

Better noncommunicable disease outcomes: challenges and opportunities for health systems

Assessment GUIDE





**World Health
Organization**

REGIONAL OFFICE FOR **Europe**

Better noncommunicable disease outcomes:
challenges and opportunities for health systems

Assessment Guide

Abstract

This document contains guidelines for country assessments that aim to identify health system challenges and opportunities to improve outcomes for noncommunicable diseases (NCD). The guide outlines a five-step process to arrive at policy-relevant and contextualized conclusions, starting from an analysis of key indicators for NCD outcomes, which is then linked to the coverage of core population interventions and individual services. This is followed by an in-depth exploration of the health system challenges that prevent more extensive coverage with core NCD interventions and services, as well as identification of opportunities. The assessments also explore innovations and good practices that can be used for cross-country learning. The assessments conclude by producing contextualized country-specific policy recommendations.

Keywords

CHRONIC DISEASE
HEALTHCARE SYSTEMS
UNIVERSAL COVERAGE
HEALTH PROMOTION
PRIMARY HEALTHCARE
SOCIAL DETERMINANTS OF HEALTH

Address requests about publications of the WHO Regional Office for Europe to:

Publications

WHO Regional Office for Europe

UN City, Marmorvej 51

DK-2100 Copenhagen Ø, Denmark

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the Regional Office website (<http://www.euro.who.int/pubrequest>).

© World Health Organization 2014

All rights reserved. The Regional Office for Europe of the World Health Organization welcomes requests for permission to reproduce or translate its publications, in part or in full.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use. The views expressed by authors, editors, or expert groups do not necessarily represent the decisions or the stated policy of the World Health Organization.

Text editing: Patricia Butler

Book design and cover design: Christophe Lanoux, Paris, France

Contents

Acknowledgements.....	5
Foreword.....	6
Introduction and rationale	7
1. Noncommunicable disease outcomes	9
2. Coverage of core NCD interventions and services	11
2.1 Population interventions	11
2.2. Individual services	12
3. Health system challenges and opportunities to scale up core NCD interventions and services	15
Challenge 1. Developing political commitment to better NCD prevention and control	16
Challenge 2. Creating explicit processes for setting priorities and limits	17
Challenge 3. Strengthening interagency cooperation	17
Challenge 4. Enhancing population empowerment	18
Challenge 5. Establishing effective models of service delivery	19
Challenge 6. Improving coordination across providers	20
Challenge 7. Taking advantage of economies of scale and specialization	21
Challenge 8. Creating the right incentive systems.....	22
Challenge 9. Integrating evidence into practice	23
Challenge 10. Addressing human resource challenges	23
Challenge 11. Improving access to quality medicines for NCD	25
Challenge 12. Strengthening health systems management	26
Challenge 13. Creating adequate information solutions	27
Challenge 14. Overcoming resistance to change	28
Challenge 15. Ensuring access to care and reducing financial burden.....	28
Connecting core interventions and services with the fifteen challenges	29
4. Innovations and good practices.....	31
5. Policy recommendations	32
References.....	33
Annex 1. Country subgroups.....	33
Annex 2. Criteria for scoring coverage of population interventions.....	34
Annex 3. Criteria for scoring coverage of individual services for CVD and diabetes.....	36
Annex 4. Worksheet for population interventions and health system challenges.....	38
Annex 5. Worksheet for individual core NCD services (CVD) and health system challenges	40

Acronyms and abbreviations used in this document

AMI	acute myocardial infarction
CIS	Commonwealth of Independent States
CVD	cardiovascular disease
ECG	electrocardiogram
EU	European Union
HIS	health information system
HSS	health system strengthening
NCD	noncommunicable diseases
NRT	nicotine replacement therapy
OOP	out-of-pocket payments
SDR	standardized death rate



Acknowledgements

This country assessment guide was produced under the overall direction of Hans Kluge, Director of the Division of Health Systems and Public Health and Gauden Galea, Director of the Division of Noncommunicable Diseases and Life-course in the WHO Regional Office for Europe.

The team leader and principal writer for the report was Melitta Jakab, Senior Health Economist in the WHO Barcelona Office for Health System Strengthening.

Invaluable contributions and comments were provided by: Hanne Bak Pedersen, David Beran, Joao Breda, Tatyana Elmanova, Tamas Evetovits, Jill Farrington, Jarno Habicht, Loraine Hawkins, Belinda Loring, Frederiek Mantingh, Galina Perfilieva, Kristina Mauer-Stender, Anna Roepstorff, Marc Roberts, Nina Sautenkova, Maria Skarphedinsdottir, Barton Smith, Erica Stukator Barbazza, Juan Tello, and Evgeny Zheleznyakov.

The support of the Department of Health of the Autonomous Region of Catalonia, Spain and of the Ministry of Health of the Russian Federation in partially funding this project is gratefully acknowledged.

Grateful thanks are extended to Patricia Butler for language editing and Christophe Lanoux for the design layout and typesetting of this report.



Foreword

Noncommunicable diseases (NCDs) are the leading cause of death, disease and disability in the WHO European Region. Recognizing the growing burden of NCDs, and their significant economic and social impact, WHO Member States at the World Health Assembly in 2012 committed themselves to reduce premature mortality from NCDs by 25% by 2025. This is a landmark commitment towards accelerating health gains globally and in our Region.

The WHO Regional Office for Europe has embarked on an interdivisional work programme: *Better noncommunicable disease outcomes: challenges and opportunities for health systems*. The work programme seeks to conceptualize a comprehensive health system response to NCDs, carry out country assessments of health system challenges and opportunities, support Member States in developing and implementing policy responses, and share lessons learnt across the Region. The overarching aim of the work programme is to produce pragmatic, implementable and contextualized policy recommendations to improve NCD outcomes throughout the Region. We expect that the one-WHO approach embedded in this work programme will maximize the impact on NCD outcomes at the country level.

