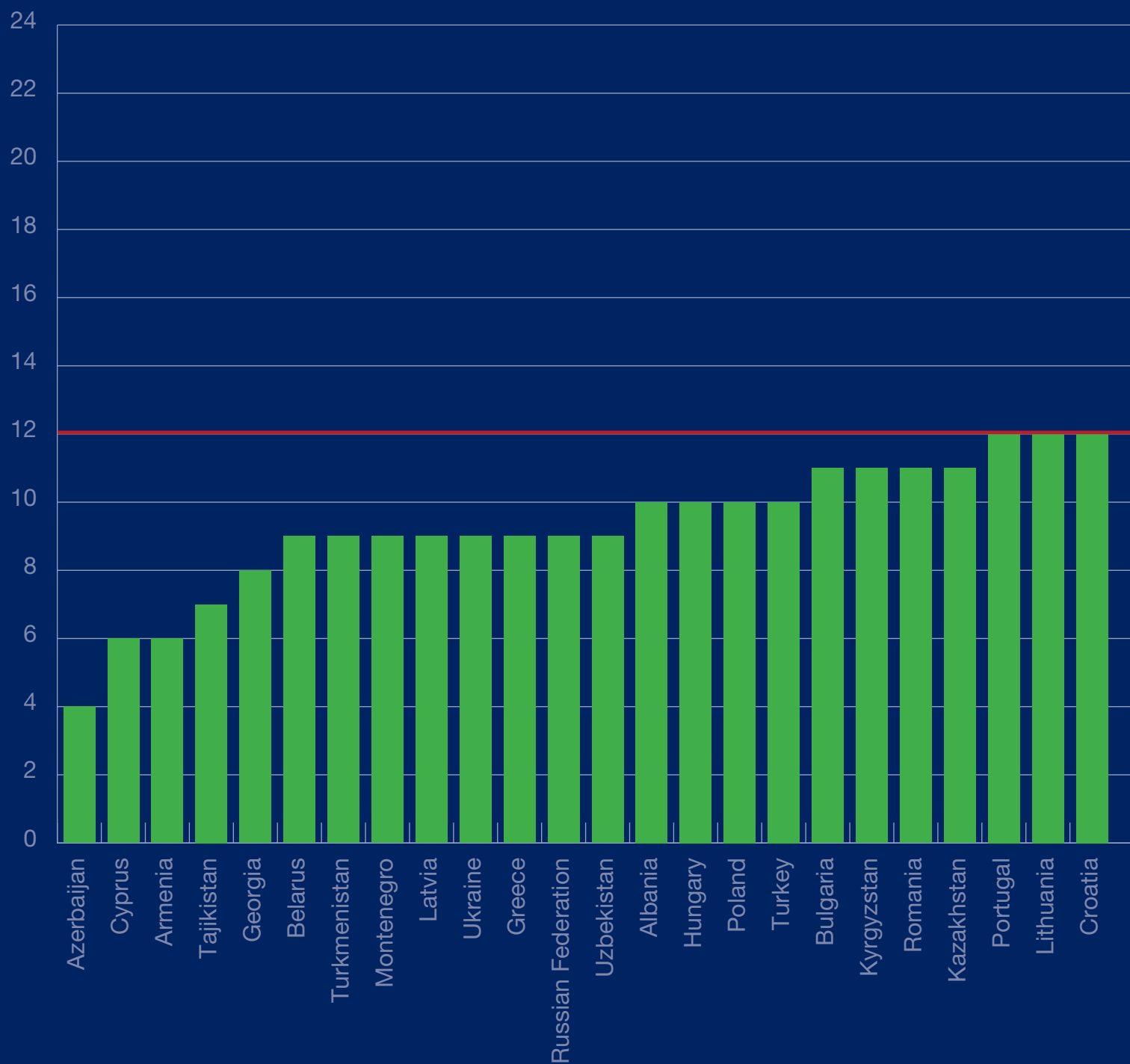
To understand policy options for increasing government spending on health, it is helpful to decompose government spending on health into two factors: overall fiscal space (how much public revenue countries want to and can collect through taxes and other fiscal instruments); and the decision to allocate these funds across sectors and in particular to health. The former will depend on the size of government, the degree of economic development and the strength and transparency of public institutions, and can only grow with long-term economic and institutional development, while the latter is an annual policy decision and therefore more amenable to change in the short run. It is important for health stakeholders to engage in dialogue on both of these factors: to support overall taxation efforts that ultimately benefit the sector on the one hand, and to participate in a fiscal dialogue about resource allocation on the other.

Government spending on health in the WHO European Region ranges from 4% to 22% of overall national budgets, reflecting substantial variation in priorities and commitments (see Figure 12.1). When it comes to considering what proportion of public funding should be allocated to health, there is no universally accepted standard. Furthermore, some aspects of health system responsibility lie outside the health system and health budget (including children's health, long-term care and welfare) and therefore add to the complexity of this matter.

There are, however, guidelines on what constitutes too little. In the WHO European Region, when a government spends less than 12% of its budget on health, more problems are reported regarding access to quality care and weaker financial protection (Thomson et al., 2018, in press). Other signals of underfunding may also be documented, such as informal payments, lack of supplies and medicines, gaps in staffing, service dilution and waiting lists. Since public health and health promotion are more likely to suffer from disproportionately low funding when fiscal space is tight (see Chapter 7), significant underfunding will ultimately impact on the health of the population (Bokhari, 2007; Moreno-Serra & Smith, 2015).

Over the past decade, the priority given to health in national budgets has increased slightly in high-income countries in the European Region, and now averages just above 14% (see Figure 12.2). In upper middle-income countries, on the other hand, government spending on health has reduced to an average of 10% of national budgets. These contrasting trends have widened the gap in prioritization of health in government budgeting processes between high- and upper middle-income countries. Despite lower middle-income countries having the most constrained fiscal space, the priority given to health in their national budgets has increased significantly over the past decade.

Figure 12.1. General government spending on health as a percentage of overall government spending, 2014



EURO 49: WHO European Region Member States; data for Israel missing and three small countries excluded.  
 Source: WHO Global Health Expenditure Database, 2017.

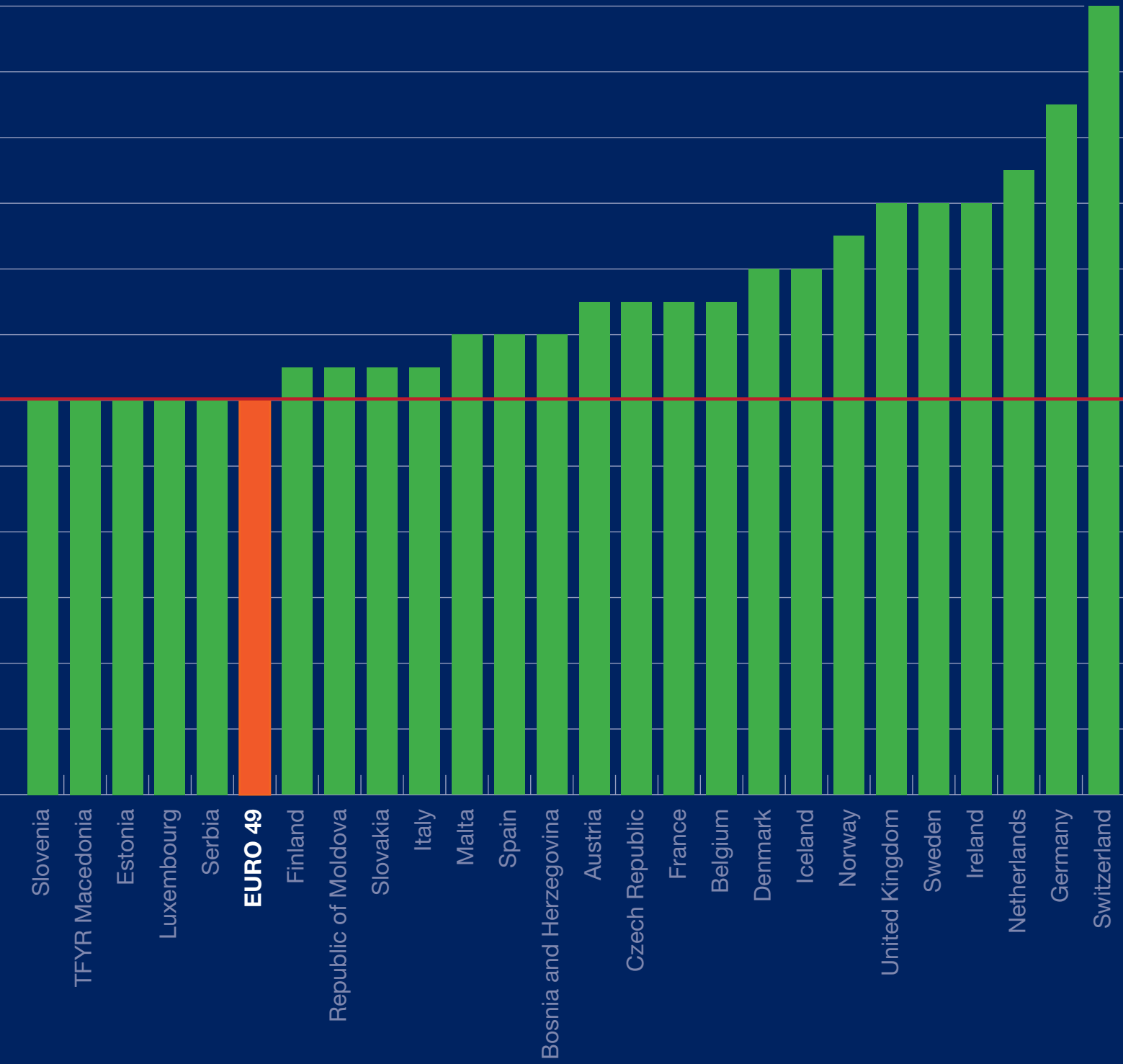
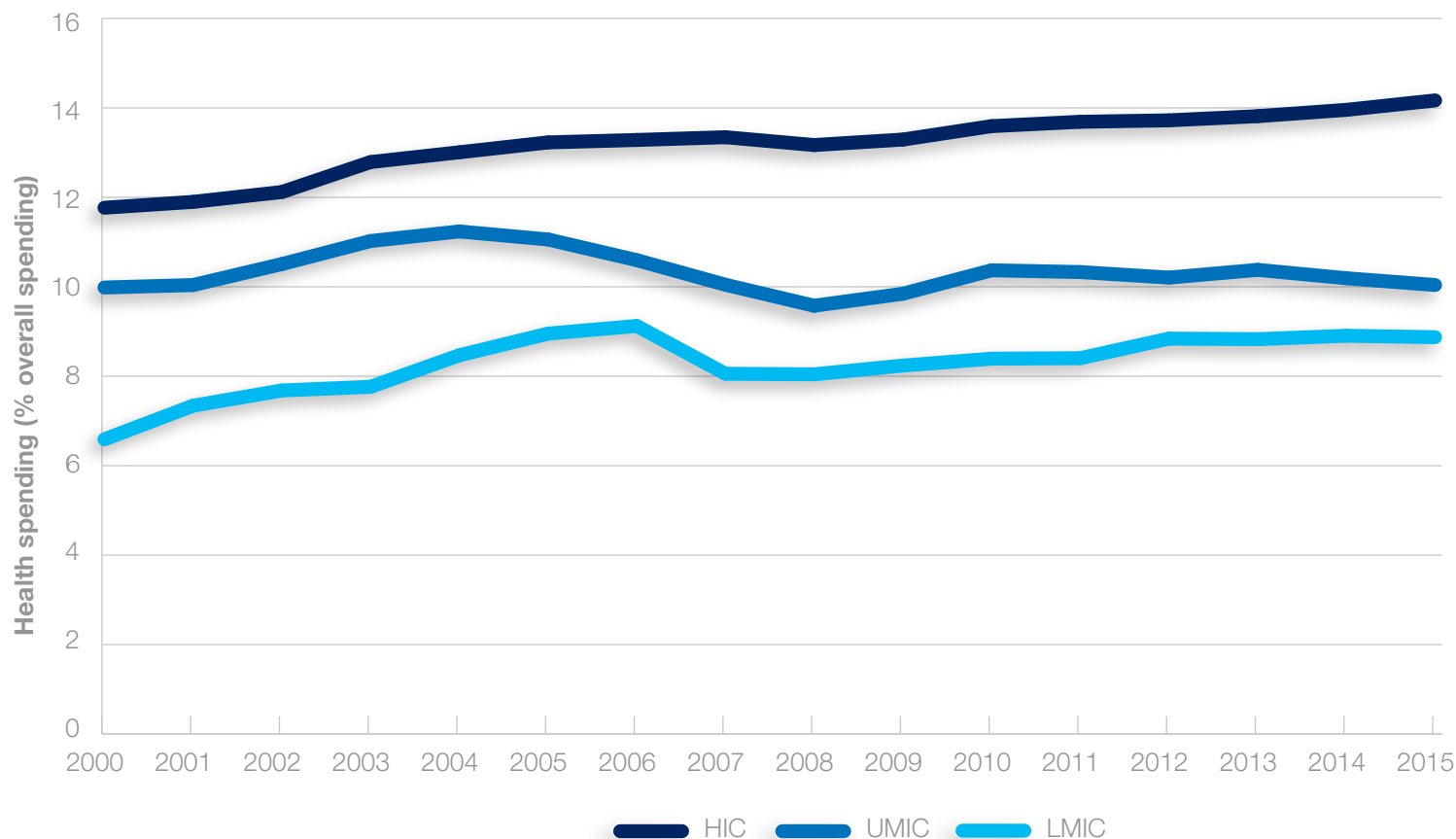


Figure 12.2. General government spending on health as a percentage of overall government spending, 2000–2015



Source: WHO Global Health Expenditure Database, 2017.

Note: HIC = high-income countries, UMIC = upper middle-income countries, LMIC = lower middle-income countries.

Irrespective of the proportion of government funds allocated to health, a comprehensive approach is essential to efficiently translate funding into better health outcomes. The dual strategy of “more money for health and more health for the money available”, which emphasizes efficiency gains, is critically important for addressing NCDs. In many health systems, resource allocation decisions at the subsystem level are implicit. They follow historical patterns and may still be linked to existing structures and staffing, and therefore do not always reflect present needs. In such systems, funding does not translate automatically into core services and interventions. This means that in addition to advocating for reasonable fiscal space for health, a much stronger push must be made to develop more transparent and effective priority-setting processes (key message 2) and resource allocation mechanisms to ensure that the additional funds benefit the interventions and services that can have the greatest impact (key messages 3 and 4).

Beyond these general recommendations, however, individual country context is essential when identifying an appropriate priority-setting strategy. As the four country vignettes in Box 12.1 show, the extent of fiscal space, prioritization of health in government spending, extent of efficiency gains already harnessed, and attainment of outcomes all interrelate in a complex manner. This means that an appropriate balance must be struck between advocating for new funding, and optimizing the use of existing funds. Increasing government funding may not always be at the frontline of that strategy. In some cases, while there may not be any scope for expansion of fiscal space, there may be scope to improve outcomes through efficiency gains (see Kyrgyzstan). Alternatively, health may already be a high priority in the government budget with excellent outcomes, which means that the task for the future would be to sustain those outcomes (as is the case in Spain and Sweden). There are unequivocal cases, however, where obvious efficiency gains have been achieved and any further improve-

## Box 12.1 Context of revenue generation in four countries

### Latvia

The Latvian Government spends less 10% of its resources on health. Latvia's premature mortality rate for NCDs is at the upper end of the range for high-income countries. Low spending translates into gaps in resources for core interventions and services, and in coverage (WHO Regional Office for Europe, 2017a). Coverage of cost-effective medicines in particular is low and contributes to the high financial burden and access barriers that ultimately impact on effectiveness. Latvia has squeezed its system to deliver outcomes through efficiency gains. The good news is that there is fiscal space to increase health spending. With strong priority-setting and purchasing arrangements, the allocation of additional funds will have a significant and swift impact on NCD outcomes and financial protection.

### Sweden

With one of the lowest premature mortality rates in the WHO European Region, Sweden is universally acknowledged as having a strong health system embedded in a strong welfare state. Sweden's focus on intersectoral approaches and equity-enhancing policies is of great interest to the rest of the Region. Regarding financing, Sweden spends 18% of its State budget on health. This proportion of funding not only translates into excellent health outcomes through strong priority-setting but also enables good and timely quality of care to be provided in a manner that responds to user expectations. The task for the future will be to maintain these outcomes at an affordable cost.

### Kyrgyzstan

In Kyrgyzstan, the priority given to health in government spending increased from below 10% in 2010 to 13% in 2015 (Data based on calculations by the Government of Kyrgyzstan, not the WHO GHED). Increased funding has resulted in improved services for several reasons, including better priority-setting with increased funding for primary care, population- and output-based purchasing mechanisms and enhanced primary care and community outreach (Jakab & Manjieva, 2008). Although this has translated into improved NCD outcomes, there is room to improve further by scaling up population interventions and individual services (WHO Regional Office for Europe, 2015a). There is, however, consensus that there is no more significant fiscal space to increase allocations for health in the medium term and thus efficiency gains must be at the heart of the health financing strategy. There is evidence of inefficiencies that need to be addressed as the next step in improving system performance.

### Spain

Outcomes for premature NCD mortality in Spain are among the best in the European Region. The Government allocates 15% of its overall spending to health. Great attention has been paid to enhancing efficiency, partially necessitated by the financial crisis. Spain increasingly implements population interventions and intersectoral approaches with attention to redressing inequalities. Its strong multidisciplinary primary health care is well known throughout Europe, as is its approach to a streamlined and well regionalized specialist care. The efficiency of the Spanish system is demonstrated by low numbers of avoidable admissions for NCDs such as coronary heart disease, chronic obstructive pulmonary disease and diabetes (OECD, 2017). Maintaining a balanced approach between prioritizing health, focusing on efficiency gains and allocating funding to effective interventions and services have contributed and will continue to contribute good outcomes at reasonable cost.



ment in outcomes will be difficult without additional funding for scaling up interventions and services (such as in Latvia).

## Making a better business case to invest in health

A potentially effective way to increase the priority given to health spending in the government budget would be to invest in capacities to make a better business case for health. In many countries, the health sector has not generally been a strong negotiator in the annual budget process, and investing in capacity to make the business case for health has not been a priority. Against that background, cross-sectoral dialogues between health and finance were often unproductive, did not reflect the pursuit of the common goal of societal welfare, and lacked mutual understanding of perspectives. To move towards a more collaborative and productive approach, with equality of voice and perspectives, ministries of finance need to recognize the economic and social costs of illhealth and the adverse effects of the high financial burden on the population caused by direct payments. Ministries of health need to make a stronger case for investing in health and focus on potential efficiency gains as a source of funds. Demonstrating the economic and social dividends of investing in health and reducing inequalities, showing the benefits of efficiency gains already made, and having a multiyear plan for addressing remaining inefficiencies will enhance the credibility of the health sector among economists and public financing experts in the negotiation process.

The business case for investing in NCD interventions and services is particularly strong, with general agreement on three points: the economic consequences of NCDs are staggering; costs of scaling up core interventions and services are low compared with the costs of their burden; and the returns on scale-up are enormous (World Economic Forum, 2015; WHO & UNDP, 2016). These three points can form the basis of arguments in country-specific business cases. Importantly, significant benefits of investment in health occur beyond the health system, for example a more productive population and fewer sick days taken, which results in greater economic growth better educational attainment, among others (McDaid & Park, 2016; McDaid, Sassi & Merkur, 2015; Devaux & Sassi, 2015; Leal et al., 2006; Luengo Fernandez, Leal & Sullivan 2012). The returns on investment are particularly significant in upper middle-income countries with high premature mortality from cardiovascular disease or a fast growing NCD burden (Schuhrcke et al., 2007; Chisholm et al., 2011).

■ **Globally**, the projected cumulative lost output from NCDs for the period 2011–2025 is US\$ 7 trillion in lower middle-income countries, which equates to roughly 4% of annual GDP. This far outweighs the

estimated US\$ 11.2 billion cost of implementing core NCD interventions and services in those countries (WHO & UNDP, 2016).

- In the **European Union**, NCDs result in the premature death of some 550 000 people of working age every year. This represents a loss of 3.4 million potential productive life years and amounts to a loss of 0.8% of European Union GDP. In addition, the equivalent of 1.7% of European Union GDP is spent on sick leave and disability payments each year (OECD, 2016). This is on top of the direct treatment costs associated with NCDs.
- Although there are no comprehensive estimates for the **eastern part of the WHO European Region**, high rates of premature mortality (which is more pronounced among men) suggest that the labour market impact of NCDs is high and the returns on investment would therefore be even greater. In Belarus, Kyrgyzstan and Turkey, for example, business cases for investing in NCDs have recently been developed, for use in the budgetary process and to inform parliamentarians. All three countries experience a considerable economic burden from NCDs and are therefore likely to see significant returns from scaling up NCD core interventions and services (WHO Regional Office for Europe, 2017b; WHO Regional Office for Europe, 2018 in press; WHO Regional Office for Europe, 2018 forthcoming; see Table 12.1).