This work programme is fully aligned with the principles and strategic objectives of *Health 2020: a European policy framework*, and contributes towards implementation in two of its four priority areas: tackling noncommunicable diseases (priority 2) and strengthening people-centred health systems (priority 3). Importantly, the approach goes beyond national averages and seeks to detect trends for population subgroups according to their social determinants of health, in order to identify the vulnerable. Thus, we hope not only to improve national NCD outcomes but also to reduce inequalities.

This country assessment guide is the first output of the work programme. It is grounded in country processes and consensus-based multidisciplinary teamwork. The guide has been developed with input from a committed group of experts inside and outside WHO, and refined through pilot-tests in five countries.

We believe this guide will provide a new lens through which Member States can assess the performance of their health system in preventing and controlling noncommunicable diseases. It is our hope that implementing the pragmatic policy recommendations resulting from the country assessments will enable us to build a healthier Europe for ourselves and our children.



Dr Hans Kluge
Director
Division of Health Systems and Public Health



Dr Gauden Galea
Director
Division of Noncommunicable
Diseases and Life-course

Introduction and rationale

Noncommunicable diseases (NCDs) are the leading cause of death, disease and disability in the WHO European Region. The four major NCDs (cardiovascular disease, cancer, chronic obstructive pulmonary diseases and diabetes) account for the vast majority of the disease burden and of premature mortality in the Region. In Europe, NCDs (more broadly defined) account for nearly 86% of deaths and 77% of the disease burden, putting increasing strain on health systems, economic development and the well-being of large parts of the population, in particular people over 50 years of age.¹

NCDs also have significant macroeconomic and poverty impact. Most NCDs are chronic, requiring repeated interactions with the health system, with recurring and continuous medical expenditures which may become catastrophic and lead to impoverishment. Loss of productivity as a result of NCDs is significant: it has been estimated that for every 10% increase in NCD mortality, economic growth is reduced by 0.5%.²

Several policy documents have called for a comprehensive health system response to reduce the NCD burden;^{3,4} however, there is a lack of pragmatic implementable policy recommendations on what such a response should include.

To fill this gap, the WHO Regional Office for Europe has embarked on an ambitious work programme, jointly led by the Division of Health Systems and Public Health and the Division of Noncommunicable Diseases and Life-Course Approaches. The work programme consists of conceptual work, country assessments, and policy papers on cross-cutting health system strengthening (HSS) issues that could accelerate improvements in NCD outcomes.

The country assessments aim to: (1) produce pragmatic and implementable policy recommendations for health system strengthening, to allow faster improvements in key NCD outcomes; (2) synthesize knowledge and experience in the countries of the Region on common health system challenges and promising approaches to overcome them; and (3) build capacity in policy analysis, policy development, and implementation through dialogue around HSS and NCD.

This document contains guidelines for the country assessments, presented in five sections (Table 1). Each country assessment starts with an analysis of health system performance related to key NCD outcomes (section 1), which is linked to the coverage of core population interventions and individual services (section 2). This is followed by an in-depth exploration of the challenges that prevent more extensive coverage of core NCD interventions and services, as well as identification of opportunities to overcome them (section 3). The assessments also explore innovations and good practices (section 4) to be used for cross-country learning. The assessments end with contextualized country-specific policy recommendations (section 5).

“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 supply of medicines, referral system and empowerment of people for self-care, all, over a sustained period of time.”

WHO³

“A key requirement is a comprehensive approach to health system strengthening to deliver services for all common diseases during the life-time, with a patient centered mode of delivery.”

Beaglehole et al.⁴

Table 1. Structure of the country assessment

SECTION	OBJECTIVE
1. Health system performance in relation to NCD outcomes	Highlight the country’s performance in terms of improving NCD outcomes and the likelihood of meeting the global target of 25% reduction in mortality by 2025, as set in the WHO Global Monitoring Framework. ⁵
2. Score card for core population interventions and individual services	Focus on the coverage of core NCD interventions and services and link to health behaviour and outcomes.
3. Health system challenges and opportunities	Analyse the presence and extent of 15 common health system challenges and opportunities that impede or facilitate the delivery of core services.
4. Spotlight on health system innovations and good practices	Highlight good practices and innovations in the health system, with evidence of their impact on NCD-related core services and outcomes.
5. Policy recommendations	Provide prioritized policy recommendations for the country to address health system barriers and provide input into NCD and HSS action plans.

The operational approach to HSS of the WHO Regional Office for Europe informed the structure of this guide.⁶ The essence of this operational approach is to put cost-effective and high impact core services in the spotlight and identify health system challenges that impede their implementation at scale. The section on health systems challenges and opportunities was developed based on collaboration between the Regional Office and the Harvard School of Public Health and outlined in the background paper on Better Noncommunicable Disease Outcomes: Fifteen Challenges and Opportunities for Health Systems by Roberts & Stevenson.⁷ The guide was pilot-tested in 2013 in five countries: Hungary, Kyrgyzstan, Republic of Moldova, Tajikistan and Turkey. The guide is a living document, and will be refined in light of future country assessments, taking into account the lessons learnt through the process. Eventually, the guide will be made available to Member States for self-assessment.

The results of the country assessments will feed into national processes for defining country-level action plans on health system strengthening and NCDs. Global and regional action plans on NCDs are already available to inform these processes. The country assessments, however, go a step further, and aim to identify challenges and opportunities that may impede or facilitate successful implementation and scaling-up of key interventions and services.



1. Noncommunicable disease outcomes

The country assessment will start with a thorough analysis of key noncommunicable disease outcome indicators, as outlined in Table 2. These indicators have been derived from the global monitoring framework approved by the World Health Assembly in May 2013, taking into account the availability of relevant data in the WHO Health-For-All Database.

- Assessment teams should note time trends in key outcome indicators since the early 1990s (if possible). It is appropriate to comment on data quality, reliability and comparability.
- The analysis should set the national indicators in a regional context, comparing results with those of countries of a similar level of development as well as with averages for groupings within the European Union and for the former Commonwealth of Independent States (CIS).^a The assessment team should comment on whether the country is on track to meet the target of 25% mortality reduction by 2025⁸ with current efforts or whether intensified efforts may be needed.
- An analysis of equity should be incorporated, looking at variations by sex, region and socioeconomic status.

Table 2. Key outcome indicators for NCDs*

Potential indicators	Lens and breakdown	Questions
SDR for diseases of the circulatory system, per 100 000, ages 0-64 years,	Total Gender Region Socio-economic status	Observe long-term time trends. Compare indicators with those for the CIS, EU-15 and EU-12 countries (see Annex 1) and other countries at a similar level of socioeconomic development. The Global Monitoring Framework calls for a 25% reduction in mortality from the four main NCDs by 2025. Comment on whether the country is likely to achieve this if current trends continue.
SDR for ischaemic heart disease, per 100 000, ages 0-64 years		
SDR for cerebrovascular diseases, per 100 000, ages 0-64 years		
SDR for diabetes, per 100 000, all ages		
SDR for cancer, per 100 000, ages 0-64 years		
SDR for cancer of the cervix , per 100 000 women, ages 0-64		
SDR for cancer of the breast, per 100 000 women, ages 0-64 years		
SDR for chronic liver disease and cirrhosis, per 100 000, all ages		
SDR for bronchitis, emphysema and asthma, per 100 000, ages 0-64 years		

Source: Health For All database and national mortality statistics.

* SDR: standardized death rate; CVD: cardiovascular disease.

^a See Annex 1 for an overview of the relevant country groupings.

Country teams are also encouraged to do a more complete epidemiological analysis, supplementing mortality data with data on incidence and morbidity. This part of the analysis is not standardized across the country studies; each country team can decide on the extent of their epidemiological analysis, depending on necessity, data availability and other constraints.



2. Coverage of core NCD interventions and services

The second step in the country assessment is to review the coverage of core population interventions and individual services that are critical to achieve good NCD outcomes. Core interventions and services are evidence-based, high-impact, cost-effective, affordable and feasible to implement in a variety of health systems.⁹ The teams should link the patterns of health outcomes identified in section 1 to the coverage of core interventions and services. A special effort should be made to identify data that can be disaggregated by socioeconomic status, to assess the equity of coverage. This section sets out the core population interventions and individual services.

2.1 Population interventions

Population interventions are grouped around three main areas: prevention of smoking, prevention of harmful use of alcohol, and improvement of diet and physical activity. A set of core interventions within these areas have been identified and the team should assess the extent of their implementation. To the extent possible, the effectiveness of the implemented interventions will be assessed against key health behaviour indicators, preferably chosen from the nine voluntary targets and 25 indicators proposed as part of the global NCD action plan (Table 3).

Table 3. Core population-based NCD interventions and global targets

Relevant voluntary global targets by 2025	Core interventions
30% reduction in the prevalence of current tobacco use in persons aged 15+	<ul style="list-style-type: none"> • Wide range of anti-smoking interventions <ul style="list-style-type: none"> – 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 (NRT)*
At least 10% reduction in the harmful use of alcohol	<ul style="list-style-type: none"> • Interventions to prevent harmful alcohol use <ul style="list-style-type: none"> – 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*
Halt the rise in diabetes and obesity 30% reduction in mean population intake of salt/sodium 10% reduction in the prevalence of insufficient physical activity	<ul style="list-style-type: none"> • Interventions to improve diet and physical activity <ul style="list-style-type: none"> – 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* – Promote awareness about diet and physical activity*

Source: Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020;

* Indicates interventions addition to those mentioned in the Global Action Plan to allow more comprehensive assessment.

Country teams may use key documents, key informant interviews, prior analytical work, quantitative data analysis, and triangulation of the various sources to assess coverage of these interventions. The final assessment should be a consensus between the local and international expert teams and national authorities.

A “traffic light” system may be used to facilitate analysis and summary of results, with interventions rated as extensive, moderate or limited. In the pilot assessments, some countries found that the traffic light system was a useful way of identifying the areas where they were doing well and where the greatest efforts were needed. Others, however, felt that the value of this exercise was in the discussion around coverage of core services and that the rating itself was not important. Teams may make this decision in the preparatory phase of the assessment or during the assessment itself; the approach used should reflect the specific situation of the country in question.

For the teams that wish to proceed with a traffic light assessment, Annex 2 provides detailed criteria for scoring population interventions, based on international evidence and commitments. Briefly, the three categories are as follows.

- **Extensive interventions.** There is evidence of extensive commitment demonstrated through strategies, programmes and interventions in line with international best practice, 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, unimplemented initiatives, and no evidence of population behaviour change for key risk factors.

Where possible, programme design in key risk factor areas should be linked to indicators of behaviour change. The following minimum set of indicators should be reported, either from national sources or from the Health-For-All database:

- total alcohol consumption per capita (among people 15 years and older);
- age-standardized prevalence of overweight in adults (people 18 years and older);
- age-standardized prevalence of current tobacco smoking (among people 15 years and older).

2.2. Individual services

A similar exercise will be carried out for core individual services. These services are focused on early detection, proactive disease management and secondary prevention for cardiovascular disease, diabetes, and selected interventions for cancer (see Table 4). Effective delivery of most of these services requires people-centred primary health care with well organized links to population outreach activities, acute and chronic care settings. In Table 4, “first line” refers to very cost-effective services and “second line” refers to moderately cost-effective services; the latter are included as they allow a more comprehensive assessment of the effectiveness of the health care system.

Table 4. Core individual NCD services and global targets*

Relevant voluntary global targets by 2025	Core services
<p>At least 50% of eligible people receive drug therapy and counselling to prevent AMI and stroke</p> <p>25% reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure</p>	<ul style="list-style-type: none"> • CVD and diabetes – first line <ul style="list-style-type: none"> – 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 prevention in high-risk groups and secondary prevention after AMI, including acetylsalicylic acid • CVD and diabetes – second line <ul style="list-style-type: none"> – Rapid response and secondary care interventions after AMI and stroke*
	<ul style="list-style-type: none"> • Diabetes <ul style="list-style-type: none"> – 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)
	<ul style="list-style-type: none"> • Cancer – first line <ul style="list-style-type: none"> – Prevention of liver cancer through hepatitis B immunization – Screening for cervical cancer and treatment of precancerous lesions • Cancer – second line <ul style="list-style-type: none"> – Vaccination against human papilloma virus 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 linked with timely treatment – Oral cancer screening in high risk groups linked with timely treatment

Source: Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020;

* Indicates interventions addition to those mentioned in the Global Action Plan to allow more comprehensive assessment.