To ensure sustainability and long-term impact, these approaches need to be institutionalized in routine budget formation through a mandated process, and credible evidence needs to be presented to policy-makers in a comprehensive and accessible manner. There must also be the political know-how to communicate these messages to an audience not versed in the intricate details of public health and the health system. Investment in that regard is therefore essential to strengthen health system governance. Recognizing the great potential in this area, the Organisation for Economic Co-operation and Development (OECD) explicitly promotes and supports dialogue, and has created the Joint Network of Health and Budget Officials on the Fiscal Sustainability of Health Systems. Annual Network meetings at the global and regional levels bring together health and budget officials to discuss key issues affecting the sustainability of health systems and to exchange perspectives on budgeting processes in OECD member States. The Network has been widely regarded as a successful partnership for overcoming well known sectoral divides. Its success has prompted other organizations to join and create similar networks in other subregions and regions.<sup>20</sup> The WHO Regional Office for Europe

<sup>20</sup> <http://www.oecd.org/gov/budgeting/sbnetworkonhealthexpenditures.htm> (accessed 28 February 2018).

**Table 12.1. Economic costs of NCDs and return on investments in three countries**

	Belarus	Kyrgyzstan	Turkey
Costs	% of GDP	% of GDP	% of GDP
Direct health-care costs of NCDs*	0.27	0.82	1.27
Indirect costs of NCDs (loss from premature death, absenteeism and presenteeism)**	5.13	3.1	2.31
Overall cost of NCDs	5.4	3.9	3.6
<b>Return on investment at 15 years</b>			
Salt reduction	94	12.3	88
Tobacco control	31.1	3.8	5
Alcohol control	12	-	0.6
Physical activity awareness	5.2	3.6	2.3
Cardiovascular diseases and diabetes clinical interventions ***	0.6	0.01	4.3

Source: WHO Regional Office for Europe, 2017b; WHO Regional Office for Europe, 2018 in press; WHO Regional Office for Europe, 2018 forthcoming.

\*NCDs include cardiovascular disease, chronic respiratory diseases, diabetes and cancer, unless otherwise specified.

\*\*In calculating the indirect costs of absenteeism and presenteeism in all three countries, the indirect costs of chronic respiratory diseases and cancer were not included.

\*\*\*Diabetes was not included under the clinical interventions package in Kyrgyzstan.

has joined forces with OECD to increase the number of countries covered in the Network and to support joint subregional meetings.

## Engaging in long-term fiscal dialogue and strengthening the budget process

So far, this chapter has described complex systemic changes to achieve a shift in funding in favour of the health system, which would also have a positive impact on NCDs. From the perspective of wanting to have a greater and faster impact on NCDs, however, these changes are complex, have long horizons and require public funding investments in capacity and institutions. Calls for simpler solutions are increasing, such as leveraging consumption taxes related to NCD risk factors and earmarking them for health-enhancing activities.

The public health impact of consumption taxes on tobacco, alcohol, and nutrition is unequivocally significant; tobacco tax at 75% of retail price has proven the most consistent and cost-effective way to reduce tobacco use. These taxes also yield significant additional revenue for government budgets and therefore represent a win-win policy instrument for public health and public finance (WHO, 2016a).

At the same time, partially or fully earmarking these types of tax revenue for health is controversial and has generated considerable debate (WHO, 2016b; Cashin, Sparkes & Bloom, 2017). Earmarking is a budgetary practice whereby the proceeds of a tax are designated for a particular purpose (expenditure). In the WHO European Region, examples include the earmarking of tobacco tax for the health system and public health in Poland (until 2015b) and Romania (WHO, 2016a), and tax on unhealthy foods and drinks, introduced in Hungary in 2011 (WHO Regional Office for Europe, 2015). Earmarking can take many forms and its impact depends partly on its design features. How it is integrated into the annual budget and public finance management processes is also important. “Hard” earmarking is when designated funds to some extent bypass budget formation controls (such as parliament) and public finance management controls (such as the treasury), while “soft earmarking” is when tax proceeds go through the treasury and are subject to annual parliamentary review.

There are several potentially positive effects of earmarking consumption taxes from tobacco, food and alcohol for health. It may improve the allocative efficiency of public spending by linking taxes to the provision of services or benefits that are proven to be cost-effective and

are currently underprovided, such as using the revenue from tobacco excise taxes for smoking cessation or prevention activities. It may also improve public acceptance of taxes (Bird, 2015; Doetinchem, 2010). This is particularly important for tobacco tax, where progress has been slow, despite overwhelming evidence. Earmarking tobacco tax revenues for health can be a useful economic tool to build consensus and garner political support (WHO, 2016a). Finally, in contexts of rigid public financial management systems, if tax revenues are channelled into extrabudgetary funds for health promotion and prevention, there can be more flexibility in the types of activities funded (WHO, 2016a).

Aside from these positive attributes, there is less consensus with respect to the impact of earmarking in increasing fiscal space for health. In contexts where budgetary priority-setting is weak, the introduction of earmarked revenues has mobilized resources for previously underfunded health-related activities (such as health promotion and mental health) (WHO, 2016a). It is important, however, to note that earmarking of a particular tax may not improve the fiscal space for health overall because other sources of funding from general budget revenues may be reduced by the same or an even greater amount, thus offsetting any potential gains (Cashin, Sparkes & Bloom 2017; Bird, 2015; Kutzin et al., 2007). Earmarking may therefore solve one problem (providing greater funding for NCD prevention) while creating another (reducing the overall funding envelope for other health activities). It can also cause fragmentation in pooling arrangements, thus undermining the possibility of redistributing to activities that have a greater impact on health or equity (Cashin, Sparkes & Bloom, 2017; Kutzin et al., 2007).

Earmarking can fragment and undermine transparent budget formation processes linked to criteria based on social policy objectives. Hard earmarking in particular, where designated funds bypass budget formation controls (parliament) and public finance management controls (treasury) may contribute to reduced transparency.

Overall, earmarking alone does not solve the problem of generating sufficient resources for health, and, in some cases, it may even do the opposite. Building and strengthening comprehensive fiscal dialogue and a transparent, evidence-informed budget process should therefore remain a key health financing policy priority for all stakeholders. Those involved in NCDs can be strong advocates for this policy direction. Earmarking can, however, contribute to garnering greater political support for public health taxes and, through this, marginally increase fiscal space for health. In this case, it is important to use earmarking for activities or programmes of high national priority, in order not to undermine the overall objective of strengthening the public finance dialogue and priority-setting. Earmarking practices should remain as close as possible to standard budget processes: “softer earmarks with broader expenditures purposes and more flexible revenue-expenditure links” (Cashin, Sparkes & Bloom, 2017). Earmarking could perhaps be effective in areas where it can catalyse significant change in previously underserved areas, populations and conditions, such as health promotion and mental health, for which channelling regular budget funds might be problematic and may not have popular support. Finally, measuring the effective use and impact of earmarked funds is an important means of strengthening accountability.



## More explicit criteria should be used to prioritize the health budget linked to development and health objectives

Establishing an effective revenue generation strategy and ensuring sufficient fiscal space are only the first steps towards ensuring that the funding allocated to health is translated into the right services, for the right people, at the right time, and that those services impact on outcomes. According to a recent OECD review, one fifth of health spending could be channelled to better use.

In other words, this spending delivers no benefits, or worse still causes harm, and lower-cost alternatives are not adopted (OECD, 2017). There are many such examples related to NCDs, including failure to reach the target audience with health promotion and prevention, late detection of hypertension, insufficient coverage of cancer screening programmes, unnecessary hospitalizations for hypertension, diabetes, and chronic obstructive pulmonary diseases, excessive and repeated

diagnostics and testing, delays in response time for stroke beyond the window of effectiveness, intermittent use of cost-effective chronic medicines, among others. Several policy instruments affect whether funding is spent on measures to improve outcomes, including prioritization of health budgets, purchasing and service delivery arrangements, clinical practices, medicines coverage and other policies.

Reflecting health and development priorities in the health budget is an important policy direction for strengthening the linkage between resources spent and outcomes achieved (see Box 12.2).<sup>21</sup> There are, however, several challenges in this regard. First, the process for setting policy priorities is often separate from the process of setting budget directions and ceilings. Health budget officials may not be able to bridge this gap; insufficient decision rights, timing of the budget process and lack of capacity have been noted as key obstacles. Second, weaknesses in revenue planning and tax administration may lead to ad hoc adjustments and create an unpredictable and unstable budget. Third, there is a particularly weak link between budgets and services where budget formation occurs primarily on the basis of input-based line-item categories. This approach favours maintaining the status quo in resource allocation patterns and service delivery arrangements, even if they are inefficient and inequitable, since these criteria do not surface in budget allocation discussions. It also lacks the flexibility to shift expenditures as needs change or savings occur, and can lead to underspending and inefficiency. These factors make systemic transformation requiring shifts in resources difficult to discuss and implement.

Challenges related to misalignment of resources and policy priorities are particularly relevant for NCDs. Other chapters of this report note several areas where a significant shift in resources would be needed to achieve the desired transformation and scale-up of services. Chapter 6 highlights the need for sustainable financing arrangements for cost-effective intersectoral action. Chapter 7 notes the historical underfunding of health promotion and disease prevention activities, which undermines efforts to switch health systems' focus from cure to prevention. Chapter 8 calls for complex multidisciplinary team-based primary care, requiring investments and operational resources. Chapter 13 highlights the lack of effective coverage in several countries for cost-effective NCD medicines to prevent costly acute complications. Although these measures for health system strengthening would go a long way towards scaling up NCD interventions and services, they are difficult to reflect in the budget process in contexts where prioritization of the health budget is not based on explicit criteria and not reexamined regularly. This applies equally to settings with line-item and programme-based budget formation approaches. Admittedly, there

<sup>21</sup> See Cashin, Sparkes & Bloom (2017) for a more comprehensive treatment of alignment of public finance and health finance through the entire budget cycle including budget formation, execution and monitoring.

## Box 12.2 Benefits of aligning public finance arrangements with policy priorities

**Health sector policies and priorities are reflected in the budget.** Health budget allocations are sufficient and stable enough to meet health sector objectives and commitments.

**Funds are directed to health sector priorities.** Funds can be pooled, allocated and disbursed across populations, geographical areas and time to respond to health needs and ensure equity and financial protection for target populations.

**Funds are used effectively and efficiently to deliver high-value services.** Funds are directed to priority populations, interventions and services, and payment to providers is based on service outputs and performance. Disbursements are predictable, and flexibility in purchasing and provider payment ensures efficiency and value for money.

**Funds are accounted for against priorities.** The ministry of health and ministry of finance are both accountable for the proper use of public funds and effective delivery of health interventions, goods and services.

Source: Cashin et al., 2017.

are other factors making reallocation of funds difficult beyond imperfections in the budget process. For example, political economy factors surround reallocation decisions with implications for facility restructuring and health workforce consolidation and reprofiling.

Two trends in strengthening public finance management have the potential to strengthen the link between policy priorities and budget allocations: policy-based budget formulation and programme-based budget classification (Cashin et al., 2017).

■ **Policy-based budget formulation** implies strengthening the quality of annual health budget proposals with well defined, achievable priorities that are linked to a policy framework, sector strategy, or national development strategy aligned with cost estimates. While the annual budget may remain based on inputs and line items, an explicit cross-walk to policy priorities can be made by reflecting on how to adjust budget ceilings. A medium-term expenditure or budget framework can be helpful for avoiding underinvestment in areas that produce results in the longer term. These medium-term budget processes can provide more helpful opportunities for reprioritization in support of policy objectives than the fast-paced preparation of annual budgets.

■ **Programme-based budget classification implies** classifying, organizing and releasing the budget according to programmes with shared objectives, rather than along administra-

tive and input lines. Policy goals can be explicitly incorporated into targets. Forming budgets and setting spending levels at the programme level (such as essential primary care services), rather than at the level of facilities or vertical programmes by disease, can ensure more efficient allocation across levels of care and can provide flexibility through reallocation of efficiency gains and savings within a given programme. Programme-based budgets provide a good opportunity to link spending to policy priorities. This is not automatic, however, and depends on how well the programmes are structured and what processes are in place to regularly reflect on priorities.

Analytical methods and models can be used to understand how best to forecast pressures, cost new policies, and identify opportunities to shift resources from lower- to higher-value uses. Needs-based formulaic allocation is one such methodology, which is worth mentioning and is used in larger, deconcentrated or decentralized countries.

It is important that health policy-makers and health budget officials show greater engagement with and support for strengthening public finance management. Investment and training of health budget officials in public finance management principles would be an effective means of optimizing these processes at the country level. Change will build capacity. The timeline for attaining the Sustainable Development Goals affords opportunities for investing in the preconditions required for such change, which should not be abandoned in favour of easier or less intensive solutions.



## An outcome-oriented approach is needed to fund intersectoral actions and address misalignment of incentives across sectors

In making a business case for improving health outcomes, including those related to NCDs, health systems should harness the support and activities of other sectors. Key message 2 focused on the development of explicit criteria when determining the allocation of resources within health budgets. Assuming that adequate resources are allocated to actions to improve NCD outcomes through transparent priority-setting and needs assessment, further consideration must be given to the extent to which some of these resources

may be used to help facilitate actions to address NCDs, particularly through health promotion, disease prevention and early intervention measures delivered outside the health system.

Examples include actions to address underlying social determinants of health that will reduce risks or consequences of some NCDs. Although many of these actions can be funded and delivered within the health system, such as access to physical health training for high-risk groups, the health system may benefit from working with local government or



the education sector, for example, to reach the general population and encourage more active travel to work, or greater participation in sport and other physical activities. Tackling harmful alcohol consumption, for example, not only requires health system actions such as screening and brief intervention in primary care, but also work across many sectors, including the finance ministry on taxation, justice and transport ministries on enforcement of drink-driving legislation, businesses and local government on retail access, advertising authorities on alcohol advertising, and schools on health literacy messages for young people.

Despite the importance of intersectoral activities to address NCDs, intersectoral financing initiatives have historically been modest in much of the WHO European Region. The scope for using financial mechanisms to stimulate intersectoral activity is substantial. One consultation in 2013 found that only three out of 25 European Union member countries reported fully developed approaches to generating funds from different sectors for intersectoral interventions to promote gender equity and health (Aluttis et al., 2013). This situation is changing and momentum towards the financing of intersectoral actions is growing; a review in 2016 pointed to implementation and evaluation of range of actions at national and local level, both in the European Region and outside it (McDaid & Park, 2016). Box 12.3 provides three brief illustrative examples of actions where different financing approaches have been used to stimulate partnership working between the health sector and others.

To further stimulate and facilitate actions, health system budget holders, including health insurance funds, need to be able to objectively justify why some of their resources might best be allocated to the delivery of actions in other sectors. Traditionally, the focus has been on highlighting subsequent short-, mid- and long-term health system benefits that arise from these actions, such as a reduction in the need for health services and long-term care related to conditions such as diabetes or cardiovascular disease. One specific example is the reduction in harmful drinking patterns associated with different sectors working effectively together in the Netherlands (de Goeiji et al., 2016).

It is not, however, simply a question of making a case from a health system perspective. Different sectors will have different priorities. They might not be persuaded that improving health outcomes is of sufficient importance, even if they receive financial compensation for taking action. Crucially, health systems will therefore also need to become savvier in the way they work with other sectors, to leverage additional resources from them for what are seen as mutually desirable outcomes (see Chapter 6). They will need to identify and highlight the benefits that are of interest to these sectors, including economic

## Box 12.3 Examples of funding mechanisms facilitating intersectoral action.

- **KASTE Programme, Finland.** This programme provided national discretionary funding for local government level intersectoral work involving two or more sectors, with a strong emphasis on activities to promote physical, mental and social well-being, as well as reducing inequalities in well-being and health.
- **State Public Health Promotion Fund, Lithuania.** The Fund, which was established in 2016 using a share of revenues from alcohol excise duty, has been used to finance time-limited projects, some of which focus on NCDs.
- **Co-commissioned Work and Health Programme, England.** This forthcoming scheme will pool financial resources from the new Greater Manchester Combined Authority, which now has responsibility for most health matters in Greater Manchester, and the United Kingdom Department of Work and Pensions, to help deliver services and support to address the health (especially mental and musculoskeletal health) and employment needs of the long-term unemployed.

returns from addressing NCD risk factors or better managing NCD conditions.

The economic return on investment in actions to address NCDs and their determinants is increasingly documented (see for example Dyakova et al., 2017; McDaid, Sassi & Merkur, 2015). Measures to reduce harmful levels of alcohol consumption, for example, as well as having direct health benefits, positively impact on the costs of dealing with road-related accidents and congestion, as well as antisocial behaviour and interpersonal violence. This can create potential opportunities for partnership working, successful examples of which can be seen in many countries. Finance ministries can also have an important role in using this evidence to create the conditions to work across sectoral boundaries.

## **Funding mechanisms for intersectoral action for NCDs**

Different funding and resource allocation mechanisms have been used to stimulate and sustain funding for intersectoral actions (McDaid & Park, 2016). Such institutionalized funding mechanisms are the key to enabling stable and responsive governance mechanisms (Chapter 6). Their effectiveness will in part depend on regulatory and contextual factors.

One commonly used approach is to agree on dedicated funds from the health budget for the express purpose of delivering intersectoral activities that will help achieve overall health objectives. Typically, the administration of such funds is managed at the national level by the health ministry, local health budget holders or local government. Social insurance funds may also set aside some funds for these types of activities. The process for allocating funding may be prescriptive, stipulating that funding is linked to use of a specific cross-sectoral programme to address a particular issue, or it may allow for innovation in the way in which a priority issue is addressed. The latter may be a competitive process where organizations from two or more sectors may have to develop a proposal regarding how funds will be used to address an NCD concern.

Examples of this include the scheme in Finland, highlighted in Box 12.3, where municipalities have applied for funding for intersectoral health promotion programmes, which have been used to support mental health activities in schools. In such schemes, initiatives tend to be time-limited and often small in scale, which may raise questions about long-term sustainability. The Public Health Agency of Canada's

Innovation Strategy may provide a useful example of moving to sustainability; funding is provided in three phases for up to eight years, to scale-up intersectoral projects that have been shown to be successfully implemented and evaluated.<sup>22</sup>

Another approach is to establish an independent body or agency which can then set its own priorities for intersectoral action. Funds can be delegated to the independent agency from multiple sources of revenue or taxation, not just health budgets. One example of this is Health Promotion Switzerland, which receives funding from an annual surcharge on health insurance premiums. It then co-finances (through a competitive process) intersectoral projects that are aligned with its strategic goals, particularly in the areas of diet, physical activity and mental health. The challenge, however, is to ensure that the priorities of these organizations match those of the health system in general, including those for NCDs. Other examples of this approach include the Healthy Austria Fund and the recently established Lithuanian State Public Health Promotion Fund, which received 0.5% of alcohol excise duties in 2016 to support health promotion projects.

A practical way to leverage funding from multiple sectors is to adopt a joint budgeting approach. This can also be used to overcome inflexibility in funding within health systems. There are many ways in which this approach can be implemented on either a voluntary or a mandatory basis, for instance there may be budget alignment to address a specific issue, with mutually determined targets and outcomes, or there may be a formal legal process to establish a joint fund, often time-limited, to be spent on agreed projects or delivery of specific services. There are examples of formal and informal joint budgeting initiatives at the local and regional levels in England, which focus on health promotion among unemployed people with chronic physical and mental ill health, to promote return to work (see Box 12.3 above).

## **Common design and implementation features**

The effectiveness of these and other mechanisms for intersectoral action depends heavily on factors such as organizational structure, management, culture and trust. While this requires careful consideration in the WHO European Region as a whole, it may be of particular significance in some Member States in the eastern part of the Region, which have less experience of intersectoral funding for health actions. In part, lack of trust across sectors might be overcome by highlighting

<sup>22</sup> <https://www.canada.ca/en/public-health/services/innovation-strategy.html> (accessed 16 March 2018).



cost-effectiveness and the return on investment for different sectors, but this evidence base still needs strengthening and adapting to different country contexts in the European Region.

Sectors other than health should be included early in the prioritysetting process. This can help establish a joint sense of ownership which may help in leveraging funds and commitments from these sectors. There are also practical ways to develop trust that go beyond the scope of

this chapter, such as the co-location of staff from different organizations in order to help build up relationships and strengthen trust (see Chapter 6). The contractual and regulatory mechanisms highlighted in key message 4 are also vital: even in systems with a long history of collaboration and cooperation, legislative frameworks that allow for flexibility in the use of finances, as well as mechanisms to monitor contracts and assess the attainment of targets, can help to ensure an environment where intersectoral actions can be sustained.

## Incentives should be aligned and optimized across the service delivery interface to reinforce a service delivery model oriented to population outcomes



The fourth aspect of developing a health financing strategy for better NCD outcomes is to identify and address any misalignment of incentives across the health system that undermines the envisioned service delivery model. To implement the service delivery arrangements outlined in Chapters 7, 8, 9, and 10, strategic purchasing mechanisms must value health promotion, provide for early detection and management of conditions, reward task profile expansion of primary care, provide incentives to consider the full spectrum of care rather than the illness episode, reward individuals and groups working together in the interests of people, and foster work across levels of care. These service delivery dimensions are critical for all individual NCD services, including cardiovascular disease, diabetes, lung disease or cancer.

Many countries in the WHO European Region are strengthening their strategic purchasing mechanisms to better align incentives with the envisioned service delivery approach. This area of health financing policy is a dynamically moving area. Most countries are adapting incremental approaches to attenuate the weaknesses of base payment mechanisms and traditional incentives. A few countries are experimenting with larger, bolder and more disruptive changes (see Table 12.2 below).