Ideally, country teams should report data and indicators of actual coverage levels. This will be possible in countries with good information and patient registries at the primary health care level. However, in many countries, the information system may not allow detailed coverage data to be extracted. Facility level records and surveys may give some idea of coverage rates. In addition, key informant interviews, prior analytical work, quantitative data analysis, and triangulation among all sources can help in estimating coverage levels. The final estimate should have the consensus of local and international expert teams and national authorities.

For the teams that wish to proceed with a traffic light assessment, Annex 3 provides detailed criteria to score individual services for cardiovascular disease (CVD) and diabetes, based on international evidence and commitments. Briefly, the three categories are as follows.

- **Extensive coverage.** Evidence of extensive coverage of core individual services, evidence of large-scale early detection, registration systems, proactive disease management, and prevention of complications. Outreach mechanisms exist and are extensively used to target risk groups. Mechanisms are in place to improve compliance and adherence.
- **Moderate coverage.** Coverage of core individual services varies, early detection could improve, registration systems are in place but underused or incomplete, proactive disease management is practised to some extent, and there is some focus on prevention of complications. Outreach mechanisms are used to some extent to target risk groups, but not systematically. Mechanisms to improve compliance and adherence are not systematic.
- **Limited coverage.** Coverage of core individual services is low, CVD, diabetes and cancer are generally detected at advanced stages, and there are no systematic attempts at early detection. Registration systems are not in place or not used. Primary health care is reactive to patient symptoms but does not proactively manage disease and there is little focus on prevention of complications. There is limited reliance on outreach mechanisms to target risk groups. Mechanisms to improve compliance and adherence are not in place.



3. Health system challenges and opportunities to scale up core NCD interventions and services

Many countries find it challenging to scale up core NCD interventions and services outlined in the previous section despite overwhelming evidence of their cost-effectiveness and significant population health impact. At the same time, inspiring experiences are also emerging providing opportunities for cross-country learning after dye adaptation. In its third section, the country assessment will review the health system challenges that may undermine delivery of core interventions and services and prevent progress towards the “25 by 25 targets”. Simultaneously, it will also highlight opportunities to scale up selected interventions and services.

Table 5 lists fifteen health system features that can represent a challenge or present an opportunity for improved delivery of core NCD interventions and services. Each is described below, with a set of semi-structured questions to guide the thinking of assessment teams. The questions range from narrow to broad and from specific descriptive to essay-type questions, progressively. The accompanying background paper¹⁰ provides further guidance on the content of the each health system challenge/opportunity. We have made no attempt here to be complete and country teams may wish to go beyond what is proposed, develop more detailed interview questionnaires, surveys or focus group guides with patients and doctors, and explore interesting lines of questioning that go beyond the prompts listed below.

Table 5. Fifteen health system challenges and opportunities to improve NCD outcomes

Political commitment to NCDs	Explicit priority-setting approaches	Interagency cooperation	Population empowerment
Effective model of service delivery	Coordination across providers	Regionalization	Incentive systems
Integration of evidence into practice	Distribution and mix of human resources	Access to quality medicines	Effective management
Adequate information solutions	Managing change	Ensuring access and financial protection	

Source: Roberts MJ, Stevenson MA. Better Noncommunicable Disease Outcomes: Fifteen Challenges and Opportunities for Health Systems. Copenhagen: WHO Regional Office for Europe, 2014 (forthcoming)

Challenge 1. Developing political commitment to better NCD prevention and control

Political commitment and support to NCD control are important in order to keep NCDs high on the agenda, move forward with politically difficult reforms (e.g. anti-tobacco policies and reform of medical education), explicitly target risk groups and underserved populations, and ensure that commitments are translated into action. The following questions focus on identifying the level of political commitment to improve NCD care. Most questions focus on the national government but, where appropriate, consideration should be given to local government processes as well.

1. To what extent has improving the performance of the health care system in general been an explicit priority for the government? Has it been the focus of political discussion or legislative action? What specific problems or deficiencies have been the targets of such efforts?
2. Is there reference to NCD prevention and treatment in national development plans, by linking the disease burden to economic growth and the social development agenda? Are there any champions for NCDs in the government and among politicians?
3. Outside of government, is much attention given to NCDs in discussions of the performance of the health system by civil society groups, patients, activists, intellectuals, etc?
4. Is control of NCDs an explicit part of the government's formal, published or announced health policy or strategy? Has the national political leadership made any efforts to highlight the importance of NCDs or characterized specific NCDs as priorities for action? How do those inside and outside government characterize the relative importance of NCDs versus other health problems?
5. Have any health system reforms been specifically justified in terms of improving NCD outcomes? What actions have been taken (or at least proposed) and in your judgement are these steps realistic and relevant to this task?
6. Is there an explicit budget allocation process linking the allocation of funds to health priorities? At what level does this take place? How have NCDs fared in this budget allocation process? Have there been any specific allocations for specific diseases, conditions or services?
7. Do the population-based interventions listed in Table 3 receive stable funding from the government budget? Can you assess the level of funding of these programmes and interventions? Have there been efforts to increase public funding for preventive services?
8. What percentage of the population is covered by the various public insurance funds? Which of the individual services listed in Table 4 are covered in the benefit package of the various funds? To what extent are these services subject to co-payments and deductibles? In this respect are NCD services treated more or less generously than other services?

Challenge 2. Creating explicit processes for setting priorities and limits

With the rising burden of NCDs, an affordable and cost-effective health system has to make difficult decisions about not only what interventions and services to provide but what interventions and services not to provide. Politically robust, evidence-based and transparent processes that shield decisions from special interests will foster public acceptability of such priority-setting policies. The following questions are intended to guide the assessment team in identifying whether such explicit, transparent and evidence-based priority-setting approaches exist.

1. Describe the budgeting process and how the level of government expenditure for health is established year on year. Is it explicitly linked to the disease burden? Are there efforts to use cost-effectiveness as a criterion to allocate funds, including evidence on the cost-effectiveness of NCD services? Are there explicit processes for deciding the funding of population-based versus individual services? For individual services, are there explicit processes to establish the share of funding for primary health care versus secondary and tertiary care? Have there been any studies, reports or analyses of this sort?
2. Are there mechanisms to assess the distribution of NCD risk factors and outcomes across socioeconomic groups, including by income, place of residence, sex and ethnicity? Are there mechanisms to respond to inequitable NCD risks and outcomes in health funding, planning and service design? Is equity taken into account when setting priorities? Is there a government or constitutional commitment to health or social equity for the population?
3. Has the government made any explicit decisions not to cover specific conditions, not to provide certain service or not to offer certain medications as part of public sector essential medicines programmes? If so, what process was used to reach these decisions? Have these been announced and explained publicly?
4. At the facility level, how does rationing (explicit or implicit) take place? In particular, how do specialists in cancer care assess the capacity of the country to treat various conditions? Are there particular drugs, facilities or types of equipment that they would like to have but cannot get funding for?
5. What is the impact of rationing on patients? What happens to those who do not receive care for certain conditions because of limitations in public funding? Is there a private sector in the country that provides such care to patients who can afford it? Does the government ever finance patients to seek care abroad and, if so, how is eligibility for such support determined?
6. Are there organized palliative care services for patients who would not benefit from further aggressive treatment? How are they financed and how widely available are they?

Challenge 3. Strengthening interagency cooperation

Some of the core interventions and services that have the greatest impact on NCD outcomes (e.g. tobacco control) require concerted action by several government agencies. The following questions focus on documenting mechanisms for interagency cooperation and their effectiveness.

1. What steps have been taken by the government (above the level of the Ministry of Health) to mobilize multisectoral or whole-government action on NCD prevention and control?
2. What specific steps, if any has the Ministry of Health taken to mobilize the assistance of other agencies in adopting intersectoral action to implement the population interventions in Table 3? If these efforts were not successful, where did the opposition come from, both inside the government (e.g. the Ministry of Finance) and outside (e.g. the tobacco industry)?
3. Are there joint cross-sectoral processes for goal- and target-setting, policy development, implementation, monitoring, and reporting related to NCDs? Do any formal cross-ministry committees or coordinating entities exist at the cabinet or sub-cabinet level, focused on health policy in general or the control of NCDs in particular? How successful are they in moving policies forward?
4. If no, are there intersectoral mechanisms for other health issues or health determinants (e.g. Health in all Policies (HiAP), sustainable development, inclusive growth, social inclusion, Roma action plans)? Do these mechanisms have the potential to scale up action on NCD prevention, including addressing the social determinants of NCDs?
5. What are the financial incentives or disincentives to working across sectors? Is there any evidence of pooled budgeting? How has accountability been shared?

Challenge 4. Enhancing population empowerment

People can be regarded as the frontline workers for many NCD conditions. They need to be aware of potential conditions, show up for screening tests, change unhealthy practices, follow up on diagnostic tests, and adhere to prescribed medications and instructions from health personnel. This requires knowledge, skills and motivation. The following questions explore mechanisms and incentives to empower people to be frontline workers for existing or future chronic conditions.

1. Are there programmes to build health literacy in general, to empower citizens to take responsibility for their own health, to claim their rights within the health system, and to know what they are eligible for, and where and how to seek services (especially for relatively disempowered and excluded social groups)?
2. Are there explicit policies, pathways, programmes or guidelines on patient education for people with NCDs? Is funding explicitly designated to support these activities and is there a specific individual in the Ministry of Health responsible for developing and implementing such programmes? Is a data-gathering system in place to record the extent of such programmes and has there been any effort to evaluate the effectiveness of these programmes?
3. Is there any organized effort to establish peer-to-peer patient support groups? To what extent do these actually function? Have there been any evaluations of their impact?
4. Are there any financial incentives to patients to participate in any of these activities (e.g. reduced co-payments for medicines)?
5. To what extent do patients have access to the information they need to be more empowered? Can they see their own medical records? Are there web-based sources of information that patients can and do use? Are there disease-based patient

advocacy groups that provide information and support and how well do they function, especially in remote areas?

6. To what extent are there cultural, language and gender barriers to patient empowerment within the health care system? What is the tradition of doctor-patient relationships in the country? To what extent is it customary for doctors not to tell patients the details of their condition (e.g. for cancer), or for younger family members not to tell their older relatives? How is the relationship between patients and other health workers, such as nurses?
7. To what extent are there more general cultural barriers that limit patient empowerment? Are there gender roles and expectations that play a role (e.g. men have to be tough, or women cannot expect attention to their needs)? To what extent do attitudes towards mental illness or patterns of substance abuse complicate communication and care?
8. To what extent are certain groups in the population more disempowered than others? What measures have been undertaken to empower marginalized or vulnerable groups or to support them in accessing health services (including screening and health promotion)? What measures have been taken to ensure that they receive quality care throughout their interaction with the health service?
9. Has there been any discussion within the Ministry of Health, the Medical Societies or academic circles about the need for higher degrees of patient self-management, and new models of patient-centred care in light of the rising prevalence of NCDs?

Challenge 5. Establishing effective models of service delivery

An active public health system focused on health priorities, with primary health care acting as a hub for other levels and services, is the cornerstone of a cost-effective health system response to NCDs. A fundamental challenge is to establish “relationship-based care” in primary health care, which is ongoing, regular, and proactive rather than episodic and involving several uncoordinated specialists. Proactive primary care can manage chronic conditions before and after acute events, and there should be mechanisms to hand over patients seamlessly between levels of care with good flow of information. The following questions explore the model of service delivery and the extent to which the health system is organized to facilitate early detection and proactive disease management.