### Incremental approaches to changing incentives

In many European countries, incremental approaches have been used to address weaknesses in base payment mechanisms and the interface across them. These approaches involve retaining base payment mechanisms and adding on further elements, such as pay-for-coordination or pay-for performance, or carving out services for bundled payments whereby the whole spectrum of care provision for a particular condition is given one single payment for a defined period of time. Mixed or blended payments, which use two or more types of payment mechanism together to achieve an optimal incentive mix, are also becoming increasingly common (OECD, 2016). These approaches have not changed the fundamental payment mechanisms, but rather made adjustments on the margin.

**Pay-for-coordination** is an example of an add-on payment typically made as a lump sum to a given provider, per chronic patient, to organize coordination of care through explicit care plans and collaborative care meetings, acknowledging the greater costs of these activities. Pay-for-coordination has been introduced in Austria, France, Germany and Hungary, among other countries. Experiments with this type of

payment began in France in 2009 with multiprofile primary care centres (OECD, 2016). Primary care centres receive payment for coordination and for NCD prevention and care (such as tops-up paid to GPs for diabetes screening), which they then allocate as they see fit; the rest of their business is paid predominantly on a fee-for-service basis. Evaluations have been positive both for uptake and for impact, in particular for diabetes management. They also echo findings in other incremental approaches showing that the impact does not necessarily come from large financial incentives but from making sure that coordination and care management activities are explicitly included in service baskets and are paid for with accountability for quality.

**Pay-for-performance** to improve quality and efficiency on top of capitation payments or in combination with fee-for-service has been the “go-to” solution in many countries, including in the eastern part of the European Region (see Chapter 5). Literature on mixed payments, and particularly on pay-for-performance, is not easy to interpret. While there is general agreement that breakthrough quality improvement (defined in a comprehensive sense to also include outcomes) has not been documented (Cashin et al., 2014), specifically defined incentivized services saw significant scale-up once pay-for-performance had been introduced on top of capitation payments. Beyond direct impact, there is an ongoing debate about how extrinsic motivation affects intrinsic motivation, and whether the excessive use of pay-for-performance creates a new culture between purchaser and provider whereby all changes in the terms of engagement (such as changes in the service basket) will require financial incentives.

A significant proportion of the available literature comes from higher-income countries, which have reasonable payment rates in primary health care, while other parts of this literature come from countries with fee-for-service payment mechanisms. These results are difficult to extrapolate to settings with underpaid and understaffed primary health care services that have low capitation base rates and extremely low coverage of basic NCD-related detection and management services (Chapter 4). In such cases, pay-for-performance or selective fee-for-service for particular services may provide a stepping stone towards more active primary care providers, and the additional funds may enable them to hire additional staff (such as nurses) to perform these labour-intensive activities.

In this regard, there are encouraging examples from several countries. In Estonia (see Box 12.4), a modest pay-for-performance, which was introduced in a comprehensive approach to primary care strengthening, and linked to practice guidelines, contributed to the scale-up of early detection and management of cardiovascular disease and diabetes. In Lithuania, cancer screening was scaled up and the incidence

## Estonia

### Box 12.4 Pay-for-performance in a comprehensive approach to primary care strengthening

In Estonia, modest pay-for-performance was introduced as part of a comprehensive approach to primary care strengthening and linked to practice guidelines. The financial reward was small: just 2% of the budget allocated for primary health care. The incentive contributed to scaling up early detection and management of cardiovascular disease and diabetes. An important lesson was that the behaviour change that ensued was less likely to be due to the funds themselves but rather to the information that became available as a result of the programme. Some years later, it was recognized that weaknesses in the service delivery modality (solo practices and fragmentation) cannot be rectified by further refining the payment mechanism, which has led to a complete rethink of the approach to delivering and paying for primary health care services in Estonia.

Source: Good practice brief: pay for performance in Estonia ([http://www.euro.who.int/\\_data/assets/pdf\\_file/0005/287096/Good-practice-brief-pay-for-performance-in-Estonia.pdf](http://www.euro.who.int/_data/assets/pdf_file/0005/287096/Good-practice-brief-pay-for-performance-in-Estonia.pdf))

of late-stage cervical cancer was reduced after the introduction of pay-for-performance incentives. In Kazakhstan, hospitalizations for ambulatory care sensitive conditions were reduced in a comprehensive approach using guidelines and pay-for-performance at primary care level for lower levels of hospitalization. Another particularly relevant example for NCDs comes from Australia, where the pay-for-performance mechanism has been structured to be fully aligned with what they term “a full cycle of care” for selected NCD conditions, such as diabetes or cervical cancer (Cashin et al., 2014). The full cycle of care encompasses detection, regular check-ups and condition management, with incentives for each stage in the process and a greater reward for fully completed processes.

**Bundled payment** for selected conditions is a third type of incremental approach, which is of particular interest in countries where fragmented fee-for-service arrangements are the starting point for all outpatient care. Disease-specific bundled payments have been introduced in Germany, the Netherlands, Portugal and Sweden (OECD, 2016). Bundled payments provide a single prospective payment for all services provided for a patient with a specific condition over a defined time period, even if the services are provided by several providers. In the Netherlands, this approach was initially piloted in 2007 for primary care based reimbursement for diabetes, and scaled up to include chronic obstructive pulmonary disease and vascular risk management in 2010. The Netherlands reports several positive effects, such as improved care coordination across providers and protocol adherence within a welldefined multidisciplinary approach with reduced reliance on specialists. This has led to increased satisfaction of patients and providers (Bakker et al., 2012; Llano, 2013; Struijs et al., 2012; Struijs, 2016). At the same time, bundled payments group previously fee-for-

service-based payments in primary care without outpatient specialist and hospital care, which are the areas where the greatest potential for unwarranted cost shifting lies.

While experiences with bundled payments are promising, thus far they only relate to mature health systems, which already have a long history of strengthening purchasing arrangements and payment mechanisms, and a well functioning monitoring system to detect potential adverse effects of financial incentives. It is also important to note the starting point of a fee-for-service payment for outpatient care, and simultaneous fragmentation and duplication. Applying bundled payment approaches to less developed systems and different base payment mechanisms is not straightforward. Furthermore, as these payment systems are condition-specific, they can trigger service delivery reconfigurations for those conditions, which could create new silos and verticalization of services. Condition-specific bundled payments therefore do not seem particularly well aligned with the idea of broad-based integrated primary care, driving the redesigning of service delivery for all patients.

The examples above and in the literature show that some of the weaknesses in commonly used base payment mechanisms can be overcome using incremental approaches. The main advantage of this approach is that it can be introduced relatively quickly to overcome inertia. Initial complexities can be adjusted to the experience and capacity of the strategic purchaser, using complex approaches, provider management capacity and autonomy, available information systems, and an acceptable incremental administrative burden. Moving towards more complex payment mechanisms will strengthen these dimensions, build purchaser and provider capacity and contribute to

**Table 12.2. Potential to improve the incentive interface**

	Pay-for-coordination	Pay-for-performance	Bundled payment for specific conditions
<b>Values health promotion, early detection and management</b>	High	High	High
<b>Rewards task profile expansion in primary care</b>	Moderate	High	Moderate
<b>Provides incentives for full spectrum of care (vs. episodic)</b>	High	Moderate	High
<b>Provides incentives for coordination and pathways</b>	High	Moderate	High
<b>Rewards teamwork, groups, networks across levels of care</b>	High	Moderate	High

strengthening the information system. A critical design aspect of more successful initiatives is clear: clinical practice and the model of service delivery need to be clearly defined for new payment incentives to have lasting effect.

## More evaluated experiments of large-scale change are needed

While the approaches described above are common and likely to be an improvement on the typical interface of capitation, fee-for-service and case-based payment, they influence provider and patient behaviour without making any fundamental change to the basic incentives that do not support the envisioned service delivery model. They tinker at the margins without actually addressing the genuine root cause of incentive alignment problems. This is insufficient to dramatically transform the way services are delivered. Bolder changes must therefore be made to the way in which health services are purchased. The problem is that proven, tested and evidence-based solutions are only just beginning to emerge, and that lessons learned are not yet systematically available. More experimentation in large-scale change to purchasing arrangements is needed, with contextualized evaluations to identify success factors.

Large-scale change would involve moving away from payment mechanisms defined by level of care towards full capitation for the totality of care for a defined population with care coordination intermediaries between the purchaser or payer and the provider network. We will refer to this approach as “full capitation” to distinguish it from the capitation payments commonly used in primary care. Population-based full capitation payments to providers or managed care organizations have a history in the United Kingdom (GP fundholding) and in the United States, in the publicly funded Medicare system (managed care). Since 2012, a new wave of accountable care organizations has emerged in the United States in response to health reforms under the Patient Protection and Affordable Care Act. In the WHO European Region, smaller-scale initiatives have been introduced in Germany, Hungary (see Box 12.5) and Spain.

Compared with GP fundholding and managed care, these approaches all measure success by improved health outcomes and lower overall costs. The latter is often the source of incentives for participating providers as they benefit from shared savings arrangements. Population-based full capitation for the totality of care provision normally means that providers receive payments for services in the traditional ways during the year, but if there are any savings at the end of the year compared with the prospective budget calculated using the full capitation

## Hungary

### Box 12.5 Full capitation and care coordination pilot

The Hungarian experiment covered 20% of the population – more than 2 million people. Care coordinator status could be granted to a group of general practitioners or a polyclinic providing secondary level outpatient services, or to a hospital contracting general practitioners to enrol patients in the pilot. The minimum population size was 50 000 people per care coordinator. The care coordinator was responsible for coordinating patient pathways across levels of care and providing care at their own level. The health insurance fund provided utilization data on all patients under the care coordinator to facilitate analysis. It also continued to administer payments centrally using the traditional payment methods to all providers, regardless of whether they were part of the care coordinator network. An adjusted capitation formula for the full spectrum of care was developed and used as virtual currency. At the end of the year, savings were calculated based on the difference between the virtual capitation formula for the population served by the care coordinator, and the actual payments made to providers. The care coordinator received the savings and shared them with participating providers (general practitioners and others collaborating in improved patient pathways and care). They also received a fixed fee for care coordination and pay-for-performance for documented prevention programmes introduced, regardless of the financial balance at the end of the fiscal year. The care coordinators were not budget holders and did not administer any payments, but focused on managing patient pathways in the system, ensuring adherence to clinical protocols and rational pharmacotherapy, reducing unnecessary referrals to higher levels of care and broadening the capacities at primary care and secondary outpatient care levels for all conditions and patients.

formula, they can be kept and shared among participating providers and the care coordination intermediary.

A well documented and evaluated experiment is Germany's *Gesundes Kinzigtal*, a physician-led accountable care organization where both the providers and the insurer benefit from shared savings (Pimperl et al., 2017). Care models and patient pathways have been redesigned to make them more patient-centred with less fragmentation between providers. Preventive activities target patients with increased risk for particular conditions. Rational pharmacotherapy is a key instrument for improved patient safety, better health outcomes and significant savings. Successful arrangements use integrated IT systems that allow real-time monitoring of metrics which are connected to registries and public reporting systems (OECD, 2016). The experience is subject to rigorous evaluation and reporting on health outcomes (Pimperl et al., 2017) and on patient experience. Savings made continue to be a key driving force in system redesign and care coordination.

The full capitation pilot for provider-based care coordination in Hungary is less well known, but equally valuable as an experience (Box 12.5). It has produced promising results and tested various organizational arrangements. It offered health-care providers the opportunity to be granted the status of care coordinators and take responsibility for the whole spectrum of care for a population (Gaál et al., 2011). The pilot facilitated cooperation between local health-care providers, incentivized improving care coordination and reducing fragmentation in the system, focused on prevention and early detection, and strengthened capacities at primary and outpatient care levels. Savings, calculated annually and shared between providers, provided financial incentives. The average 5% annual savings were sufficiently attractive for the care coordinators and participating providers to make the extra effort to improve care and reduce inefficiencies in the system (Boncz et al., 2015).

Service delivery redesign and the coordination of care for all patients across settings and over time are inherent in population-based full capitation models. This is more likely to lead to large-scale system reform and address key weaknesses in the service delivery model. Since NCDs give rise to the need for health services across all levels of care, we should move beyond traditional thinking along levels of care and disease-specific programmes, and introduce large-scale system changes where financial incentives play a partial, but important, catalytic role in system redesign for better population health outcomes and patient experiences.

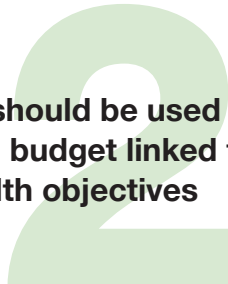
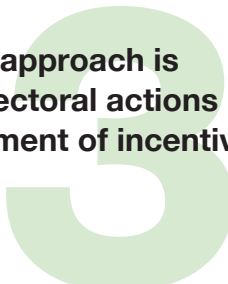

In reviewing many examples of financial incentives to understand how they change provider and patient behaviour, common themes have emerged. First, financial incentives, be they pay-for-performance, pay-for-coordination, bundled payment or full capitation, should not be introduced as an isolated instrument, but rather as an integral component of a systematic and multipronged approach to transforming the service delivery system with a view to scaling up prevention, early detection and disease management for NCDs. Other instruments should include guidelines, training, performance monitoring with feedback, better information solutions and task shifting, among others. Second, while incremental financial incentives can help address some of the weaknesses in commonly used base payment mechanisms, they can only go so far in correcting misalignment issues. Third, if the underlying service delivery structure is not effective (such as solo practice in primary care, lack of integration with outreach, lack of provider autonomy or ineffective staff mix), no incentives can fix these larger systemic, structural problems. Finally, policy-makers and purchasing organizations also have non-financial incentives at their disposal to steer provider behaviour and address misalignments (see Table 12.3).

**Table 12.3. Examples of instruments to address misalignment of incentives across the interface of care for NCDs**

Financial incentives	Non-financial incentives
<ul style="list-style-type: none"> <li>■ Payment for coordination across different providers</li> <li>■ Pay-for-performance with NCD-related objectives and indicators in primary health care</li> <li>■ Selective fee-for-service in primary health care</li> <li>■ Disease-specific bundled payments</li> <li>■ Payment below cost for ambulatory care sensitive conditions in hospital settings</li> <li>■ Strategic use of volume constraints</li> <li>■ Full capitation</li> </ul>	<ul style="list-style-type: none"> <li>■ Use of contractual obligations and commitments beyond payment</li> <li>■ Contracting groups of providers and thereby spreading risks and rewards to help with continuity</li> <li>■ Quality monitoring efforts</li> <li>■ Performance monitoring and feedback with benchmarking (external)</li> <li>■ Greater investment in information solutions to self-track performance at provider level (internal)</li> <li>■ Non-financial rewards such as competition between regions</li> </ul>



Table 12.4. Summary of key messages and policy responses

Key messages	Policy responses
<p><b>Reasonable levels of public funding need to be allocated to health-improving activities</b></p> 	<ul style="list-style-type: none"> <li>■ Ensure that public funding for health is at or above 12% of total government spending.</li> <li>■ Invest in mechanisms, people, data, and skills to make a better business case for health and NCD spending and ensure the inclusion of credible plans to harness inefficiencies.</li> <li>■ Engage in continuous strengthening of fiscal dialogue and budgetary processes to increase funding for health, and in particular for underfunded activity and programme areas.</li> <li>■ Apply high taxes to tobacco, alcohol and unhealthy foods to have a significant public health impact while increasing fiscal space, but have realistic expectations of earmarking.</li> </ul>
<p><b>More explicit criteria should be used to prioritize the health budget linked to development and health objectives</b></p> 	<ul style="list-style-type: none"> <li>■ Engage and support the processes of strengthening public finance management</li> <li>■ Invest in strengthening the public finance management capacity of health budget officials.</li> </ul>
<p><b>An outcome-oriented approach is needed to fund intersectoral actions and address misalignment of incentives across sectors</b></p> 	<ul style="list-style-type: none"> <li>■ Highlight outcomes and economic returns of specific interest to other sectors, not just the health sector, when seeking to involve those other sectors in funding or delivering actions for better NCD outcomes.</li> <li>■ Consider joint budgeting, specific health system funding conditional on intersectoral partnership, and financing of independent agencies as primary options for financing intersectoral actions for better NCD outcomes.</li> <li>■ Understand that financing mechanisms cannot work in isolation; issues such as governance, the regulatory and legal environments and measures to foster trust must also be taken into account.</li> </ul>
<p><b>Incentives should be aligned and optimized across the delivery interface to reinforce a service delivery model oriented to population outcomes</b></p> 	<ul style="list-style-type: none"> <li>■ Identify misalignment and inconsistencies between the envisioned service delivery model and the behaviour encouraged by the sum of incentives in the system (move away from optimizing incentives within levels of care only).</li> <li>■ Adopt an incremental approach to rapidly mitigate weaknesses in base payment mechanisms.</li> <li>■ For countries with a strong tradition of strategic purchasing, experiment and evaluate larger-scale change to the incentives continuum.</li> <li>■ Deploy non-financial incentives and the full range of strategic purchasing to influence provider and patient behaviours.</li> </ul>

# Conclusions

This chapter takes a holistic, systems view of health financing for NCDs. It has demonstrated that there are several important health financing policy areas that can impact on the scale-up of core NCD interventions and services. Reasonable levels of public funding need to be allocated to health and health-improving activities. To achieve this, policy-makers need to make a strong business case for health, including for NCDs, and become full and equal partners in a continuous dialogue about budgets and public financial management. More explicit priority-setting criteria can help reduce waste and inefficiencies and ensure that funds are translated into effective services. Since intersectoral action has a significant impact on NCDs, stronger and more sustainable mechanisms are needed to fund it. Finally, to improve scale-up of core individual services and care experiences for people with NCDs, incentives across the service delivery interface need to be better aligned. For key messages and policy responses, see Table 12.4 above.

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# 13

**Medicines:**

a multipronged approach to  
a complex problem

Jane Robertson, Hanne Bak Pedersen

# Agenda for action

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**Priority NCD medicines should align** with agreed clinical guidelines and prescribing protocols, and their selection should be evidence-based

1

2

**Priority NCD medicines should be available to all patients who need them**, including those in rural and remote communities

**Priority NCD medicines** in evidence-based treatment protocols **should be included in public sector procurement or in coverage policies** with no or minimal out-of-pocket payments.

3

4

**Acceptance and use of generic medicines**, which increase access to affordable medicines for patients and contain costs for health systems, **should be promoted through coordinated supply- and demand-side policies**

**Adherence to long-term treatments for NCDs should be promoted** through improved communication between patients and health-care providers on the rationale for the treatment, discussions on possible side effects, and simplified treatment regimens

5

## Motivation

Meeting global targets for the reduction in overall mortality from NCDs such as cardiovascular diseases, cancers, diabetes or chronic respiratory diseases, requires modifying behavioural risk factors including tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol. For many individuals, these lifestyle changes alone will not, however, be sufficient and medical interventions will therefore also be required. Patients need long-term access to affordable, quality-assured medicines for disease management that will achieve the desired clinical outcomes and improve quality of life. The importance of access to safe, effective, quality and affordable medicines is reflected in Sustainable Development Goal 3.8<sup>24</sup> and is underpinned by universal health coverage and financial risk protection for patients and their families.

Access to medicines is a broad concept comprising several dimensions including availability, accessibility, affordability, acceptability and accommodation (Penchansky & Thomas, 1981). Availability means that the medicine is physically available whenever needed, affordability means that the patient is able to pay for it, while accessibility relates to geographical access. Acceptability and accommodation assess the “fit” of the treatment – the ability of the patient (or caregiver) to use a particular medicinal product as intended, and to incorporate the proposed treatment regimen into the routine management of the clinical condition; these will affect the probability of adherence to the treatment, particularly for chronic conditions.

Measures to promote access to and ensure a reliable supply of affordable medicines to prevent and treat NCDs include the careful selection of cost-effective, prioritized medicines, their preferential prescription in clinical practice, efficient procurement and distribution systems to ensure that they reach the patients who need them, and subsidized access through public procurement and health insurance programmes. To ensure the greatest chance of successful treatment outcomes, it is also important that patients adhere to an agreed care plan, including taking the medicines as recommended by their health-care professionals.

Monitoring is essential for sustainable health-care systems. It is important to assess the availability and affordability of medicines for NCDs, and to ensure that prescribing is done in line with agreed clinical protocols and guidelines. Use of and spending on NCD medicines in public and private health insurance programmes should also be tracked to ensure optimal use of scarce health-care resources.

This chapter focuses on the medicines used in initial and first-level intensification regimens for diabetes, cardiovascular diseases and respiratory diseases managed in primary health-care. In some settings, this will require organizational change in health-care systems to allow primary health-care physicians to diagnose and initiate treatment for NCDs. High-price innovative medicines, including those used to treat cancers, are discussed elsewhere (Council for Public Health and Society, 2017; WHO, 2017a; Robertson et al., 2015).

<sup>24</sup> See <https://sustainabledevelopment.un.org/sdg3> [accessed 30 January 2018].