1. Is the public health system sufficiently focused on NCDs and are its structures adequately staffed and funded to carry out core functions? Does the public health system work with the primary care network to reach out to people to ensure early detection of disease and increase health literacy?
2. Are primary health care and family medicine well enough developed to be the centre of care for chronic disease patients? Is there an explicit policy to strengthen primary health care and restructure or downsize the hospital sector (particularly in transition economies)? Is the balance between primary care and hospital care appropriate, in particular from the angle of NCDs? To support your assessment, please gather data on hospitalization rates and per capita primary care visit rates, both in general and for key NCD conditions. (For example, the hospitalization rate for hypertension is a good tracer for an inappropriate level of inpatient care.)

3. How are most primary care sites staffed? What qualifications do physician and non-physician personnel have? Is there any requirement that staff be trained in primary care, family medicine, patient education, or NCD care? Which providers are involved in, and responsible for, NCD prevention and control? (For example, midwives may routinely carry out cervical cancer screening.) Are there any innovative examples of horizontal collaboration in delivering services to combat NCDs?
4. How is outpatient care provided in most settings? Do patients have a continuous relationship with an identified primary care worker who provides most of their care? In general, is the relationship continuous or episodic (triggered by acute events)? Do patients have any choice of provider? Are NCD conditions recorded in a register and are patients reminded by phone or mail to attend for check-ups?
5. What are the hours of operation of most primary care facilities, both in theory and in practice? Is there any system of appointments? How long are waiting times at facilities? How long are typical consultations and do they allow addressing needs for health promotion, prevention, disease management and patient empowerment? How do these basic operational factors affect perceptions of service quality and care-seeking for NCDs?
6. Is the task profile of the primary health care providers broad enough to cover most of the core NCD services or is it more narrowly focused? Have there been efforts to increase the status and task profile of the providers and, if so, what has been their effect? Are key diagnostic tests for NCDs available at primary health care level (e.g. measurement of blood pressure, blood sugar and cholesterol, and electrocardiogram (ECG)? Where does responsibility lie for screening (e.g. cervical screening) and immunization coverage (e.g. against hepatitis B)? Who ensures that data are collected and analysed? To what extent are individual service providers accountable for screening and vaccination?
7. How is NCD care provided in remote rural areas or in migrant settlements where there may be a lack of staff? Is there any system for rotating specialists to travel to these locations? Is there any organized system of telemedicine support for rural practitioners? Is there any organized evacuation system for acute cases?
8. How are patients referred to specialists or for inpatient care? Can patients go direct to specialists or hospitals? Is there any formal system or mechanism for referring patients back to the primary care level? Who has the initiative and responsibility to make the link? Is referral systematized and supported by good information technology? Do patient clinical records travel in either direction (see also challenge 6)?
9. Identify the factors that make it difficult for the primary care system to act as a hub for NCD care (providing patient education, ensuring coordination with specialists, making effective referrals to hospitals, making connections to social services, etc.).

Challenge 6. Improving coordination across providers

NCD patients often have multiple conditions and several kinds of health personnel may be involved in the care and management of one person. Often, non-medical staff may need to become involved. The questions below explore mechanisms and their effectiveness for coordinating the care of patients across the spectrum of care, including the different levels in the health system and beyond, to nursing and social care.

1. How effective is coordination among providers in the care of chronic NCD patients? How difficult is it for primary care providers to refer patients to appropriate

specialists? How effective is multidisciplinary cooperation (between physicians, nurses, health educators, etc.) in the outpatient setting? (Consider using specific conditions as tracers, for example, asthma, ischaemic heart disease, stroke or cancer.)

2. Assess the series of hand-overs in the care of acute events in patients with chronic NCDs –from the primary care provider, to the hospital, to the rehabilitation team. Is there easy access at each stage to patient records and information on medicines? (Consider tracer conditions, such as AMI or stroke, or surgery or chemotherapy in cancer patients.)
3. Assess the effectiveness of teamwork in the care of cancer patients. How well are the efforts of surgeons, radiation oncologists and medical oncologists coordinated? Is effective and appropriate use made of non-physician providers (e.g. nurses, radiation therapy technicians, nutritionists, social workers)?
4. After care for an acute event, is there a system for transferring the patient back to primary care, along with the patient records and other information the primary care provider needs to effectively manage the case?
5. How well do health services link with social service providers, especially in providing care to patients with complex needs or socioeconomic disadvantage?
6. What is the rate of loss to follow-up for key NCDs, and how does this vary between different social and ethnic groups?

Challenge 7. Taking advantage of economies of scale and specialization

For complex medical cases, the efficiency and quality of services are better in facilities that provide a greater volume of the particular service. The following questions explore the roles and responsibilities of successive levels of care in the treatment of complex cases.

1. Is there an explicit written plan that outlines the respective roles of successive levels of care (e.g. rayon, oblast, province)? How is compliance with that plan monitored? Is a specific person or unit in the Ministry of Health responsible for implementation of the plan?
2. How does the plan deal with the treatment of acute cardiovascular events, such as heart attacks and strokes? Are there any minimum requirements for hospitals to treat such cases? Do hospitals have to have dedicated units or staff to treat such cases? Is the number of such cases that the hospitals actually treat recorded, reported or monitored in any way?
3. How does the plan apply to cancer screening and treatment? Are there any minimum requirements for hospitals to treat cancer cases? Is the number of such cases that the hospitals actually treat recorded, reported or monitored in any way?
4. Is there a national cancer plan that specifies which kinds of cases should be treated in which facilities? Are specialized centres connected to medical schools?
5. Are there mechanisms to ensure equitable access to facilities, such as transportation allowances or assistance with housing for patients and families? What evidence is there (formal or informal) about the equity or inequity of access to specialist care?

To what extent does access depend on contacts, influence, income or other non-medical factors?