## Priority NCD medicines should align with agreed clinical guidelines and prescribing protocols, and their selection should be evidence-based



**Key Message**

### Selecting priority medicines and technologies for NCDs

The WHO Package of essential NCD interventions (PEN)<sup>25</sup> is based around a core set of evidence-based, cost-effective interventions for the prevention and treatment of key NCDs (cardiovascular disease, diabetes, asthma and respiratory disease) in primary care, which are feasible in low-resource settings. The core interventions, levels of evidence and relevant medicines to support the interventions are summarized in Table 13.1. PEN protocols may be adapted to national settings. Other European or international best-practice guidelines can also be used in preventing cardiovascular disease and treating hypertension, diabetes, asthma and chronic obstructive pulmonary disease (Piepoli et al., 2016; Lurbe et al., 2016; Inzucchi et al., 2015; Global Initiative for Asthma, 2017; Wedzicha et al., 2017). All of these guidelines are consistent in recommending that the same medicines or classes of medicines be included in initial treatment or first-level intensification regimens for the management of these clinical conditions. These priority medicines are mostly out-of-patent (beyond market exclusivity for the innovator product), and often have multiple manufacturers.

More recently, the launch of the WHO Global Hearts Initiative has signalled a renewed effort to scale-up prevention and control of cardiovascular diseases, particularly in resource-limited settings.<sup>26</sup> The

Initiative centres on simplified treatment protocols for primary and secondary prevention, appropriate referral using a core set of medicines and basic technologies, and improved service delivery through task-sharing supported by robust clinical monitoring. The Global Hearts Initiative technical package, which provides tools for cardiovascular disease management at primary care level, is fully aligned with and complementary to the clinical guidance and core medicines recommended in the WHO-PEN and other best-practice guidelines. It is incumbent on clinicians to follow these evidence-based treatment recommendations as affordable access to these priority medicines is fundamental to the effective treatment of NCDs.

Inhaled corticosteroids are central to the effective management of moderate to severe asthma and to improved lung function in chronic obstructive pulmonary disease. A survey of 111 countries conducted in 2013–2014 assessed whether three asthma medicines in the WHO Model List of Essential Medicines were included on the national essential medicines lists and/or reimbursement lists (Asher et al., 2016). Some 22% of low- and middle-income countries with a national essential medicines list did not have an inhaled corticosteroid on the list, while 30% of low- and middle-income countries with a reimbursement list did not subsidize inhaled corticosteroids. In the absence of public procurement or reimbursement, patients face significant out-of-pocket payments for these medicines.

<sup>25</sup> See [http://www.who.int/ncds/management/pen\\_tools/en/](http://www.who.int/ncds/management/pen_tools/en/) [accessed 30 January 2018].

<sup>26</sup> See [http://www.who.int/cardiovascular\\_diseases/global-hearts/en/](http://www.who.int/cardiovascular_diseases/global-hearts/en/) [accessed 30 January 2018].

**Table 13.1. Core interventions under WHO-PEN protocols 1, 2 and 3**

Essential intervention	Level of evidence	Related medicines
<b>Primary prevention of heart attacks and strokes</b>		
Aspirin*, statins and antihypertensives for people with 10-year cardiovascular risk >30%	Level 1	Aspirin, statins, ACE inhibitors#, calcium channel blockers, thiazide diuretics
Antihypertensives for people with blood pressure $\geq$ 160/100		ACE inhibitors, calcium channel blockers, thiazide diuretics
Antihypertensives for people with persistent blood pressure $\geq$ 140/90 and 10-year cardiovascular risk >20% unable to lower blood pressure through lifestyle measures	Level 1	ACE inhibitors, calcium channel blockers, thiazide diuretics
<b>Acute myocardial infarction</b>		
Aspirin	Level 1	Aspirin
<b>Secondary prevention (post-myocardial infarction)</b>		
Aspirin, ACE inhibitor, beta-blocker, statin	Level 1	Aspirin, ACE inhibitor, beta-blocker, statin
<b>Secondary prevention (post-stroke)</b>		
Aspirin, antihypertensive (low-dose thiazide diuretic, ACE inhibitor), statin	Level 1	Aspirin, statins, ACE inhibitors, thiazide diuretics
<b>Type 1 diabetes</b>		
Insulin	Level 1	Insulin <sup>o</sup>
<b>Type 2 diabetes</b>		
Metformin as initial drug in overweight patients (level 1), and non-overweight (level 4)	Level 1 Level 4	Metformin
Other classes of antihyperglycaemic agents, added to metformin if glycaemic targets are not met	Level 3	Sulfonylureas <sup>§</sup>
Reduction of cardiovascular risk for those with diabetes and 10-year cardiovascular risk >20% with aspirin, ACE inhibitor, statin		Aspirin, ACE inhibitor, statin
<b>Bronchial asthma</b>		
Relief of symptoms: inhaled short-acting beta-2 agonists	Level 1	Bronchodilator inhaler
Inhaled steroids for moderate/severe asthma to improve lung function, reduce asthma mortality and frequency and severity of exacerbations	Level 1	Corticosteroid inhaler
<b>Preventing exacerbation and progression of chronic obstructive pulmonary disease</b>		
<b>Relief of breathlessness and improvement in exercise tolerance</b>		
Short-acting bronchodilators	Level 1	Short-acting bronchodilator inhaler
<b>Improvement of lung function</b>		
Inhaled corticosteroids when FEV <sub>1</sub> <50% predicted	Level 2	Corticosteroid inhaler
Long-acting bronchodilators <sup>†</sup> for patients who remain symptomatic despite treatment with short-acting bronchodilators	Level 1	Long-acting bronchodilator inhaler

Source: Table 2, Annex A for estimates for cost-effectiveness (WHO).

Categories of evidence: level 1 = meta-analyses or systemic reviews of randomized controlled trials or randomized controlled trials; level 2 = case-control studies or cohort studies or systematic reviews of such studies; level 3 = case reports and case series; level 4 = expert opinion. \* Aspirin = acetylsalicylic acid. # ACE inhibitor = angiotensin converting enzyme inhibitor. <sup>o</sup> 2017 WHO Model List of Essential Medicines includes human insulin injection (soluble) Injection and intermediate-acting insulin injection (compound insulin zinc suspension or isophane insulin). Analogue insulins were not recommended for addition to the Model List. <sup>§</sup> Other classes of oral antihyperglycaemic agents are not yet included in WHO Model List of Essential Medicines. <sup>†</sup> Formoterol is a long-acting beta-2 agonist (LABA); budesonide + formoterol combination inhaler was added to the Model List of Essential Medicines in 2017 with a square box listing to represent alternative combination formulations containing an inhaled corticosteroid and a beta-2 agonist.



The Addressing the Challenge and Constraints of Insulin Sources and Supply (ACCISS) study has determined the prices of insulin at various levels of the health system (Beran et al., 2017). Median patient prices in the public sector (in countries where insulin is not supplied free-of-charge) were US\$ 7.64 for human insulin and US\$ 45.03 for analogue insulin, with a similar picture in the private sector (US\$ 16.65 and US\$ 39.35, respectively). These higher prices might be justified if there were significant clinical advantages with analogue insulins. In 2017, the WHO Expert Committee on the Selection of Essential Medicines considered an application to add long-acting insulin analogues to both the WHO Model List of Essential Medicines and EWHO Model List of

Essential Medicines for Children for the treatment of type 1 diabetes in adults, adolescents and children aged 2 years and above. While noting the effectiveness of long-acting insulin analogues, the Committee considered the magnitude of the benefits compared with human insulin to be modest and do not justifying the current large difference in price between analogues and human insulin (WHO, 2017b). The advantages of insulin analogues over human insulins are less clear for type 2 diabetes, with little evidence of improved glycaemic control or reductions in the risk of severe hypoglycaemia compared with human insulin (Lipska, Hirsch & Riddle, 2017).

## Priority NCD medicines should be available to all patients who need them, including those in rural and remote communities



Studies typically measure availability by the presence of a given product in the pharmacy or health-care facility on the day of the survey. Results have consistently shown problems of access to priority NCD medicines, particularly in lower-income and rural settings, where there are often fewer pharmacies than in other settings, lower availability of priority medicines and sometimes poor accessibility of health-care facilities, all of which constitute a barrier to care and appropriate NCD management. In some countries, innovative solutions have been developed to improve the availability and accessibility of medicines in rural areas, including the use of mobile pharmacy services provided under contract by private retail pharmacies in Turkey, and training of staff in rural feldsher-midwife stations in Belarus to sell NCD medicines.

The Prospective Urban Rural Epidemiology (PURE) study<sup>27</sup> assessed the availability of four groups of NCD medicines (aspirin, beta-blockers, ACE inhibitors and statins) recommended for the secondary prevention of cardiovascular disease (Khatib et al., 2016). Availability –

gauged by presence in pharmacy at the time of survey – was assessed in 18 countries and ranged from 95% of urban to 90% of rural communities in high-income countries, 80% to 73% respectively, in upper middle-income countries, 62% to 37% in lower middle-income countries, and 25% to 3% in low-income countries (excluding India). These estimates of availability in lower middle- and low-income countries fall well below Target 8 of the WHO Global Monitoring Framework on NCDs, that at least 50% of eligible people will receive these key medicines for the prevention of heart attacks and strokes by 2025. The large production capacity for generic medicines in India meant that the medicines were generally available.

A secondary analysis of 30 surveys using the methodology of the WHO/Health Action International project on medicine prices and availability, undertaken between 2008 and 2015 in low- and middle-income countries, assessed the availability of 18 strength- and dosage-form-specific medicines for cardiovascular diseases, seven for diabetes, nine for chronic obstructive pulmonary diseases and 15 for central nervous system disorders, although not all of the medicines were included in all

<sup>27</sup> See <http://www.phri.ca/pure/> [accessed 30 January 2018].

surveys (Ewen et al., 2017; WHO & Health Action International, 2008). Availability of cardiovascular disease medicines in health-care facilities and pharmacies ranged from 45% of public sector facilities and 83% of private sector facilities surveyed in low-income countries, to 58% and 93%, respectively, in upper middle-income countries. The pattern for diabetes medicines was similar. Patients relying on private sector sources for their medicines can incur significant out-of-pocket costs. In addition, people often prefer branded or originator products, which are generally more expensive than generics and thus increase the out-of-pocket costs incurred by patients (Cameron et al., 2009).

While affordability is a straightforward concept, there are no agreed methods for measuring it in practice (Niëns & Brouwer, 2013). Methods have included assessment of catastrophic expenditure (if it exceeds 5% of daily income), household impoverishment (if the residual income after purchasing medicines was less than US \$1.25 or US \$2 per day), and estimates based on the salary of the lowest paid government worker (Niëns et al., 2010; WHO & Health Action International, 2008). In the PURE study, affordability was defined as “combined cost less than 20% of household capacity to pay”. Using this measure, the four cardiovascular medicines studied (aspirin, beta-blockers, angiotensin-converting enzyme inhibitors, and statins) were deemed unaffordable in 0.14% of households in high-income countries, and in 25%, 33% and 60% of households in upper middle-, lower middle- and low-income countries, respectively. The medicines remained unaffordable for many patients in India, despite ready availability.

In the WHO/Health Action International surveys medicines are considered unaffordable when a 30-day supply using standard treatment regimens costs more than one day’s wages, based on the wages of the lowest paid unskilled government worker. Cameron et al. (2009) suggest that in low- and upper middle-income countries the predomi-

nant issue for the lowest-priced generics in the private sector was lack of availability, whereas in lower middle-income countries both availability and affordability were issues.

When considered together, availability and affordability data highlight significant disparities and inequities in access to NCD medicines both between and within countries.

## **Global monitoring of the availability and affordability of priority NCD medicines**

The NCD global monitoring framework under the Global action plan for the prevention and control of NCDs includes two medicines-related indicators to assess national system responses to the prevention and treatment of NCDs (Table 13.2). Voluntary Target 9 specifies that there should be 80% availability of the affordable basic technologies and essential medicines, including generics, required to treat major NCDs (WHO, 2013). For the purpose of these global indicators, essential NCD medicines are: aspirin, a statin, an angiotensin converting enzyme (ACE) inhibitor, thiazide diuretic, a long-acting calcium channel blocker, metformin, insulin, a bronchodilator and a steroid inhalant. The proposed method of calculation for this indicator is shown in Table 13.2; notably, there is no specification of the methods for determining affordability of these essential medicines.

The HEARTS technical package<sup>28</sup> proposes two medicine-related monitoring indicators – one focusing on health system capacity (essential technologies and medicines) and the other on clinical services (use of drug therapy in patients at high risk of cardiovascular diseases) (Table 13.2).

<sup>28</sup> See [http://www.who.int/cardiovascular\\_diseases/hearts/Hearts\\_package.pdf](http://www.who.int/cardiovascular_diseases/hearts/Hearts_package.pdf) [accessed 30 January 2018].

Table 13.2. Proposed indicators for monitoring NCD medicines availability, affordability and use

Indicator name and description	Definition	Method of estimation/calculation
<b>NCD Global Monitoring Framework* national systems response</b>		
<p><b>Drug therapy and counselling to prevent heart attacks and stroke</b></p> <p>Proportion of eligible persons receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes</p>	<p>Percentage of eligible persons (aged ≥40 years with a 10-year cardiovascular disease risk ≥30%, including those with existing cardiovascular diseases) receiving drug therapy<sup>§</sup> and counselling (including glycaemic control) to prevent heart attacks and strokes</p>	$\frac{\text{Number of eligible survey respondents who are receiving drug therapy and counselling}}{\text{Number of eligible survey participants}} \times 100\%$ <p><sup>§</sup>Drug therapy is defined as “taking medication for raised blood glucose/diabetes, raised total cholesterol, or raised blood pressure, or taking aspirin or statins to prevent or treat heart disease”.</p>
<p><b>Essential medicines and technologies for NCDs</b></p> <p>Availability and affordability of quality, safe and efficacious essential noncommunicable disease medicines, including generics, and basic technologies in both public and private facilities</p>	<p>Percentage of public and private primary health-care facilities who have all of the following available:</p> <p><b>Medicines</b> - at least aspirin, a statin, an ACE inhibitor, thiazide diuretic, a long-acting calcium channel blocker, metformin, insulin, a bronchodilator and a steroid inhalant. <b>Technologies</b> – at least a blood pressure measurement device, a weighing scale, blood sugar and blood cholesterol measurement devices with strips and urine strips for albumin assay</p>	$\frac{\text{Number of facilities that have all essential medicines and basic technologies from the minimum list available}}{\text{Number of facilities surveyed}} \times 100\%$
<b>HEARTS#</b>		
<p>Essential technologies and medicines (health system capacity)</p>	<p>Trends in numbers of pharmaceutical stockouts reported by each primary health-care centre</p>	<p><i>Not defined</i></p>
<p>Drug therapy (clinical services)</p>	<p>Percentage of high cardiovascular risk (&gt;30%) population receiving statins and/or antihypertensives</p>	<p><i>Not defined</i></p>

\* [http://www.who.int/nmh/hcd-tools/indicators/GMF\\_Indicator\\_Definitions\\_Version\\_NOV2014.pdf](http://www.who.int/nmh/hcd-tools/indicators/GMF_Indicator_Definitions_Version_NOV2014.pdf) [accessed 30 January 2018].

#<http://apps.who.int/iris/bitstream/10665/252661/1/9789241511377-eng.pdf?ua=1> [accessed 30 January 2018].



## Priority NCD medicines in evidence-based treatment protocols **should be included in public sector procurement or in coverage policies** with no or minimal out-of-pocket payments

A broad mix of policies and models is used in the WHO European Region to support affordable access to medicines. There is little robust evidence, however, on which reimbursement systems and combinations of policies represent best practice to ensure equitable and efficient access to essential medicines. Typically, reimbursement systems include a mix of supply-side and demand-side measures targeting various stakeholders (including industry, doctors, pharmacists, patients) to reduce or contain medicine prices, control volume of medicines used and manage budget impact by targeting reimbursement to clinical conditions or subgroups of patients most likely to benefit.

Health-care coverage that provides some level of reimbursement for medicines is high in European countries compared with those in other regions (OECD, 2016). The main instrument for pharmaceutical reimbursement is a reimbursement list (positive list or formulary), to which medicines are added if they comply with predefined criteria. Patients are often required to pay a share of the medicine price, with the intention of reducing unnecessary use of medical care and containing costs. There is evidence, however, that these out-of-pocket payments may also constitute a financial barrier to care, particularly for vulnerable groups, such as those with low incomes or those who have an increased need for medical care, such as those with chronic illness or multiple comorbidities.

An analysis of 37 European countries showed that 28 (76%) have differentiated reimbursement rates, with 100% reimbursement for certain medicines, and defined rates (percentage of the medicine price) covered for others (WHO Regional Office for Europe, forthcoming). In France, for example, there are four levels of reimbursement (100%, 65%, 30%, 15%), while Albania and Hungary have seven levels ranging from 100% to 50% and 100% to 25%, respectively. In all three of these countries, prices for reimbursable medicines are determined by the State or health insurance authority, meaning that patients' contribution is known. In other parts of Europe (non-EU), there is little

or no price control, such as wholesale regulation or retail margins for medicines. These unregulated prices tend to result in high overall prices for medicines, which are often borne as out-of-pocket costs that increase over time as medicine prices increase (Schneider & Vogler, 2016).

Despite the significant efforts to progressively include more medicines in insurance schemes, pharmaceuticals are still the most important component of out-of-pocket, payments for health. In Armenia, for example, 90% of medicines for the treatment of chronic and acute diseases are purchased out-of-pocket, while in Kyrgyzstan, the limited number of medicines that are reimbursed, the low percentage of the price reimbursed for those that are, and unregulated medicine prices result in catastrophic health expenditures for patients. In contrast, Croatia's health insurance fund covers the total costs of first-line medications for NCDs, Turkey's social insurance reimburses the costs of essential medicines for NCDs for hospital inpatients and outpatients, and Kazakhstan's State-guaranteed benefit package covers 100% of the costs of medicines for the treatment of cancer, diabetes and cardiovascular diseases.

Ferrario et al. (2016) used a modified version of the WHO/Health Action International metric based on the salary of the lowest-paid government worker in an analysis of the affordability of NCD medicines over time in the Republic of Moldova, following the introduction of a mandatory health insurance programme. Median expected compensation was 50%, 70% and 100% for medicines for cardiovascular diseases, respiratory diseases and diabetes, respectively, in 2013; however, in the absence of price controls, actual patient contributions may be higher than the expected amounts. While there had been some improvements in affordability since the introduction of medicines reimbursement in 2006, the authors concluded that this was mainly driven by higher household incomes, rather than improvements in the extent and breadth of coverage of NCD medicines.

## Acceptance and use of generic medicines, which increase access to affordable medicines for patients and contain costs for health systems, **should be promoted through coordinated supply- and demand-side policies**



The European Medicines Agency describes generic medicine as being developed to be the same as a medicine that has already been authorized; it contains the same active substance(s) as the reference medicine, and is used at the same dose(s) to treat the same disease(s).<sup>29</sup> Generic medicines are manufactured according to the same quality standards as all other medicines, although the inactive ingredients, name, appearance and packaging can be different.

Voluntary Target 9 of the Global NCD Monitoring Framework recognizes the role that generic medicines play in improving access and affordability of medicines. Given that generic medicines offer the same quality, safety and efficacy as other medicines but usually at a lower price, they play a crucial role in sustaining patient access to health-care and promoting cost-containment for health-care systems (Simeons, 2013). The 2009 European Commission pharmaceutical sector inquiry final report showed that two years after entry on to the market, the average generic price is around 40% lower than the price of equivalent brand name products (European Commission, 2009). That notwithstanding, uptake of generic medicines varies across the European Union. In 2013, uptake across 13 European markets ranged from 17% (Switzerland) to 83% (United Kingdom) market share by volume, and 11% (Italy) to 42% (Poland) by market value (Wouters, Kanavos & McKee, 2017). There is also evidence that generic medicine prices differ significantly between countries (Wouters & Kavanos, 2017).

Differences in the extent of use of generic medicines may be influenced by factors on both the supply and the demand side (Simeons, 2013; Nguyen, Hassali & McLachlan, 2013). Supply-side issues include intellectual property protection, such as evergreening of patents and patent linkage, which may delay marketing authorization for generic medicines. The 2009 European Commission pharmaceutical

sector inquiry final report concluded that makers of original medicines were actively trying to delay the entry of generic medicines on to their markets; settlement agreements between generic and originator companies were designed to restrict the market entry of generics. The result was that prices for consumers and taxpayers remained substantially higher than if competition had existed (European Commission, 2009). Further to the delays in marketing authorization for generics, there may be additional delays in pricing and reimbursement approval decisions that serve to defer inclusion of generic medicines in health insurance programmes.

Demand-side policies are needed to encourage prescribing and dispensing of generic medicines. The key issues are building trust in the safety and effectiveness of generics and confidence in the quality of the products available. The perception that low price means low quality must be addressed, otherwise it will be difficult to expand the generic medicines market and take advantage of its cheaper prices. Measures should be in place to deal with misleading campaigns designed to discredit generic medicines and to counter unethical promotional incentives for doctors and pharmacists to recommend branded products over cheaper generics.

Consumers and health-care professionals need to know that there are rigorous procedures in place to assure the generic's bioequivalence and therapeutic equivalence to the originator product and that the medicines in the marketplace are being monitored to ensure quality. Regulators have a responsibility to communicate the procedures involved in approving generic medicines and thereby foster the community's trust in the quality of generics. This includes providing information on the convergence of regulatory procedures and mutual recognition of products licensed under other jurisdictions.