6. Are there any explicit guidelines on when to stop treatment or not to treat? Is there an organized programme of palliative care, which is offered to patients in such cases?
7. How many hospitals offer 24-hour emergency services? Is there a system of training and staffing of such facilities based on a recognized specialist qualification in emergency medicine?
8. Are there any public ambulance systems in the country? Are these organized and financed on a local, regional or national level? Is there a formal plan for emergency services? Are there any standards for the vehicles or training standards for the personnel?
9. Are there any data (e.g. response times) on the effectiveness of the ambulance service? What percentage of emergency or casualty patients are transported by that system as opposed to private vehicles, taxis, etc.? Are any data kept on what fraction of the fleet is available at any given time as opposed to out of service for repair?

Challenge 8. Creating the right incentive systems

To ensure delivery of core interventions and services, incentive systems need to be aligned across the different levels of care in the health system, outside the health system and on the demand side. The following questions explore current incentive arrangements, how they influence the behaviour of the actors in the system, and what impact this may have on the provision or consumption of core interventions and services.

1. Does the method of health system funding encourage or discourage population-based NCD prevention measures (e.g. tobacco and alcohol control, food reformulation)?
2. Does the method of health system funding encourage investment in comprehensive universal primary health care? Do provider payment mechanisms provide incentives to deliver core NCD services? In particular, are there any selective fee-for-service or payment-for-performance mechanisms to reward screening and disease management?
3. Do the incentive systems encourage providers to seek equitable coverage for patients in different socioeconomic and ethnic groups? Is the incentive system likely to exacerbate inequities, by discouraging providers from putting in extra effort or time to work with harder-to-reach groups?
4. Does the payment system have any perverse incentives that undermine good NCD care (e.g. incentives that encourage overhospitalization or short consultation times, or discourage screening)?
5. Are there financial or non-financial incentives for patient education and counselling about NCD risk factors and health behaviour change? Are there financial mechanisms to support and develop peer-to-peer education and support groups for key conditions?
6. Are there financial mechanisms to encourage the linkage of health service delivery with outreach and social care activities for those with chronic diseases, especially disability related to NCD?
7. Are there any demand-side incentives (or non-financial benefits) for patients to adhere to prescribed treatment?

Challenge 9. Integrating evidence into practice

Many studies over the past 30 years have shown that physicians have greatly varying patterns of practice and many do not follow evidence-based guidelines. The following questions explore mechanisms to integrate evidence into medical practice.

1. Is there a structured process in the country to develop clinical guidelines and pathways and are they based on the best international evidence?
2. How extensive are the guidelines and pathways that have been approved for the core services listed in Table 4? Please obtain copies of some of these for later review and illustration.
3. Which unit is responsible for developing guidelines and what rules or processes does it follow? What is its governance structure and what role—if any—do various interest groups play in the process? Are there formal public hearings or opportunities for public involvement in development? Does the unit have to explicitly justify its decisions? Is the capacity of the unit adequate to produce and review guidelines in a timely manner?
4. What is the process for disseminating new guidelines, training providers, and monitoring whether providers adhere to guidelines?
5. How—if at all—are new guidelines incorporated into health professional education and continuing education? In particular, are there any requirements for continuing education? How, if at all, are such requirements enforced? Which unit in the government is responsible for this function? In practice, who provides the training? What role do pharmaceutical companies play in continuing education?
6. Are quality improvement processes in place at facility level (not as pilot-tests) that allow the impact of guidelines to be strengthened? Are there any quality assurance processes above the facility level that monitor adherence to guidelines?
7. Is there ongoing assessment of the appropriateness of medical practice or of provider performance?
8. Are there any barriers to accessing the international evidence base, such as language issues or professional attitudes?

Challenge 10. Addressing human resource challenges

The quantity, distribution and training of human resources significantly affect the ability of the health system to respond effectively to NCDs. NCDs require a different approach than other illnesses, with ongoing relationships between patients and providers and motivation of people to change their behaviour. The following questions explore the distribution and mix of human resources, as well as the ability of the government effectively to plan and improve staffing patterns.

1. What is the capacity within the Ministry of Health for population health needs assessment, health planning, needs assessment, monitoring and priority-setting for NCD? What is the capacity within the health information system (HIS) for monitoring and evaluating NCD risk factors, services and outcomes, including the ability to disaggregate the information by socioeconomic factors, such as income, ethnicity, sex and place of residence?

2. Does the balance of the health workforce reflect the disease burden, and does it correspond to what is needed to prevent and control NCDs (prevention vs treatment, staff working on NCDs vs communicable diseases in the public health service, doctors vs nurses, primary care doctors vs specialists, etc.)?
3. How many health worker positions are vacant in the public sector?
 - a. Are the largest staffing problems in urban or rural areas? How are staff assigned to specific locations or positions? To what extent do academic performance, personal contacts or informal payments influence this process
 - b. Which skills and professional areas are most affected (primary care physicians, pharmacists, nurses, information technology specialists, etc.)?
 - c. To what extent are shortages the result of limited production of trained personnel in the country, emigration of trained personnel, movement to the private sector, movement out of the professional role, etc.?
 - d. Is there an office in the Ministry of Health responsible for tracking issues related to human resources for health? Does it make reliable estimates of the available human resources pool and the annual flows into and out of it?
4. What efforts, if any, have been made in recent years to expand training capacity or alter the content of training to meet the shortages? In particular, have there been efforts to increase the production of primary care personnel (doctors, nurses, etc.) or to increase the percentage of the curriculum devoted to NCDs, patient education skills, etc.?
5. Are any specific programmes in place to encourage staff to relocate to rural areas? What are they? Are there locational bonuses, privileged access to specialist training, housing or travel allowances or national service requirements? Has their impact been assessed and, if so, what has it been?
6. Has there been any use of task shifting (i.e. the use of providers with a lower level of training) to improve service delivery in rural areas? If so, what initiatives have been undertaken and what has been their impact?
7. What is the quality of the medical education curriculum in providing students with broad-based, competency-based education?
8. What is the quality, duration and content of internship and residency training for preparing primary health care providers and specialists to meet current needs in urban and rural areas?
9. Is there access to good quality professional development for primary health care providers and specialists? How does it relate to NCDs?
10. To what degree are health workers trained in population-based aspects of NCDs, health inequities, and the social determinants of NCD? What measures are taken to ensure that health workers have skills in cross-cultural and gender responsiveness?
11. To what extent—if at all—have efforts been made to recruit candidates for training from rural areas or ethnic minorities? What measures have been taken to retain these candidates throughout their training and in work? How many individuals have been recruited and have they returned to serve in their home areas?