<sup>29</sup> [http://www.ema.europa.eu/docs/en\\_GB/document\\_library/Medicine\\_QA/2009/11/WC500012382.pdf](http://www.ema.europa.eu/docs/en_GB/document_library/Medicine_QA/2009/11/WC500012382.pdf) (accessed 18 July 2018).

Pricing and reimbursement policies, which are set by governments and insurance agencies, play a key role in influencing the uptake of generic medicines. Reimbursement can be limited to the lowest-priced generic product, thereby helping to create financial incentives for consumers to choose generic medicines. Consumers wishing to choose more expensive branded products can continue to do so, but would have to meet any difference in cost as an out-of-pocket payment. Where remuneration systems for pharmacists favour the sale of more expensive products and thus penalize the supply of generic medicines, it may be necessary to examine wholesale and retail margins. The use of professional service fees for dispensing, which are unrelated to the value of the product, could also be considered as a way to remove some of the barriers to dispensing and supplying cheaper generic medicines.

Likewise, perverse incentives for physicians to prescribe, and in some cases supply, higher-priced innovator products need to be addressed.

A healthy pharmaceutical market is needed if the financial benefits of generic medicines are to be realized. Increasing pressures to reduce prices for generic medicines through tendering and external reference pricing may result in loss of commercial interest in producing generics, thus adversely affecting supply and potential savings that might accrue to patients and health-care systems where competition exists. There is an imperative to achieve a balance where manufacturers remain profitable and generic medicine prices are not so low that competition in the marketplace is compromised.



## **Adherence to long-term treatments for NCDs should be promoted** through improved communication between patients and health-care providers on the rationale for the treatment, discussions on possible side-effects, and simplified treatment regimens

Medicines that are prescribed and dispensed but are not taken waste financial resources and compromise clinical care. Patient nonadherence to prescribed medications is associated with poor therapeutic outcomes, disease progression and avoidable direct health-care costs (Iuga & McGuire, 2014). Reviews conducted by disease state and by country consistently estimate that 30–50% of prescribed medication is not taken as recommended (Horne et al., 2005; Naderi, Bestwick & Wald, 2012). Patients with NCDs often have multiple comorbidities, which require multiple medicines (polypharmacy) and a significant pill burden. Poor communication across the primary, secondary and tertiary care interfaces can compound problems, with doctors reluctant to stop or modify treatments initiated by clinical specialists and their peers. The complexity of administration schedules and the increased risks of medicine-medicine interactions and side-effects heighten the risks of nonadherence.

WHO-PEN Protocol (see Table 13.3) addresses issues of self-care and adherence to NCD treatments, with recommendations for all patients, as well as disease-specific recommendations (see Table 13.3).<sup>30</sup> The importance of improving adherence to treatment regimens that include medicines applies to all NCDs.

Different terms are used to describe the extent to which patients take their medicines. “Patient adherence” refers to taking prescribed medicines at doses and times recommended by a health-care provider and agreed to by the patient. The term “adherent” is generally preferred to “compliant”, which tends to imply that the patient passively follows the recommendations of the health-care professional. “Medication persistence” is a measure of the time between initiation and discontinuation of therapy (Iuga & McGuire, 2014).

<sup>30</sup> See [http://www.who.int/ncds/management/Self\\_care.pdf?ua=1](http://www.who.int/ncds/management/Self_care.pdf?ua=1) [accessed 31 January 2018].



**Table 13.3. WHO-PEN protocol 5: self-care among patients with CVD or diabetes**

	Recommendations
<b>For all patients</b>	
Adherence	<p>Strategies to improve adherence should form part of self-care for NCDs. Promotion of self-care in NCDs should take into account patients' beliefs and concerns about medicines, and their effects on adherence.</p> <p>No single strategy to improve overall adherence is recommended over another. Health workers should use their skills, resources and patient preferences to devise plans to improve adherence.</p>
Education	Group education programmes, rather than individual education, may offer a cost-effective strategy to deliver education in lower middle-income countries.
<b>Condition-specific</b>	
Cardiovascular diseases	<p><b>Raised blood pressure</b></p> <p>Self-measurement to monitor blood pressure is recommended for the management of hypertension in appropriate patients where the affordability of the technology has been established.</p> <p><b>Heart failure</b></p> <p>Appropriate patients could benefit from being educated on the benefits of cardiac rehabilitation, and can be encouraged to undertake rehabilitation exercise in the home setting.</p> <p><b>Need for anticoagulation</b></p> <p>Self-monitoring of blood coagulation and self-adjustment of dosage in patients receiving oral anticoagulation agents is recommended if affordable and according to an agreed action plan with a health professional.</p>
Diabetes	<p><b>Diabetes type 1 and 2</b></p> <p>People with type 1 and type 2 diabetes on insulin should be offered self-monitoring of blood glucose based on individual clinical need.</p> <p><b>Diabetes type 1</b></p> <p>Self-monitoring and self-adjustment of dosage is recommended in type 1 diabetes according to an agreed action plan with a health professional.</p>
Respiratory diseases	<p><b>Asthma and chronic obstructive pulmonary disease</b></p> <p>Self-monitoring in asthma and COPD and self-adjustment of dosage is recommended according to an agreed action plan with a health professional.</p> <p><b>Chronic obstructive pulmonary disease</b></p> <p>Appropriate patients may benefit from being educated on the benefits of chronic obstructive pulmonary disease rehabilitation, and encouraged to undertake rehabilitation exercise.</p>

Source: [http://www.who.int/ncds/management/Self\\_care.pdf?ua=1](http://www.who.int/ncds/management/Self_care.pdf?ua=1) [accessed 31 January 2018].



In some cases, nonadherence is unintentional and arises from capacity (such as issues with memory or dexterity in opening containers) and resource limitations (problems accessing prescriptions, cost of medicines, competing demands) that prevent patients from following treatment recommendations. In other cases, non-adherence is intentional, arising from the beliefs, attitudes and expectations that influence patients' motivation to begin and continue the treatment regimen. Chronic illness often requires lifelong treatment and for many patients this represents a paradigm shift from short-term curative treatments for infectious conditions. Factors such as type or severity of disease, sociodemographic variables or personality traits alone do not explain the observed variation in medicines adherence. While providing clear information is essential, it is not sufficient to guarantee adherence. Simplifying treatment regimens and frequency of dosing may help, but significant nonadherence persists nonetheless.

A meta-analysis of data from 20 studies (376 162 patients) assessed adherence to medicines to prevent coronary heart disease, both in primary and secondary prevention settings (Naderi, Bestwick & Wald, 2012). Across all of the studies, after a median of 24 months, adherence – assessed by prescription refill frequency – was 57% (95% confidence interval: 50%–64%), although slightly higher in secondary than primary prevention (66% and 50%, respectively). Naderi, Bestwick & Wald (2012) estimated that adherence decreased by 0.15 percentage points per month, but was not related to age or whether patients paid for their medication. There was no evidence of differences in adherence between classes of medicines, suggesting that nonadherence was not related to side-effects of particular medicines. They concluded that general, rather than class-specific, measures were needed to improve adherence.

A 2014 Cochrane review examined evidence on ways to help people follow their prescribed medicines (Nieuwlaat et al., 2014). Studies were heterogeneous for patients, medical problems, treatment regimens, adherence interventions, and the adherence and clinical outcome measurements used. The highest-quality studies generally reported complex interventions with several ways of improving adherence, including enhanced support from family, peers or allied health professionals such as pharmacists, and through education, counselling or

daily treatment support. Few studies reported both improved medicine adherence and improved clinical outcomes, and no common characteristics for success could be identified. Overall, the review concluded that even the most effective interventions did not lead to significant improvements in adherence.

Given that there is limited evidence to suggest that one strategy is more effective than another in improving patient adherence to medicines, the resource implications of interventions to promote adherence need to be assessed carefully.

## **Technology and innovation to support better medicines management for NCDs**

Electronic prescribing (e-prescribing) and electronic health-care records will be important for improving the management of NCDs. The electronic data generated will permit more rapid assessment of both the quantity of NCD medicines prescribed and the quality of prescribing. Quantitative data will facilitate more accurate estimation of the numbers of patients being treated, their medicine needs and the financial impact of these on national, regional and local budgets. This information will enable better budget forecasting both for public and private sector medicines procurement, and should lead to improved access and fewer medicine stockouts. Qualitative data can be used to assess the concordance of prescribing with agreed clinical guidelines and protocols and identify opportunities for interventions to improve prescribing practices.

Mobile health (mHealth) refers to the practice of medicine and public health supported by mobile telephones and other mobile communication devices. Applications for mHealth include disease surveillance, treatment support and tracking during epidemic outbreaks. Regarding NCDs, these mobile applications enable efficient surveillance of the availability and affordability of NCD medicines and support for chronic disease management, by facilitating the reporting of symptoms and clinical measures to health-care professionals and supporting patients in medication adherence through reminders and information about the NCD medicines prescribed to them.

## Conclusion

There is substantial evidence of problems with availability and affordability of essential NCD medicines and, in some settings, difficulties in accessing health-care facilities that are able to provide the medicines needed. Affordability can be increased and out-of-pocket costs decreased by broadening the extent and breadth of coverage of NCD medicines in medicines reimbursement lists. Ideally, priority medicines should be available with no or only minimal co-payments. Monitoring is central to sustainable health systems. Quantitative data enable better forecasting of needs and provision of adequate national, regional and local budgets for medicines, both for public procurement and for health insurance systems. Qualitative data can be used to improve prescribing practices and promote alignment with agreed clinical guidelines and prescribing protocols. Assessing global targets for medicines availability and affordability requires appropriate survey tools and a standardized method of measuring affordability.

Coordinated supply-side and demand-side policies and strategies, including regulatory activities and education, are required to promote efficient use of resources and increased use of generic medicines. Generic medicines are central to affordable access to medicines for chronic diseases, both for patients and for health-care systems. It is important to have a coordinated package of pharmaceutical and pricing and reimbursement policies that foster a healthy market to achieve a balance where all manufacturers remain profitable and there is effective competition.

Adherence to medicines is particularly important for chronic clinical conditions. Estimates of the extent of suboptimal adherence to medicines have remained consistent over time, and there is limited evidence of the benefits of any particular strategy to improve compliance. Family engagement and support, greater communication and explanation from health-care professionals, and discussion of administration schedules that are easy to accommodate within usual daily activities are low-cost interventions that may promote adherence to essential NCD medicines. For key messages and policy responses, see Table 13.4.

**Table 13.4. Overview of key messages and policy responses**

Key messages	Policy responses
<p><b>1</b></p> <p><b>Priority NCD medicines should align with agreed clinical guidelines and prescribing protocols, and their selection should be evidence-based</b></p>	<ul style="list-style-type: none"> <li>■ Set clear criteria for decisions on which medicines to include in national essential medicines lists and reimbursement lists, with a particular focus on priority medicines for the prevention and treatment of NCDs.</li> <li>■ Ensure that treatment guidelines align with these priority medicines to promote their use in clinical practice.</li> </ul>
<p><b>2</b></p> <p><b>Priority NCD medicines should be available to all patients who need them, including those in rural and remote communities</b></p>	<ul style="list-style-type: none"> <li>■ Conduct regular monitoring of medicines availability and prices; consider equity of access for urban, rural and remote communities and disaggregation of data by gender and socioeconomic group where possible.</li> <li>■ Agree a standardized methodology for assessing affordability.</li> <li>■ Ensure efficient procurement and distribution systems for pharmaceuticals so that medicines reach the patients who need them.</li> <li>■ Monitor progress against agreed international targets for access to NCD medicines.</li> </ul>
<p><b>3</b></p> <p><b>Priority NCD medicines in evidence-based treatment protocols should be included in public sector procurement or in coverage policies with no or minimal out-of-pocket payments</b></p>	<ul style="list-style-type: none"> <li>■ Assess the amounts of out-of-pocket charges faced by patients and whether these may compromise access to needed medicines.</li> <li>■ Increase the extent and breadth of coverage of NCD medicines in reimbursement programmes to improve affordability and decrease out-of-pocket payments.</li> <li>■ Ensure that priority NCD medicines are available with no or minimal patient co-payments.</li> <li>■ Consider the extent to which the various taxes and charges applied in the medicines supply chain (margins and mark-ups, VAT, other duties) have an adverse impact on medicine prices.</li> <li>■ Where prices for prescription medicines are unregulated, consider whether the legal framework for determining medicines prices requires amendment.</li> </ul>

## Key messages

**Acceptance and use of generic medicines, which increase access to affordable medicines for patients and contain costs for health systems, should be promoted through coordinated supply- and demand-side policies**

**Adherence to long-term treatments for NCDs should be promoted through improved communication between patients and health-care providers on the rationale for the treatment, discussions on possible side-effects, and simplified treatment regimens**

## Policy responses

- Review regulatory and reimbursement procedures to prevent unreasonable delays to market access and inclusion in reimbursement lists for generic medicines.
  - Where the quality of generic medicines is assured, focus messages to health-care professionals and patients on equivalence between originator brand and generic products.
  - Where quality cannot be assured, focus activities on regulatory authority strengthening and capacity-building to ensure the quality of products in circulation and to build confidence and trust in the effectiveness and safety of generic medicines.
  - Link reimbursement to the lowest priced generic product to help create financial incentives for consumers to choose generic medicines.
  - Remove or eliminate inappropriate incentives to doctors and pharmacists to prescribe and dispense more expensive originator brand products.
  - Consider a package of pharmaceutical and pricing and reimbursement policies that foster a healthy market.
- 
- Undertake regular medication review to assess the necessity of all medicines being taken and the potential impact of polypharmacy on reduced medicine adherence. Pharmacists can play an important role in medicines review.
  - Promote adherence to medicines by simplifying treatment regimens where possible.
  - Ensure that health-care professionals engage with patients to explain the rationale for treatment as well as possible side-effects.
  - Ask patients about difficulties in taking medicines, including the extent of influence of costs.

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# 14

Health system **information**  
**solutions** for NCDs

Tino Martí  
Tatjana Prenda Trupec



# Agenda for action

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Population health intelligence supports the system-wide deployment of integrated care strategies for chronic patients and helps to monitor population health outcomes

1

2

Optimizing the use of electronic medical records can lead to new models of people-centred care, allowing multidisciplinary primary care teams to coordinate and collaborate on patients' needs through information exchange and critical decision support

Exchange and integration of clinically relevant data can lead to significant improvements in clinical practice with tangible benefits for patients, including individualized treatment plans, improved quality of care and optimal use of care resources

3

4

Advances in telehealth and telemonitoring allow regionalization, concentration and decentralization of services to be reconsidered and thereby increase accessibility, quality and efficiency

Giving patients access to their own health data and expanded personalized services through personal health records can empower them and improve their engagement

5

## Motivation

Information solutions are a critical enabler for modernizing and improving the health system response to NCDs. Implementation of eHealth solutions has become a prerequisite for strengthening capacity and promoting a better, fairer and more efficient health system. According to the 2015 WHO global survey on eHealth, 70% of Member States in the WHO European Region had an active national eHealth policy or strategy in 2015 (WHO Regional Office for Europe, 2016).

The increasing prevalence of NCDs in the WHO European Region poses a challenge to the health system response to population and individual health needs. Tackling NCDs therefore requires capabilities for population health management at various levels of health care, and enhanced continuity and coordination between providers. This can be made affordable using advanced health information systems and technology-enabled care (Kadu & Stolee, 2015). At the individual level, the integration of clinically relevant data can lead to significant improvements in clinical practice, with tangible benefits for patients, including individualized treatment plans and fewer duplicate diagnostic tests. Lack of connection between information systems is increasingly recognized as a barrier to improving population health management and providing coordinated care. At an aggregate level, big data provides an opportunity to monitor system performance, ensure effective and better targeted public health interventions and increase quality of care for populations. It will also facilitate more effective use of health information to drive evidence-informed policy-making, measure coordination and outcomes of care pathways, compliance with national guidelines, resource use and costs, disease prevalence and the analysis of relationships between socioeconomic status, health and health-care (Salcher, 2017).

Chapter 5 looked at 12 countries and highlighted substantial variation in their health system information solutions. On the whole, information

solutions are not being used optimally to facilitate a more effective health system response to NCDs. The most commonly highlighted issues include:

- challenges in establishing regular and integrated monitoring of NCD-related behaviours such as diet and smoking, equity in NCD outcomes and related health system performance;
- the fact that most countries assessed do not use population health information to establish risk profiles to assist population health management;
- underuse of electronic medical record systems, shared by primary and specialist care levels, which would afford a great opportunity to ensure better coordinated and integrated health services; and
- failure to use large amounts of valuable data generated through existing information solutions to their full potential to improve system performance.

In this chapter, we will not attempt to provide a comprehensive overview of policies to strengthen national health information systems. Instead, we will focus on five potential areas for strengthening the policies described in the previous chapters (Chapters 6–13) for a comprehensive impact on NCD outcomes. We will focus on the most relevant information solutions that can be displayed in a common health system information solutions ecosystem, in particular for NCD management, and which could be implemented nationally. The issues we bring to the fore cover information solutions for population health management and individual services, including primary care and specialist care, as well as the potential to coordinate across these types of service delivery arrangements.

# Population health intelligence **supports the system-wide deployment of integrated care** strategies for chronic patients and **helps to monitor population health outcomes**



**Key  
Message**

## Population health intelligence

Health risk stratification, as a core population health intelligence tool, uses advance algorithms to predict future risks, not only for mortality and morbidity but also for health service utilization, including hospital admissions, readmissions and pre-hospital service use, for a defined population (Gillespie et al., 2015). Risk stratification tools are widely used in clinical practice to forecast prognosis and tailor care interventions to specific health needs. With the advent of systematic health registries and the significant uptake of electronic medical records in primary care and hospitals, sufficient relevant data are currently available to classify individuals in risk groups and predict the likelihood of their having a non-planned event in the near future. For country examples, see Box 14.1.

As indicated in Chapters 6 and 7, these risk-grouping practices are particularly relevant from a health system perspective for addressing the needs of chronic patients with comorbidities. They also facilitate the activation of appropriate disease, care and case management programmes fostering intersectoral collaboration among levels of care.

Risk stratification per se is merely an automated individual tag. When these markers are validated by clinicians with contextual and additional clinical information, however, health services can become proactive,

reducing hospital admissions and readmissions, increasing patient satisfaction and improving health outcomes (Huckel Schneider, Gillespie & Wilson, 2017).

Although the statistical validation of risk stratification systems is widely reported, how they are implemented and how they contribute to transforming the model of care remain unexplored. To bridge this gap, a conceptual model offering a broader theoretical understanding of the implementation feasibility of risk stratification has been developed using a European Commission study on activation of stratification strategies and results of the interventions on frail patients of health-care services. The study's final feasibility framework includes: planning, development and change management elements, such as communication, training and mutual learning, multidisciplinary risk stratification deployment teams, clinician engagement, operational plans and ICT information display and functionalities; and care intervention aspects, such as case-finding, pathway definitions and quality assessment and improvement processes (Mora et al., 2017).

The predictive capacity of population health risk stratification tools might be enhanced by including mental and social information to enrich risk profiling and provide more precise clinical meaning and higher uptake among health professionals.

## Box 14.1 Risk stratification examples at the country level

### Israel

For over a decade, **Clalit Health Services** have been using predictive modelling to identify and prioritize older patients whose health status is at risk of deterioration (Press et al., 2009; Shadmi et al., 2015). The Clalit Research Institute, established in 2010, allows clinicians, epidemiologists, biostatisticians, data scientists, algorithm specialists and public health experts to work together to create new tools and care models. The development of predictive analytic tools that drive care model innovation has increased considerably over recent years, with predictive models now in common practice in Clalit for chronic, infectious and malignant diseases. A predictive-tool-based programme to reduce readmissions rates, for example, facilitated a 9% reduction in readmissions over a four-year period. In another project, the institute identified how to predict end-stage kidney disease five years before onset, and now directs simple, yet effective, prevention efforts proactively to the relevant patients (Balicer et al., 2017).

The **Maccabi Health Services** have also been piloting predictive analytics-based care since 2015 for early detection of colon cancer (Balicer et al., 2015).

### Italy

Twenty-one local health-care authorities in the **Veneto Region** deployed a care management intervention in primary care settings for patients with congestive heart failure and multimorbidity after applying a case-finding tool based on adjusted clinical groups that generates high-risk case management lists (Netti Tiozzo et al., 2016).

In the **Lombardy Region**, chronic related groups have been set up in five local health authorities to enable case-finding and promote continuity of care for patients with NCDs and comorbidities, thereby delegating care coordination for chronic diseases to primary care instead of secondary/episodic care.

### Spain

A variety of stratification tools are used in Spain for case-finding, and customizing case and care management programmes for complex chronic patients, led by primary care teams. The Ministry of Health facilitated the use of adjusted morbidity groups, developed and validated in Catalonia, across 13 other regions. (Monterde, Vela & Clèries, 2016).

In **Catalonia**, adjusted morbidity groups are used to adjust per capita payments to primary care services and integrate care for complex chronic patients (Dueñas-Espín et al., 2016).

In the **Basque Country** the adjusted clinical group predictive model was validated and has been used for case-finding and exploratory risk adjustment of capita payments since 2015 (Orueta et al., 2013).

# Optimizing the use of electronic medical records can lead to new models of people-centred care, allowing multidisciplinary primary care teams to **coordinate and collaborate on patients' needs** through information exchange and critical decision support



## Electronic medical records

Over the past 20 years, electronic medical records have been widely adopted worldwide. These records collect health information generated by health professionals and support the coordination and integration of multidisciplinary primary care-based teams, extending the principles of accessibility, continuity and longitudinality, as pointed out in Chapter 8. Among other features, electronic medical record suites include ePrescription, clinical computerized decision support systems based on clinical practice guidelines, and coordination of care functionalities such as eReferrals and interconsultations. Electronic records can be complemented with mobile application bundles that can help manage health conditions by developing health awareness and behavioural change health programmes (mHealth). For country examples, see Box 14.2.

As a natural part of the use of electronic records, the information stored in health registries can be systematically exploited through quality and efficiency indicators to provide feedback on the performance of health professionals, and can be used for payment alignment, thereby incentivizing the improvement of health outcomes. It can also be used by health-care managers to improve health-care planning based on objective information, as well as for process optimization. Most pay-for-performance schemes introduced over the past decade have benefited from mature health information systems.

The social and economic benefits of electronic medical record systems outweigh their costs of implementation. These benefits can be grouped into clinical, organizational and social outcomes. The primary clinical outcomes are reduced medical errors and improved quality of care. From an organizational perspective, electronic records increase operational and financial performance, and clinician and patient satisfaction. Lastly, the societal outcomes encompass improvements in population

health and increased capacity for health research (Menachemi & Collum, 2011).

At the individual level, electronic records have many benefits for patients with long-term conditions, who need to monitor their health and treatments over an extended period. They also benefit physicians, enhancing communication and decision-making, and facilitate the integration of patient health information, enabling physicians to provide appropriate treatments and see patients with reduced waiting lists, and at lower cost and lesser provider liability (Pagliari, Detmer & Singleton, 2007).

When aggregated, the data stored in electronic records can be used to explore and detect health patterns and trends, and develop new drugs and therapies for chronic diseases.

For many stakeholders, evidence of the impact of these types of records on clinical outcomes remains mixed. This is because the impact most likely depends on the organizational context in which electronic records are used. A correlation between primary care team cohesion and electronic record-related improvements in health outcomes has been identified with regard to quality of diabetes care (Graetz et al., 2015). Cost-effectiveness studies show improvement in medication safety ambulatory care (Forrester et al., 2014), while systematic reviews of computerized decision support systems linked to electronic medical records are inconclusive on mortality reduction and show moderate improvements in morbidity outcomes (Moja et al., 2014).

Despite the benefits of electronic records, barriers to the adoption of eHealth and mHealth persist with regard to governance, regulatory issues and information management, interoperability and integration of information, which restrict health system capacity in terms of equity, quality and efficiency (Lewis, Ray & Liaw, 2016).

## Box 14.2 Country cases for electronic health records

### Denmark

In 2004, the GPs union and the Danish regions signed a contract that mandated GPs to use computers and electronic medical record systems compliant with standards set by MedCom, for the purposes of managing patients' medication lists, sharing clinical notes, viewing diagnostic images and laboratory test results, and sending reminders to patients. These systems use electronic text-based clinical messaging when exchanging data with the eHealth systems of specialists, pharmacies, laboratories and hospitals.

### Croatia

In 2014, the Croatian national health insurance fund **introduced primary care panels** – an innovative tool enabling systematic recording and management of patient data for preventive check-ups and risks associated with NCDs in primary care. These panels are being incorporated into electronic records and have been used by all PHC doctors for more than five years. With a user-friendly interface, the panels consist of numerous on-screen pop-ups.

**Preventive panels** enable GPs to record and stratify risk factors for NCDs among a given population. They contain personal information, height and weight values and in-built formulae that calculate body-mass index (BMI), position on percentile curves, waist-hip ratio, blood pressure values and plasma glucose (if indicated by increased BMI). Questionnaires on smoking habits and alcohol use are also included.

**Chronic disease panels** are designed for the proactive management of patients with major NCDs. As well as the data recorded in preventive panels, they allow for the recording of disease-specific parameters such as HbA1c, blood lipids, spirometry results, results of fundoscopy and vaccination dates, among others. A built-in questionnaire can also help providers to check patients' adherence to treatment. Panels have an automatic reminder function to perform or repeat certain diagnostics and patient follow-up, pop-up functions for missing information and basic decision support tools according to existing clinical guidelines and recommendations. The use of panels by primary care physicians is monitored and reimbursed by the insurance fund under the blended payment scheme for primary care.

### Israel

In Israel electronic health records were first used in the mid-1990s, using software developed in Israel for this purpose. All four payer/provider systems in Israel have been fully implementing this system in clinics in all community settings for over a decade. For more than 15 years, Clalit Health Services, Israel's largest health-care organization, which serves as an insurer and care provider for 4.4 million people (53% of the population), has been electronically recording all of its health-care services provision – both in community settings (primary and specialized care) and in 14 hospital settings. The information includes demographic data, diverse clinical data (all diagnoses, labs, medication, imaging), lifestyle reporting and health-care utilization and costs (Balicer and Afek, 2017).

**Exchange and integration of clinically relevant data** can lead to significant improvements in clinical practice with tangible benefits for patients, including individualized treatment plans, improved quality of care and optimal use of care resources



### Health information exchange

Electronic health records and health information exchange are defined as the reliable and interoperable sharing of clinical information among physicians, nurses, pharmacists, other health-care providers and patients, across the boundaries of health-care institutions, health data repositories, states and other entities not within a single organization, or among affiliated providers (United States Department of Health and Human Services, 2012). The concept of electronic health records and health information exchange is evolving and adaptive, reflecting the ongoing quest for integrated and interoperable information to improve the efficiency and effectiveness of health systems in a changing technological and policy environment (Akhlaq, Sheikh & Pagliari, 2017). For country examples, see Box 14.3.

Health information exchange improves care delivery by allowing clinicians and others improved access to patient data to inform decisions and facilitate appropriate use of testing and treatment (Hersh et al., 2016). It can be achieved by developing shared electronic health records and common data models, which streamline the integration of clinical data across the continuum of care. The diverse fragmentation of health information systems among WHO Member States means there is no one-size-fits-all approach to information solutions adoption. At the national level, policy-makers should therefore develop an

eHealth roadmap that reflects national, regional and local conditions that go beyond technical imperatives.

Shared electronic records, based on the standardized exchange of structured and non-structured information between local electronic health record systems, can offer a complete clinical profile overview of different health-care providers, including information on prescription of medication. Through data exchange, drug-drug interactions warnings are detected more frequently and patient safety can therefore be increased (Rinner et al., 2015).

Developing a health information exchange strategy is challenging. Its interorganizational nature and system-wide scope require general organizational characteristics, such as strong leadership and IT readiness at all network ends. Barriers to the adoption of these strategies are expected to come from health-care providers in the form of disincentives to share data due to competition, costs, limited returns on investment, and concerns about data misuse and privacy. Once developed, health information exchange deployments suffer from limited participation and lack of critical mass, inefficient workflows and poorly designed interfaces. From a system viewpoint, however, health information exchange promises to improve sustainability by reducing duplication, enhancing coordination of chronic care management and enhancing expected outcomes (Hersh et al., 2016).



## Box 14.3 Country examples of health information exchange systems

### Denmark

There are several initiatives in place that enable electronic sharing and viewing of a patient's clinical data. These include the following technical platforms, communication standards and health portals (Kierkegaard, 2013).

- Sundhed.dk is the public health portal established in 2003.
- The Danish Health Data Network acts as a data integrator to ensure interoperability. It was established to facilitate electronic data interchange communication for the messages most commonly used between GPs, hospitals, pharmacies, home-care providers and specialists.
- The national prescription server enables patients and health-care professionals to retrieve their prescriptions electronically at any pharmacy through the sundhed.dk portal.
- The shared medication record is a relatively new central database designed to provide health-care practitioners with an electronic overview of the patient's current prescriptions and medication history for the past two years.
- The National Service Platform is the central communications platform that enables access to national health services, registries and registration.
- eJournal is a system built by the Danish regions designed to extract information from hospital electronic medical record systems from all regions, to provide health-care practitioners with an overview of a patient's medical record in relation to a hospital visit.

### Estonia

In 2000, the Estonian national health information system was launched to improve and extend public health services. It encompassed an electronic health records project and included the digitization of registration, digital imaging and digital prescription. In 2005, E-Tervis, an eHealth foundation, was created to steer the procurement of health information exchange infrastructure. The resulting health information exchange platform utilizes already existing State infrastructure such as electronic identity cards and X-Road security and communications.

The electronic health record is part of the health information exchange platform. Its main goal is to enable the exchange of information between doctors by connecting information systems for health services. The electronic record enables doctors to see a specific aspect of a patient's health information and provides time-critical information to ambulance services.

Lessons learnt and recommendations made include the need for leadership, technical expertise, strong resource planning and awareness-raising, particularly on the need for a transition phase. Constant adjustment and improvement are required to maintain an effective system. The procurement of an electronic health records system is not an event but a continuous process (Widén & Haseltine, 2015).

## Catalonia, Spain

HC3, the Catalan Shared Electronic Health Record, was developed in 2010 to allow the exchange of non-structured information (discharge letters, emergency reports and primary care records) and structured data between public health-care providers to address fragmentation in hospital information systems and facilitate better coordination of care.

HC3 currently encompasses interoperability services to facilitate access to key clinical information at the point of care and coordinate care among health and social care providers (Contel et al., 2015).

## Israel

A national clinical data-sharing system allows for real-time information exchange between all acute care hospitals and public outpatient clinics. The system ensures availability of outpatient and hospital clinical data at the point of care across organizational silos in every hospital and clinic in Israel, in real time. Data made available through this exchange include past diagnoses, drug allergies, medications used and a summary of past hospital admissions. This system has originated at the largest health maintenance organization (Clalit) to share data between its hospitals and community clinics, and has subsequently been expanded by the Ministry of Health to all four health maintenance organizations and all hospitals nationally (Nolte, 2017).



## Advances in telehealth and telemonitoring allow regionalization, concentration and decentralization of services to be reconsidered and thereby **increase accessibility, quality and efficiency**

### Telehealth and telemonitoring

WHO defines telemedicine as “the delivery of health-care services by all health-care professionals, where distance is a critical factor, using information and communication technologies to exchange information for diagnosis, treatment, and prevention of disease and injuries, research, and evaluation, and for the continuing education of health-care providers, all in the interests of advancing the health of individuals and their communities” (WHO, 1998). Currently termed telehealth, this involves health services delivered from a distance and encompasses remote clinical diagnosis and monitoring. It also includes a wide range of non-clinical functions encompassing prevention, promotion and curative elements of health. It often involves the use of electronic means or methods for health care, public health, administration and support, research and health education (WHO Regional Office for Europe, 2016). For country examples, see Box 14.4.

There are various types of telemedicine and telehealth tools across a wide range of applications, including videoconferencing, transmission of medical images, patient portals, remote monitoring of vital signs, continuing medical education and nursing call centres (Sood et al., 2007). For NCD applications, see Table 14.1.

Telehealth increases access to health-care for populations to whom care was otherwise not available. It brings convenience to patients and providers, and can ultimately reduce costs. In clinical terms, telehealth and telemonitoring address care for both acute and chronic conditions, enabling the disruption of traditional services delivery (Dorsey & Topol, 2016). Time and space constraints reduce, blurring structural and organizational barriers and, as pointed out in Chapter 9, allow for the regionalization, concentration and decentralization

of services from hospitals to ambulatory settings, home and mobile devices. Paradoxically, telehealth means that the organization and regionalization of health service delivery can be redesigned in two opposite directions: while on the one hand it facilitates the concentration of health services in clinical knowledge hubs, on the other it promotes the decentralization of points of care to underserved or remote areas, thereby increasing accessibility, quality and efficiency.

Additional potential benefits of telehealth interventions include the potential to fill gaps in care that result from provider shortages, particularly for rural and underserved urban populations, and provide access to services after normal clinic hours, reducing patient and family travel burdens, facilitating services such as appointment scheduling and prescription renewal, and responding to health-care challenges and patient expectations (Tuckson, Edmunds & Hodgkins, 2017).

Over the past 10 years, the use of remote monitoring technologies for telehealth has given rise to a growing evidence base for advancing the management of chronic diseases. According to the Third Global Survey on eHealth (2015), 62% of Member States directly address telehealth in their policies or strategies, 83% use teleradiology, 72% use remote patient monitoring and 63% use telepathology services. Although teleradiology is the most widely used telehealth service, others related to chronic conditions, like cardiology, echocardiography, stroke or diabetic retinopathy and treatment of diabetic ulcers, are increasing (WHO Regional Office for Europe, 2016).

A recent technical brief on telehealth evidence for patient outcomes included 58 systematic reviews of 965 individual studies published between 2007 and 2015. Remote monitoring of patients, communication and counselling for patients with chronic conditions, and psychotherapy support for behavioural interventions were all found to be effective. Nevertheless, further systematic reviews will be required for

**Table 14.1. Telehealth and telemonitoring technologies in NCD applications**

Telehealth and telemonitoring modalities	NCD applications
Real-time video consultations with offsite specialists	Cardiology, dermatology, psychiatry and behavioural health, gastroenterology, rheumatology, oncology, neurology, early detection of stroke and peer-to-peer mentoring.
Telephone, email, chat and video visits for primary care	Triage and interventions, such as counselling, medication prescribing and management, and management of long-term treatment for diabetes, chronic obstructive pulmonary disease and congestive heart failure.
Technologies for transferring imaging data	Offsite radiology reports review.
Hospital-based services supported by specialist consultations through videoconferencing and securely transmitted high-resolution images	Emergency and trauma care, stroke intervention, intensive care and wound management.
Remote monitoring	Post-discharge coordination and management of chronic and other illnesses in home- and community-based settings.
Wellness interventions that use video channels, smartphone apps, texts, eLearning and web portals	Health education, physical activity, diet monitoring, health risk assessment, medication adherence and cognitive fitness.

a more thorough assessment of primary evidence for telehealth consultation, the deployment of telehealth technologies in intensive care settings, applications in maternal and child health, the use of telehealth in triage for urgent and primary care beyond telephone-only interventions, management of serious paediatric conditions, teledermatology and the integration of mental and physical health-care delivery. The report also found limited evidence on health-care costs and utilization and the consequences of new payment models (Totten et al., 2015). Studies have, however, shown some evidence of single disease telemedicine programmes, such as “telestroke”, producing meaningful improvements in markers of efficiency in the face of rapid growth of a telestroke network (Sanders et al., 2016).

Further evaluation and evidence are still needed to overcome the shortage of documentation of economic benefits and cost-effectiveness of telehealth solutions. This shortage is most likely because evaluations are typically small-scale, short-term and often hampered by technical issues, organizational barriers and weak design methodologies (WHO Regional Office for Europe, 2016; Dinesen et al., 2016).

The barriers to implementing telehealth programmes are numerous and varied, including inadequate funding, competing priorities and

legal and infrastructure constraints (WHO Regional Office for Europe, 2016). Furthermore, social inequity in access to telehealth services and the clinical consequences of telehealth, such as a reduction in the quality of patient-physician relationships, physical examination and care with remote visits, can be considered drawbacks to the adoption of telehealth (Dorsey & Topol, 2016).

Momentum Telemedicine, a European Commission research project, explored the critical success factors for scaling up telehealth solutions at the national or subnational level, and found that change management, the involvement of clinicians and agreement with stakeholders were critical for successful telehealth implementation (Jensen et al., 2015). The adoption of telehealth programmes ultimately depends on the evolving business and policy context that shapes these trends, especially the integration of telehealth data into electronic medical record systems and the penetration of value-based reimbursement formulae that influence decisions about technology investment. Other determining factors include clinician training combined with progress in enhancing the usability of telehealth technologies in daily workflows, success in navigating evolving relationships between patients and their physicians, and the availability of evidence-based clinical guidance (Tuckson, Edmunds & Hodgkins, 2017).

## Box 14.4 Country cases for telehealth and telemonitoring solutions

### Scotland, United Kingdom

#### Telestroke

Stroke is the third most common cause of death and the most common cause of severe physical disability in adults in Scotland. The Scottish Government identified stroke as a clinical priority for the National Health Service and recommended that a National Telestroke Service, providing access to acute stroke thrombolysis for the areas unable to provide constant stroke thrombolysis, should be delivered by 2012. Computed tomography (CT) modalities were already linked across all Scotland. CTs for stroke patients are assessed by neurologists, not by radiologists.

There are now five acute telestroke networks across Scotland. Patients suffering a stroke are taken to the nearest hospital with scanning equipment. An on-call stroke consultant based in NHS Lothian assesses the brain scan image electronically from his or her office or home, consults with the patient via video-conferencing, and decides whether thrombolysis should be offered. Thrombolysis is then given to the patient by staff locally within 4.5 hours (European Commission, 2014).

### Norway

#### Telediabetes

In northern Norway, people with diabetes use a mobile phone application with a diabetes diary as a self-help tool that allows them to keep a food diary, manage their blood glucose data and take note of physical activity undertaken. Users can self-monitor as and when they feel is beneficial and manageable. The service can now be combined with supervision by health professionals (with or without additional health counselling).

The five main elements of the mobile diabetes diary app are: food diary, blood glucose data management system, physical activity registration, personal goal-setting and general health information. While blood glucose data are automatically transferred to the phone from the blood glucose meter, activity data and food habits are entered manually by the user.

The introduction of personalized and technology-supported self-management, telemonitoring and health coaching interventions is expected to improve diabetes self-management by increasing disease control, and should also result in an improvement in health-related quality of life (European Commission, 2014).

## Giving patients access to their own health data and expanded personalized services through personal health records can empower them and improve their engagement



### Personal health records

Personal health record systems support patient-centred health-care by granting patients access to their medical records and other relevant information, and thus assisting them in health self-management. Online access to medical records by patients can potentially enhance provision of patient-centred care and improve satisfaction. Mobile health applications promise to add improved access to personal health data and extend personal health record functionalities and services. Integrating third-party mHealth applications into personal and electronic health record systems still remains a challenge for even the most advanced health systems, which have not yet capitalized on citizens' wide uptake of mHealth applications. While the reasons behind patient motivation for using personal health record systems differ, a generally low adoption rate is to be expected, except among persons with disabilities, the chronically ill or caregivers for the elderly, suggesting that these systems are a valuable practical tool to support self-care in NCD management. For country examples, see Box 14.5.

Personal health records can help patients manage their care. Important health information such as immunization records, test results and screening due dates in electronic form makes it easy for patients to update and share their records. Chapter 10 showed how health system investment in solutions such as these records can improve patient engagement, strengthen information management from various providers and improve care coordination by making information available everywhere at all times, including in emergencies. These systems can reduce administrative costs by providing easy access to

electronic prescription renewal and appointment scheduling applications, enhancing provider and patient communication through secure systems, and helping caregivers to coordinate and improve health-care quality.

Trials of the effectiveness and sustainability of personal health records for patient self-management are still needed (Archer et al., 2011). In a recent systematic review of 176 studies, however, patients reported improved satisfaction with online access and services compared with standard offline provision. Improved self-care and better communication and engagement with clinicians were also observed. Patient-led safety improvements were facilitated by personal health records, with identification of medication errors and increased use of preventive services. The provision of online access to records and services resulted in a moderate increase in email correspondence, no change in telephone contact, and variable effects on face-to-face contacts (Mold et al., 2015).

As personal health records and physicians' electronic medical records are closely linked, the adoption of the former depends on parallel growth in the use of the latter. Many personal health record systems are physician-oriented, and do not include patient-oriented functionalities or shared decision-making tools which have the potential to drive them towards more person-centred care. These tools must be provided to support self-management and disease prevention if improvements in health outcomes are to be expected (Davis et al., 2017).

## Box 14.5 Country examples of personal health records

### Denmark

Sundhed.dk is the Danish online public health portal established in 2003. It provides practitioners and residents with a single point of access to information about health services in Denmark and facilitates electronic communication between other care practitioners and patients. Citizens have access to information and communication with the entire health-care service using sundhed.dk, and telemedicine solutions increasingly provide patients with direct access to treatment and monitoring in their own homes.

### Catalonia, Spain

Third-party integration and prescription of mobile health applications is being piloted as part of the mHealth strategy to extend personal health records services at primary care level. Family doctors and nurses are able to prescribe mobile applications that patients can download from their personal health record system app store. Data is collected in the digital health platform and integrated into the electronic health record with the agreement of the health professional.

## Implementation sequencing

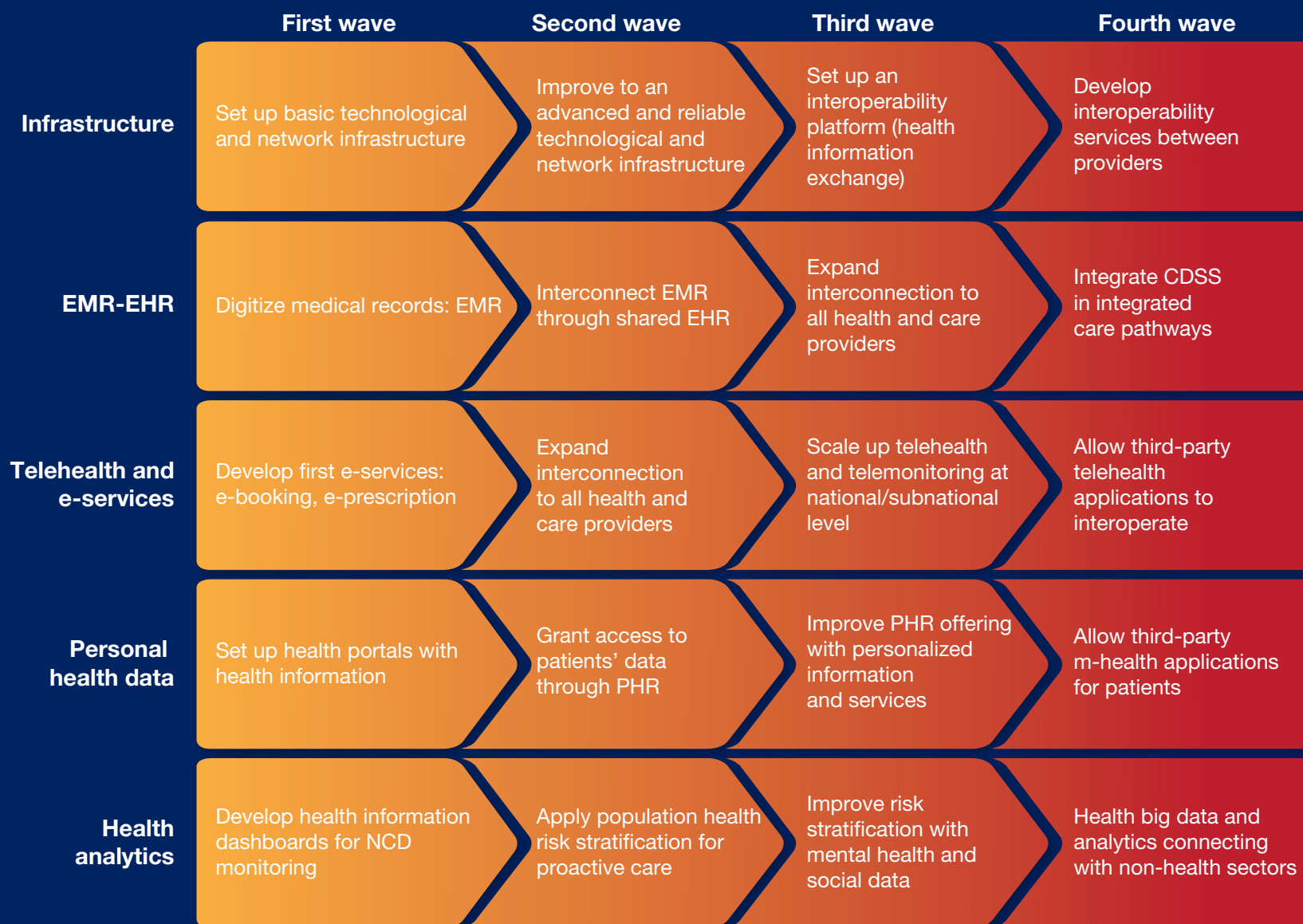
The rate of adoption of health information solutions varies considerably around the WHO European Region. At the national level, some countries, such as Denmark, Estonia and Norway, stand out as having advanced digital health systems. In these countries, system-wide digital health infrastructures have been established, and mechanisms have been put in place to integrate health-care providers' electronic health records, serve citizens through personal health records, and support outreach of telehealth and telecare programmes. In other countries, advanced digital health systems have been developed at the subnational or health plan levels, as in Israel and Spain. Variability in the development and adoption of eHealth solutions may be explained by the concentration of eHealth governance and the level of health spending as a percentage of GDP. Single-payer systems therefore have a greater capacity for steering eHealth development while, in countries with multiple payers and a higher participation of private health-care providers, managing information fragmentation poses greater challenges. Research published by the European Commission in 2015 suggests that the development and adoption of eHealth in primary care is significantly influenced by the context of the national health model in operation (Brennan, McElligott & Power, 2015).

In recent years, several eHealth maturity models and benchmarking analyses have been performed, allowing for countries to be ranked according to their level of eHealth adoption. Benchmarking the deployment of eHealth services in European hospitals (Deidda, Lupiáñez-Villanueva & Maghiros, 2013) and among general practitioners (Codagnone & Lupiáñez-Villanueva, 2014) provides a level-of-care perspective of the current situation of readiness and use of eHealth systems in Europe. Recently, a cross-national analysis of eHealth in the European Union (Currie & Seddon, 2015) and the situation in the WHO European Region (WHO Regional Office for Europe, 2016) complement a panoramic view of eHealth progress. Based on a hypothetical synthesis of the different digital maturity models and benchmarks, and according to the diffusion-of-innovations theory (Rogers, 2010), countries can be classified in one of five categories: innovators; early adopters; early majority; late majority; and laggards. Figure 14.1 shows an eHealth roadmap for a gradual implementation sequencing classified by the type of information solutions related to better NCD management, which can be used to leapfrog to more advanced levels.

Although a one-size-fits-all approach to eHealth is not recommended for Member States owing to national, regional and local conditions that



Figure 14.1. Information solutions implementation sequencing



AI: artificial intelligence; CDSS: clinical decision-support system; EHR: electronic health record; EMR: electronic medical record; PHR: personal health record.

**Table 14.2. Overview of key messages and policy responses**

Key messages	Policy implications and responses
<p><b>Population health intelligence supports the system-wide deployment of integrated care strategies for chronic patients and helps to monitor population health outcomes</b></p>	<ul style="list-style-type: none"> <li>■ Use health risk stratification tools at the local and national levels to improve outcomes in NCD management.</li> <li>■ Employ global best practices with regard to algorithms, adjusted to specific country contexts, degree of eHealth development and availability of accurate data.</li> <li>■ Use evidence-based decision-making in the day-to-day work of all stakeholders - policy-makers, public health managers, health-care providers and patients (for self-care).</li> </ul>
<p><b>Optimizing the use of electronic medical records can lead to new models of people-centred care, allowing multidisciplinary primary care teams to coordinate and collaborate on patients' needs through information exchange and critical decision support</b></p>	<ul style="list-style-type: none"> <li>■ Support the development of electronic medical records as a set of electronic medical and clinical data gathered in a health-care organization during the provision of care to support health providers in diagnosis and treatment decisions.</li> <li>■ View electronic records as a first step towards the development of electronic health records for exchanging medical data between stakeholders and levels of care, and therefore ensure that standards, minimal data sets and functionalities are defined at the national level.</li> <li>■ Integrate other electronic services, such as ePrescription or eReferrals into electronic medical record systems.</li> <li>■ Ensure that electronic record system implementation is not hindered by a need for keeping old paper-based medical data.</li> <li>■ Legislate to support the development and use of electronic medical records.</li> </ul>
<p><b>Exchange and integration of clinically relevant data can lead to significant improvements in clinical practice with tangible benefits for patients, including individualized treatment plans, improved quality of care and optimal use of care resources</b></p>	<ul style="list-style-type: none"> <li>■ Establish an eHealth strategy and a global eHealth architecture with a clear governance structure and a roadmap for eHealth development.</li> <li>■ Take a decision on a health information exchange platform at an early stage in national eHealth development.</li> <li>■ Ensure that the electronic health record system is a key pillar of the health information exchange.</li> <li>■ Integrate all national eServices, including ePrescription, eOrdering, eReferrals and eDischarge, into the health information exchange and connect them for comprehensive eGovernment services.</li> <li>■ Ensure that a legal framework is in place to support the development of health information exchange and electronic health record systems.</li> <li>■ Ensure that the identification of patients, health-care providers and health-care professionals and their roles, responsibilities and access rights are clearly defined and monitored at national level.</li> </ul>

## Key messages

**Advances in telehealth and telemonitoring allow regionalization, concentration and decentralization of services to be reconsidered, thereby increasing accessibility, quality and efficiency**

## Policy implications and responses

- Use the best telehealth practices and telemonitoring tools for NCD management.
- Clearly define telehealth services and cover them in payment schemes.
- Incentivize the use of telehealth and telemonitoring solutions for NCD management wherever possible for better medical outcomes.
- Use mHealth solutions for self-care, patient tracking, increasing adherence to drugs and communication.
- Encourage technology-enabled care innovations.
- Work actively to popularize innovative technologies in health service delivery.

**Giving patients access to their own health data and expanded personalized services through personal health records can empower them and improve their engagement**

- Carefully consider the data available in personal health records extracted from electronic medical and health record data sets.
- Enable patients to track the use of their data in the health system, in line with national or supranational legal frameworks.
- Complement personal health records with practical tools for self-care.
- Legislate to support the development and use of personal health records.

go beyond technical imperatives (Currie & Seddon, 2015), a logical path of digitization has been observed in advanced digital health systems. The first eHealth investments focused on digitizing paper-based medical records and were implemented and led by health-care providers. The resulting fragmentation of health information systems led health authorities to establish health information exchange platforms as a second wave of eHealth reforms. Developments in telehealth and telemonitoring services, personal health records and risk stratification tools followed. Nowadays, frontrunners are experimenting with the integration of third-party mHealth and telehealth solutions and the application of artificial intelligence, big data and the internet of things to improve health service delivery and planning.

Good practices in implementing information solutions at the macro level require governance, compliance with national regulations and a health-care financing approach that supports digital health transformation projects across the country. From a technological standpoint, open information communications technologies platforms have been shown to face common challenges with regard to ensuring sustainability, interoperability and future-proofing. Implementation needs to be supported by standard project management practices, encompassing IT procurement, infrastructure and systems requirements. Successful deployments require inclusive engagement with stakeholders responsible for or affected by the introduction of eHealth, to overcome resistance to change at the earliest possible opportunity.

## Conclusions

Although the vast majority of health-care facilities see IT as an enabler for improving patient safety and increasing quality of care, most health-care providers consider their IT budgets to be insufficient. They also feel that the central direction and support needed to progress in their eHealth agendas is lacking.

The implementation of an electronic health record system and the facilitation of health information exchanges are key priorities for improving care coordination and continuity, and are likely to stay at the top of health policy agendas over the coming years.

People's access to health information solutions needs to be addressed by health authorities as a potential source of increased inequity, owing to the social digital divide. At the same time, however, it may also provide more equitable care by providing telehealth and mobile health services to people in underserved or remote areas, and reduce disparities through information-based proactive care models, particularly for chronic conditions.

Population interventions can benefit from the broader use of risk stratification tools, enabling real-time surveillance, optimizing resource allocation and ensuring a more targeted distribution of information, while telehealth and telemonitoring can improve individual services, improving access, saving costs and increasing efficiency.

An emerging shift towards person-centred care, facilitated by personal health records owned and managed by individuals, as well as patient self-monitoring tools built on electronic health records, is receiving more attention from health authorities as a democratic and participatory health policy instrument.

Health professionals and managers need to improve their digital and leadership skills to take advantage of the opportunities afforded by information solutions and thus innovate and transform the current care model for NCD management.

WHO recommends ways in which Member States can capitalize on the potential of information solutions, such as creating national agencies to coordinate telemedicine and eHealth initiatives and ensure that they are appropriate to local contexts, cost-effective, consistently evaluated and adequately funded as part of integrated health service delivery. Ultimately, telemedicine initiatives should strengthen, rather than compete with, other health services (WHO, 2010).

Further evaluation of eHealth initiatives is needed, as the benefits may extend beyond health outcomes and include access, information, waiting time, time saved and avoidance of burdensome travel (WHO Regional Office for Europe, 2016). For key messages and policy responses, see Table 14.2 above.

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# 15

Health system transformation:  
**making change happen**

David J Hunter, Hans Kluge, Rafael Bengoa  
and Elke Jakubowski

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**Transforming health systems  
for better and more equal NCD  
outcomes requires a complex  
transformation process  
focusing not only on what to  
do but also on how to do it.**

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# Introduction

Despite the fact that NCDs are the largest cause of mortality in the WHO European Region, accounting for 86% of the burden of disease and constituting a high priority for countries, the opportunities exist to make greater, better sustained and more equitable progress in tackling them (Chapter 3). Although welcome progress has been made in reducing mortality related to NCDs, the issue remains one of how best to accelerate and maximize these gains, especially in those countries where progress has been slower (WHO Regional Office for Europe, 2017a). Previous chapters (5 and 6–14) have demonstrated the scale of the challenges that need to be taken up in order to overcome health system barriers and put in place effective change management strategies for bringing about a transformation in health systems.

Even where there is clear evidence pointing to the most cost-effective interventions for the prevention and control of NCDs, much remains to be done to scale them up, as documented in Chapter 4. In particular, tackling the root causes of NCDs arising from the social determinants of health is a matter of urgency, and countries need to make concerted efforts in order to secure rapid progress. This has significant implications for health systems as the key drivers of the required transformation. NCDs are an example of a “wicked problem”, since they are a complex phenomenon affected by multiple factors, including social, environmental, cultural, economic, commercial and political ones, throughout the life course. Tackling them effectively, as described in Chapter 6 on governance, requires cross-sectoral and multilevel working, and an integrated approach to health and social care, both horizontally and vertically.

Countries are moving to value-based health systems, shifting to a focus on outcomes rather than activities or inputs (Chapters 6, 7 and 8), redesigning population-based, coordinated services covering the full spectrum of care (Chapters 7, 8 and 9), empowering people (Chapter 10), making the health workforce fit for purpose (Chapter 11), and transforming payment systems based on results (Chapter 12). The complexities of these health system policies are particularly acute in the area of medicines, where technology is driving rapid change and where there is the greatest risk of leaving people behind, even for the simple treatment of hypertension (Chapter 13). Information solutions, on the other hand, provide ample opportunities to address previously intractable policy problems (Chapter 14). As these system, financial

and organizational transformations take shape – termed the third era of health system transformation by Halfon et al. (2014) – they will greatly facilitate the shift to better NCD management and prevention, since it is precisely these diseases that require a new system, mainly to provide better care and prevention but also to ensure sustainability in health-care funding.

While evidence is accumulating about which policies to introduce and implement – the preceding chapters have much to say on this subject, and there is broad consensus on them (WHO Regional Office for Europe, 2015) – how to implement them remains problematic, and informed guidance is lacking. Not all European health systems are fit for the purpose of tackling NCDs. Even when at their best in terms of innovation, quality and performance, health systems mostly continue to attach priority to hospitals and acute curative health services, while neglecting prevention and care outside hospital (Chapter 5). And even where prevention does receive attention, it tends to be focused on interventions at the level of individual behaviour change, rather than at the population health level. These interventions are important, but on their own they are insufficient. Yet when governments do acknowledge their role in tackling the social determinants of health, all too often their efforts fail to be realized and they revert to a default position of drifting downstream to focus largely on individual lifestyle factors – a phenomenon that has been termed “lifestyle drift” (Popay, Whitehead & Hunter, 2010).

A real sense of urgency is evident in many countries, as they wrestle with a tougher and more challenging political and economic environment while seeking to put in place appropriate policies and system changes. The prize for success is considerable since, if health systems continue on their present trajectory, they will become progressively unsustainable in financial terms as demands on them grow, only to be met by services that are no longer appropriate or configured in ways that meet the needs of NCDs (Vázquez & Ghebreyesus, 2017). There is therefore a palpable determination to bring about the necessary health system transformation. Indeed, not to do so is an option that countries can no longer afford.

What needs to be done to strengthen health systems for NCD prevention and control is clear and is well covered in Health 2020, the European health policy framework and strategy (WHO Regional Office for Europe, 2013), and in preceding chapters (6–14). The main ingredients are to give higher priority to promoting health and well-being

## Box 15.1 WHO's Health System Transformation Initiative

The Regional Office's strategic priorities in the area of health system strengthening for 2015–2020 have been endorsed by the WHO Regional Committee for Europe (WHO Regional Office for Europe, 2015). The Regional Office supports Member States in strengthening their health systems to become more people-centred, in order to accelerate health gains, reduce health inequalities, guarantee financial protection and ensure the efficient use of societal resources. The focus of its health system transformation work programme is not on the “what”, since policy-makers already know what is required by way of change, but on the “how”. Effecting sustainable long-term change in complex health systems poses significant challenges, and all countries are struggling with how best to give higher priority to prevention and health promotion at all levels of governance, and how to manage the growing demands on health-care services.

Transforming health systems demands continuity and consistency of purpose, combined with communicating early “wins”, to show what is possible. To that end, and following expert meetings held in Madrid, Spain, in December 2015 (WHO Regional Office for Europe, 2016) and in Durham, United Kingdom, in July 2017 (WHO Regional Office for Europe, 2018). WHO is establishing the following mechanisms in order to support Member States engaged in health system transformation:

- a network of experienced transformers (“critical friends”) to assist countries with their health system change agenda;
- a system for dynamically tracking the application of know-how across Europe and beyond;
- a health system assessment checklist to assess readiness for change;
- a set of tools for building capacity, and for tracking and guiding progress in health system transformation;
- a series of case studies on health system transformation, including successes and failures;
- mechanisms and tools for patient and citizen engagement and for encouraging the public to enter into the process of dialogue in a responsible, informed and receptive way;
- establishment of a Change Management Academy.



while addressing widening inequalities, to integrate health and social care, to give patients and citizens a greater voice, and to adopt a whole-of-government approach in policy-making. But the overarching challenge remains: how to implement sustainable change in a way that successfully transforms the health system, and to do so at pace and scale.

While achieving successful transformation is hard, as the preceding chapters have pointed out, it is not impossible, and there are examples of making progress towards this end. The problem is capturing this learning and making it accessible to others who are facing the same or similar issues. Taking the WHO European Region as a whole, there is ample experience to draw on. What is missing is guidance for policy-makers at different levels of the system that is designed to help them. Closing this gap is the purpose of the health system transformation work programme launched by the WHO Regional Office for Europe's Division of Health System and Public Health (see Box 15.1 above).

Because NCDs are an example of a wicked problem, addressing them poses a formidable challenge, one that requires thinking not only about what to do but also about how to do it. This final chapter aims to provide some insights into how to make such complex transformation happen. Following a brief overview of the "receptive contexts for change" framework adopted for the health system transformation work programme, we focus on the five pivotal factors that need to be addressed to make transformative change in health systems happen.

## The framework of receptive contexts for change

The health system transformation initiative is being implemented within the framework of receptive contexts for change (Pettigrew, Ferlie & McKee, 1992). This consists of eight factors (Figure 15.1); however, when applying the framework to health system transformation, five factors stand out as pivotal:

- environmental pressure
- quality and coherence of policy
- key people leading change
- supportive organizational culture
- managerial-clinical relations.

The eight factors, and especially the five selected, are not a "shopping list" but should be viewed as a highly interrelated combination which, when taken together, can guide and shape transformational change efforts. For successful change to occur, there needs to be some alignment among the factors. If they push and pull in different directions, and at the same time there is instability and frequent shifts in policy, often based on no or poor evidence, then preserving and sustaining successful change becomes ever more challenging. However, even where such conditions do apply and the setting appears to be receptive for change, the operation of the process in practice remains complex, and the outcomes generated are often indeterminate and unpredictable. As Pettigrew et al. (1992) conclude, there is "no simple recipe or quick fix in managing complex change".

It is also the case that notions of receptivity and non-receptivity are dynamic, not static, constructs. They are fragile and can quickly be dismantled. Although "receptive contexts for change can be constructed through processes of cumulative development, such processes are reversible, either by the removal of key individuals or ill-considered or precipitous action" (Pettigrew et al., 1992:276). Equally, movement from non-receptivity to receptivity is possible, encouraged either by the environment or policy changes at higher levels or by professional and managerial action at the local level.

In conclusion, receptive contexts are defined as situations where there are features of context, and of management action, that seem to be favourably disposed to change and are associated with forward movement. Conversely, non-receptive contexts are those situations where a combination of conditions effectively creates blockages or resistance to change.

Invariably, governments and managers attempt to bring about improvements or reforms in their health systems using policy, financial or structural levers. Yet, despite their best efforts, they often fall short of what they intended. It is no wonder that interest in complexity science has been accelerating, as policy-makers endeavour to understand better how health systems work and can be changed (Braithwaite et al., 2017). An adherence to linear, mechanistic and predetermined change is destined to fail, when health systems are non-linear, complex and emergent in their characteristics and properties.

Figure 15.1. Receptive contexts for change



Source: Pettigrew, Ferlie & McKee (1992).

# The five key factors

Addressing the five key factors highlighted above will assist policy-makers in putting in place a receptive context for health system transformation and NCD control. These factors are described and considered in more detail below, with reference where appropriate to other chapters (6–14) that have implications for effective change management strategies.

## Factor 1: Environmental pressure

Environmental pressure is especially critical in creating the conditions for transformational change and in ensuring that they remain in place long enough to become embedded, thereby enabling sustainable change to occur. Environmental pressure can come from various sources, such as trends in NCD outcomes (Chapter 3) and their impact on the organization of health services (Chapters 7, 8, 9), changing competencies in the health workforce (Chapter 11), financing strategies (Chapter 12), drug policies (Chapter 13) and information technology solutions (Chapter 14). Citizens themselves may also generate important environmental pressure for change (Chapter 10). The public in most countries no longer accepts a passive role and rightly demands a greater voice in the way health services are designed and delivered, including how health authorities are held accountable for their work. If environmental pressure is not conducive to the change efforts being implemented, it can be potentially disruptive.

Large-scale environmental pressure can trigger radical change, while short-term pressure, especially of a financial nature, can produce adverse effects such as deflecting or draining energy from the system. Financial crises can give rise to a range of reactions within organizations, including delay and denial, collapse of morale, and the scapegoating and removal of managers. At the same time, financial crises need not be viewed as a threat to the organization but can also be seen as an opportunity for radical configuration. However, in health systems there may be a greater tendency to view them as a threat.

The political context and the impact of politics on the environment governing large-scale change are as important as the financial situation,

if not more so. Politics are a feature of all health systems and can determine whether and to what extent large-scale change succeeds. The temporal challenge is especially acute, since electoral cycles often drive the search for results in the short term and militate against long-term change. This is especially evident in the type of change favoured. Whereas structural change or change involving regulation and/or inspection can occur quite quickly and easily, especially in national health systems, cultural change of the kind desired to alter behaviours and ways of thinking about health and well-being takes far longer to achieve and is often less visible. As Halfon et al. (2014) point out, if the 3.0 transformation framework they describe is to thrive in a health system, it will require supportive policies that incorporate longer time horizons. A policy framework that prioritizes short-term rewards for existing groups and organizations is no longer fit for purpose.

One way to improve policy cycles is to conduct a political stakeholder mapping exercise, in order to determine who holds power on issues and to identify opportunities for building coalitions of the willing across different sectors and levels of government. In their analysis of the actions that a government can take to make long-term policies “stick”, lott et al. (2016) describe three phases in the policy cycle:

- phase 1: a period of “rising salience” (significance), during which an issue becomes politicized, gaining the attention of ministers;
- phase 2: a “building blocks” phase, during which politicians and officials put in place the policies to resolve the problem;
- phase 3: a period of embedding, to ensure that the policies implemented to tackle the problem do indeed deliver, even when political interest may be diminishing or waning.

What happens, or does not happen, in each of these phases will determine whether a policy survives and succeeds or fails in the long term. In respect of complex change, like tackling NCDs, the long term is crucial. While quick wins are needed to demonstrate that the changes sought are having a positive and immediate impact, to ensure continuing political support and to demonstrate that the policy is working, it is accepted that deep-seated culture change can take between five and 10 years at least to put in place and embed. Having an expectation of success and quick wins offers reassurance to policy-makers, who may be under attack over their policies, and enables them to provide interim evidence that their changes are working (Barber, 2015). Quick wins also build resilience and ensure that policy-makers remain confident that what they are doing is worth sharing and spreading. In short, a positive change environment is both created and sustained, within which the quality and coherence of policy is likely to be enhanced.



## Factor 2: Quality and coherence of policy

From both its analytical and its process perspectives, the quality of policy developed at national and local levels is found to be important (Chapter 6). Having policy that is informed by evidence and data, especially at local level, is important for presenting a robust case for change and to persuade sceptical staff, notably clinicians, of the merits of the exercise. The most successful policies are those that consider questions of coherence and alignment between goals, feasibility and implementation requirements. A broad vision is more likely to generate support for change than a detailed blueprint.

Policies also need to be designed in a way that “connects actors vertically and horizontally in a process of collaboration and joint deliberation” (Ansell, Sørensen & Torfing, 2017:475). This, the authors say, “should not be equated with a long and cumbersome search for unanimous consent”. Rather it constitutes “a shared effort to establish common ground for public problem-solving through constructive management of differences that leaves room for dissent and grievance”. This, it is hoped, will lead to a joint commitment to, and responsibility for, the implementation of innovative policy design.

Given the intensely political nature of achieving successful health system transformation, as reflected in Factor 1 (environmental pressure) above, Kingdon’s “multiple streams” approach has much to commend it and extends the notion of successful policies to encompass those that demonstrate coherence and alignment (Kingdon, 2013). In practice, achieving either coherence or alignment, let alone both, can be difficult.

Kingdon identifies three streams. The “problem stream” comprises research and evidence that establishes the existence of an issue, such as the drivers for change in NCDs noted above and in preceding chapters. The “political stream” considers the political aspects that may shape agendas, including the influencing role of key stakeholders as described in Factor 1 above. And the “policy stream” is the process whereby the stakeholders involved discuss ideas and solutions for the issue concerned. When these three streams are aligned, they create or open up windows of opportunity or policy windows, so that policy change can be activated.

Although Kingdon’s primary concern is with big windows at the national policy-making level, little windows at the meso (intermediate) or micro (local) levels are equally important for bringing about policy

“Successful health system transformation policies demonstrate coherence and alignment. When the problem, political, and policy streams are aligned, they create or open up windows of opportunity or policy windows, so that policy change can be activated. Although big windows at the national policy-making level are critical, little windows at the meso (intermediate) or micro (local) levels are equally important for bringing about policy change”

change. Successful implementation requires a similar confluence of streams and their alignment at the centre-centre, local-local and centre-local levels (Exworthy & Powell, 2004). Governance, as noted in Chapter 6, operates in an interdependent context when it comes to NCDs and the wicked problems they generate. This means that successful implementation requires coordinated action in respect of big and little windows.

Many Member States in the WHO European Region are currently experiencing such windows of opportunity – both big and little – with intensified global and regional attention to, and support for, NCD-related action. The staggering economic and social costs of inaction related to NCDs are becoming increasingly well documented and acknowledged (Chapter 12). The failure to transform health systems so that they are more oriented to prevention and health promotion may be politically more convenient, but it will incur costs over time (Chapter 7). Achieving sustainability is indeed a “burning platform”, which acts as a very powerful driver of strategic change. At the same time, micro- or meso-level opportunities are being created by the changing expectations of both professionals and members of the public, who increasingly demand to be part of policies and processes (Chapters 8, 9 and 10). Finally, information solutions can be a powerful game changer, enabling previously intractable problems to be addressed (Chapter 14).

Sometimes windows of opportunity close and ways have to be found to navigate around them, in order to create new open windows. Navigating and creating such windows may occur with, and require the active assistance of, policy entrepreneurs or champions. Their job is to create policy windows and then to successfully exploit them, using their knowledge of the policy process to advance their policy ends. Policy entrepreneurs may be politicians, those leading change (see Factor 3 below), or those who promote particular causes. As suggested in Chapter 9 on regionalization, the key ingredients of successful policy entrepreneurship are: test early, test often, do not grow too fast too soon, collaborate with like-minded people across sector boundaries, and have a compelling narrative of what is intended and why (Weiss, 2014). Especially in respect of complex wicked problems (of which NCDs are a good example), where solutions are not simple or clear-cut and where evidence may be incomplete or contested, it is desirable to adopt “plan-do-study-act” (PDSA) cycles at frequent intervals and at different levels of an organization, in order to discover what works and what does not.

Even when policy windows are identified, they generally do not remain open long, which requires incumbent governments seeking to drive a new policy or major transformational change initiative, such as that

“...the key ingredients of successful policy entrepreneurship are: test early, test often, do not grow too fast too soon, collaborate with like-minded people across sector boundaries, and have a compelling narrative of what is intended and why.”

required to tackle NCDs, to “take advantage of the critical junctures at which the opportunity for change presents itself” (Ilott et al., 2016:47). Such critical junctures might refer to a new incoming government keen to put its stamp on a policy problem. Or they might include burning platforms of the kind noted above, which can be essential catalysts for transformation. Often these platforms are caused by external forces (such as environmental pressure – see Factor 1): for example, the fiscal squeeze and acute budgetary pressures being experienced in many countries across the Region. As described in Chapter 11, projection of health-care demand in England to 2030 has highlighted the fact that NCDs will be driving this demand, and in particular generating a need for a less specialized health workforce in care roles, which is presently missing or not being trained in sufficient numbers. This analysis has identified a burning platform and prompted a number of policy decisions to alter the training mix, the classification of professional roles and the health workforce intake (WHO Regional Office for Europe, 2017b).

Kingdon’s policy stream is reflected in the remaining three factors described below, which together form part of the framework of receptive contexts for change.

## Factor 3: Key people leading change

Leadership is paramount in developing and implementing policy. But the deep changes necessary to accelerate progress against the most intractable problems arising from NCDs require a unique type of leader – “the system leader, a person who catalyzes collective leadership” (Senge, Hamilton & Kania 2015). They also require unprecedented collaboration among different organizations, sectors and professions.

Having people in critical posts is essential and entails fostering and engaging individuals at all levels in leading change efforts. In this regard, leadership must be both designated and distributed (Best et al., 2012). But this does not imply heroic leaders of a traditional type, operating in a top-down, command-and-control fashion and detached from the work being undertaken, but rather those who exercise leadership in more nuanced and subtle ways, adopting a pluralist and system-wide approach. Examples of such leadership styles might be quiet or servant leaders working across a whole system (Mintzberg, 1999; Greenleaf, 2002). They are often more effective than those who lead from the front and profess to know all the answers to wicked problems. Leadership in complex systems demands an engaged, distributed, adaptive approach (Alimo-Metcalfe et al., 2008; Heifetz et al., 2009; Mintzberg, 2017). There is also a recognition that leadership and management are linked activities. As Mintzberg puts it: “In place of heroic leaders who don’t manage, health-care needs engaged managers who lead” (Mintzberg, 2017:190).

The critical role of system leadership is essential in addressing NCDs and securing successful transformational change. Its importance runs through Chapters 6 to 14. In a review of system leadership involving in-depth interviews with 10 system leaders working in the United Kingdom’s national health service, Timmins (2015:7-8) noted a number of common themes.

- System leadership is not easy.
- It requires a conflicting combination of constancy of purpose and flexibility.
- It takes time to achieve results.
- It starts with a coalition of the willing.
- It is important to have stability of at least a core of the leadership team across those involved.
- Patients and carers are crucial in helping design the changes.
- System leadership is an act of persuasion that needs to have an evidence base for change – not least because that is the key tool for persuading the unconvinced.
- System leadership requires giving away ownership.
- Not enough is being done to develop system leaders.

Many of these themes have been referred to in earlier chapters, and they present a formidable challenge with regard to reducing the burden of disease from NCDs. Chapter 6 has noted the need for improved inter-sectoral action and the leadership skills associated with this; Chapter 7 has emphasized the importance of linkages between public health and primary care; Chapter 8 has underscored the importance of clinical leaders and team approaches cutting across disciplines; and Chapter

“...the deep changes necessary to accelerate progress against the most intractable problems arising from NCDs require a unique type of leader – ‘the system leader, a person who catalyzes collective leadership’ [...] this does not imply heroic leaders of a traditional type, operating in a top-down, command-and-control fashion and detached from the work being undertaken, but rather those who exercise leadership in more nuanced and subtle ways, adopting a pluralist and system-wide approach”

11 has described the new competencies and professional roles required to meet the system-wide challenges posed by NCDs.

Building teams with vision and commitment is a key element of system leadership. To do so effectively demands a skill set comprising “soft” skills in alliance-building, persuasion, influence and political astuteness, which are often the hardest skills of all to acquire or apply. In addition, three core capabilities are paramount (Senge, Hamilton & Kania, 2015):

- the ability to see the larger system;
- fostering deep, shared reflection and holding up a mirror to examine assumptions that are taken for granted;
- shifting the collective focus from reactive problem-solving to jointly creating the future.

Paradoxically, and as highlighted in the list of common themes above, stability in the effective leadership of change is a key requirement for success and sustainability. This is especially important with regard to major cultural change, which requires sustained commitment and continuity. As Berwick (2013:15) notes, “culture change and continual improvement come from what leaders do, through their commitment and encouragement, compassion and modelling of appropriate behaviours”.

At the system level, cultures of collective leadership for high-quality, compassionate care reach beyond the boundaries of specific organizations. They provide the basis for action across the whole system, forging an interdependent network of organizations that work together to deliver high-quality care. Given that organizations cannot work in isolation to achieve the best possible care, it follows that their cultures need to be conducive to interdependent working within and across the system. This is a core argument for collective leadership, as is the view expressed by Bennis (1999) that “none of us is as smart as all of us”.

Collective leadership means the distribution and allocation of leadership power to wherever expertise, capability and motivation sit within organizations (West et al., 2014). The purposeful, visible distribution of leadership responsibility on to the shoulders of every person in the organization is vital for creating the type of collective leadership that will nurture the right culture for health-care (McCauley, 2011). In such a culture, roles of leadership and “followership” shift, depending on situational requirements. Collective leadership creates the culture in which high-quality, compassionate care can be delivered.

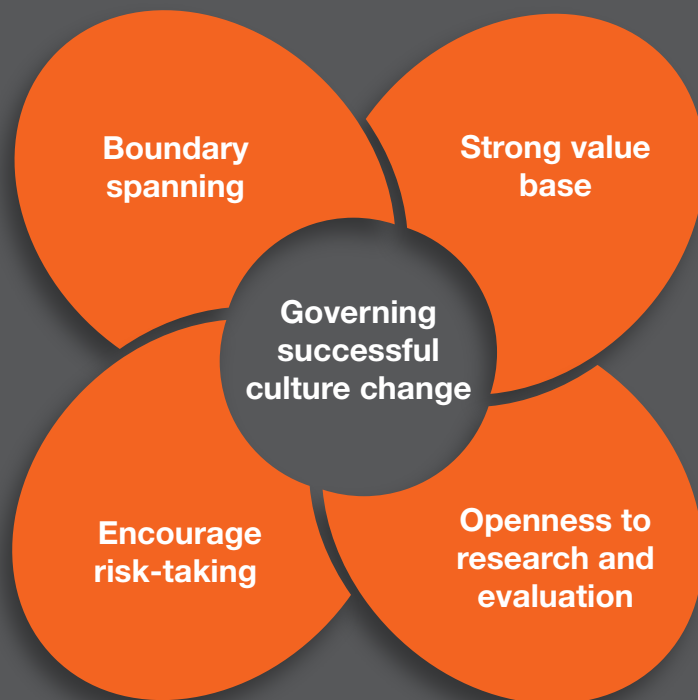
Nurturing and developing system leaders is a priority, as has been pointed out in several chapters, notably 6, 7 and 11. But the development and training of effective system leaders goes beyond merely equipping them with a repertoire of core competencies or capabilities.

“Relentless relationship-building” is key since, as mentioned, no system leader can operate in isolation or do it alone (Senge, Hamilton & Kania, 2015). A critique of leadership development warns of the obsession with leadership competencies and the neglect of context, the assumption being that leadership is a universal quality that is easily transferable from one situation or setting to another (Edmonstone, 2013). But such simplistic thinking is unhelpful, since leadership occurs in a social context that is dynamic, often chaotic and almost always uncertain. It requires working creatively with complexity and accepting that not everything can be resolved (Plsek & Wilson, 2001). The concept of “emergence” is important, as this suggests there are no right answers – only good ideas and possibilities. As an alternative to competence, Edmonstone (2013:533) proposes the idea of capability – “the extent to which individuals and groups can adapt to change, generate new knowledge and continue to improve their performance where there is little certainty or agreement”. Capability cannot be taught in any formal sense, but it can be developed through individual and group transformation processes, in which competencies are continuously revisited and adapted to changing circumstances.

## Factor 4: Supportive organizational culture

“Culture” is a fashionable and often overused term, as well as being a difficult topic to study. Here it refers to deep-seated assumptions and values, officially espoused ideologies and patterns of behaviour. Culture can serve as a barrier to change and create inertia. In contrast, a supportive culture can challenge and change beliefs about success and how to achieve it. Leaders can be agents for culture change. Key features governing successful culture change include: flexible working across boundaries (for example, by “boundary-spanners”, that is, people who operate at the edges of organizations and are skilled at working across them, rather than being located at the centre of organizations (Williams, 2013); encouraging risk-taking; openness to research and evaluation; and a strong value base.

Virtually all these features are alluded to in Chapters 6 to 14. With regard to governance (Chapter 6), for instance, consideration could be given to obtaining formal written commitments or pledges from key partners, which state what they will do to implement an agreed change or innovation. This might take the form of a social contract, or compact, with staff, linked to incentives. It would then be possible to develop a change management plan, inspired by the vision for NCD



prevention and management, which would include a communication plan and a workforce development plan. Moves towards multidisciplinary primary care (Chapter 8) must go beyond defining and putting together the right skills; the success of any multidisciplinary team will depend on identifying, understanding and managing a wide variety of social and procedural elements, which collectively make up the organizational or team culture.

All health systems comprise a complex set of cultures, many of them arising from the diverse professional and occupational groups that make up health systems, and trying to shape these cultures in order to improve the quality of care has been at the heart of many, though not all, large-scale change initiatives (Degeling, Hunter & Dowdeswell, 2001).

A key debate in the change management literature revolves around whether behaviour change is achieved through focusing on culture or structure (Parkin, 2009). The interaction between these is complex and dynamic. An oft-quoted saying is that “culture eats structure for breakfast”, and while there is some truth in this, it does not negate the significance of structure in shaping behaviours. Group and organizational culture can influence the development of structures but over time, as they mature, structures come to dominate and become the “primary culture-creating mechanisms that constrain and control employees” behaviour” (Schein, 2004:262). As Pettigrew et al. (1992) found, “tremendous energy is required to effect cultural change”.

## Factor 5: Managerial-clinical relations

While relations between managers and all staff groups are important, the managerial-clinical interface is critically important in health systems, especially at a time of rapid change that can seem threatening to notions of clinical freedom and responsibility (Kornacki, 2015). Such relations vary markedly in practice and, as Kornacki observes, “the disconnect between managers and doctors is not exactly news”. Clinicians who are not supportive of change can exert a powerful block on it, even going so far as to sabotage it.

Working to understand each other’s cultures and roles may seem obvious but does not always happen naturally. Managers need to be immersed in clinical work in order to understand what clinicians value. For their part, clinicians in key managerial posts can be important



in gaining commitment from colleagues to change. Managers need to identify such people and foster alliances with them if the anxieties and stress that accompany adaptive change are to be acknowledged and resolved.

Finding an acceptable accommodation between clinicians and managers is critical to the success of efforts to tackle NCDs, as previous chapters (6, 7, 8, 9, 11 and 12) have shown. In particular, Chapter 9 highlights the fact that initiatives for the regionalization of specialist care are not easy to design and are even harder to execute. Professionally led change, with clinicians playing an important role in developing and leading some or all of the change processes, is a powerful and effective mechanism for making change happen. Experiments with medical or clinical directors in some countries may offer a way forward, although evaluations of these developments do not give grounds for optimism about the ability of clinicians to shift from a clinical to a managerial perspective (Degeling, Kennedy & Hill, 1998): “tribalistic” loyalties to their clinical base tend to prevail. Finding champions for change is an essential prerequisite for sustainable change. From their study of five professional subcultures (medical clinicians, medical managers, nurse clinicians, nurse managers, and lay managers), conducted in English and Australian hospitals, Degeling, Kennedy & Hill argue that medical and nurse managers are best placed to support change, with nurse managers the most supportive of the reform agenda. But even within the ranks of medical clinicians and medical managers, there is a significant minority who could be regarded as future change champions, as they support a team-based work process control model and strategies that seek to improve work systematization and service integration. In so doing, they have distanced themselves from their medical colleagues.

## Conclusions

Transforming health systems in a way that can successfully meet the urgent needs posed by NCDs demands continuity, consistency and constancy of purpose, combined with communicating the early “wins” to demonstrate what is possible. To achieve these objectives, the following mechanisms are being developed as the next steps in WHO’s health system transformation programme:

- mobilizing a network of experienced transformers (“critical friends”) to assist countries in the WHO European Region with their health system change agenda;
- dynamically tracking the application of know-how across Europe

and beyond;

- developing a checklist for assessing a health system’s readiness for change;
- developing tools and support for countries embarking on health system transformation to build capacity, and track and guide progress, using webinars where possible and appropriate;
- developing a series of case studies telling stories of health system transformation, including successes and failures;
- exploring different mechanisms and tools for patient and citizen engagement and for encouraging the public to enter into the process of dialogue in a responsible, informed and receptive way;
- establishing a Change Management Academy.

There can be no blueprint, manual or prescription to ensure that the health system transformations of the type needed to tackle NCDs, and as set out in this and the previous chapters, will succeed. Context is all-important. As Braithwaite et al. (2017:67) note, health systems are “ambiguous, deceptive and unpredictable ... Unforeseen consequences will always emerge. The best lessons are to go with the complexity flow, look at both the formal and informal dynamics, be alert for unintended outcomes, play a long game, and take advantage of emerging opportunities”.

These are not always easy or welcome messages for policy-makers to acknowledge or assimilate, when they are impatient to introduce reforms quickly within a short-term electoral cycle. Nevertheless, as this chapter has sought to demonstrate, it is possible to identify a number of factors that need to be in place if change is to occur and be sustained over time. The key ingredients for success are all to be found in the five pivotal factors that form part of the receptive contexts for change framework. These key ingredients are:

- creating strategic alignment: without a vision, there can be no alignment and hence no change;
- acknowledging the interconnections between the “whys”, “whats” and “hows” of change;
- working with professional cultures, particularly (although not exclusively) the clinical culture, which remains a powerful determinant of change (or the lack of it) in health systems;
- creating enabling environments that allow change to flourish, through adopting plan-do-study-act (PDSA) approaches;
- nurturing new leadership approaches based on a system approach;
- increasing patient and public engagement so they become co-producers of health;
- supporting evidence-informed policy that is timely and relevant.

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**World Health Organization Regional Office for Europe**  
UN City, Marmorvej 51, DK-2100 Copenhagen Ø, Denmark  
Tel.: +45 45 33 70 00 Fax: +45 45 33 70 01  
E-mail: [eurocontact@who.int](mailto:eurocontact@who.int)