Challenge 11. Improving access to quality medicines for NCD

The management of chronic NCDs typically requires patients to take their medicines regularly over a long time. However, limits and imperfections in the system of medicine supply and financing can disrupt access to quality medicines. The following questions aim to explore mechanisms for ensuring access to quality medicines.

1. In general, how do patients acquire medicines for NCDs? Are the medicines prescribed and purchased or are they dispensed by health personnel in service delivery settings? Are prescriptions entered into a database where they can be analysed? What are the legal restrictions on the selling of medicines without a prescription? To what extent are these enforced? What percentage of medicines comes through the public or the private sector?
2. To what extent does the supply and prescription of medicines for NCDs reflect appropriate evidence-based standards? Do the specific products supplied in the public sector or financed by the insurance systems make best-practice use of generic compounds? Are there any rules requiring generic prescribing or specifying the possibility for brand-name prescriptions to be filled by generic alternatives? If there are any available sales and distribution data by product in key NCD clinical areas (control of blood sugar, lipids) please get copies. If there are only informed estimates, please report these.
3. How are outpatient medicines financed? Is there any insurance coverage? If they are provided through the public sector, what are the co-payments? Are data available on the percentage of the cost of medicines paid out of pocket? Is there any formal or informal evidence of patients failing to take appropriate medicines for financial reasons?
4. In the private sector, how much price competition is there at the wholesale and retail levels? How well is competition working to create affordable prices? How do retail prices compare with regional or international benchmarks? Is there any monitoring of pharmaceutical prices? Is there any regulation of pharmaceutical prices or margins?
5. Are there any issues with regard to the availability of medicines for key NCD conditions, especially in rural areas? Are there supply chain problems at the retail level in either the public or the private sector? In particular, what is the reported frequency of stock-outs in public facilities? Has the government made any efforts to improve public sector supply chains and what has been the impact?
6. Are there procedural barriers to equitable access to NCD medications (e.g. unnecessary restrictions on what type of provider can provide which medicine, or the quantity of medicine that can be dispensed at any one time)?
7. How effective is the process for purchasing medicines for the public sector? Which agency is responsible and how is it held accountable for appropriate standards? How transparent is the bidding process and how much is done electronically with public reporting? How do prices paid compare with international best prices?
8. Which agency is responsible for the quality of medicines in the country? Who does the testing and how well equipped are the facilities and the staff? What percentage of imported medicines is tested? Is there any local pharmaceutical industry and what is the effectiveness of quality supervision of its production facilities?

9. Have there been any studies of the prevalence of substandard and counterfeit medicines and, if so, what have they shown? Is there a government programme to counteract the flow of such medicines and, if so, what has been its impact?
10. What is the typical level of education of sellers of retail medicines in both urban and rural areas? Are retail outlets licensed and do their proprietors have to have had specific training? Are these requirements enforced, especially in rural areas?

Challenge 12. Strengthening health systems management

Strong management is critical if high-quality interventions and services are to be implemented efficiently at all levels of the health system. The following questions explore mechanisms to strengthen management at all levels, in order to improve efficiency and quality of interventions and services.

1. What is the appointment process for health facility managers? Who makes decisions about appointments and on the basis of what processes and information? What incentives or pressures do those making appointments face with regard to the individuals they select?
2. Has health management been professionalized? What sorts of individuals (training, age, prior experience) typically fill management positions at the primary, secondary and tertiary level? In particular, what are their typical levels of managerial training and experience? Are there any formal management training requirements for such positions?
3. What is the scope of authority and responsibility of managers at the various levels with regard to hiring and firing, purchasing, contracting, organizing clinical services, improving quality and process, ensuring clinicians' compliance with guidelines and pathways, etc.?
4. What incentives do managers have, both economic and non-economic? Are there any performance-based financial rewards? Are there any performance-based systems of recognition or managerial career paths?
5. To whom do facility managers at various levels report? Are the "managers of managers" themselves trained and experienced managers? What information do these managers of managers routinely have for assessing the performance of facility managers? To what extent are managers held accountable for a facility's performance in NCD care? What incentives—if any—do managers of managers have to push for better delivery of health care?
6. What reports, if any, do managers of managers routinely receive about facility performance and at what intervals? Are they in paper or electronic form and are the formats standardized? What staff do the managers of managers have to support them in analysing the reports? Are the collected data on NCDs and facility performance evaluated at the policy development level? How does facility performance inform national policy development?
7. Is there any system for monitoring and rewarding facilities and individual practitioners for their clinical and service quality? Are there any routine reports and assessments of such performance? If so to whom do they go? Are there any studies of levels of patient satisfaction with primary care and screening services? What do they show?

8. Are there any particular features of the system of management in general that have an impact on the extent to which managers are held accountable, and have the authority they need, for improving NCD care, with regard to issues such as continuity of care, appropriate prescribing and patient education?

Challenge 13. Creating adequate information solutions

Information on performance of all levels of the health system is critical if the response to the NCD burden is to be adequate, timely and cost-effective. The following questions explore the usefulness of the information system for planning, implementing, and monitoring such a response.

1. What is the source of NCD outcome data? Is death certification universal and accurate, and are socioeconomic variables (e.g. ethnicity) accurately included in death certificates? Are there standardized national routine population-based surveys or data on NCD risk factors, health service utilization and outcomes? Is there a way of matching health service utilization and outcome data for NCDs with a population denominator?
2. Can data on NCD risk factors, service utilization and health outcomes be disaggregated by key equity parameters (e.g. socioeconomic status, sex, ethnicity, place of residence)? Is the same method used across all data sources, and are there routine quality control measures to ensure that data collection is complete and accurate?
3. Are data on NCD risk factors, health service utilization and outcomes routinely analysed, to assess trends in population coverage? Are the results publicly reported? Are they reported at subnational level, and are outcomes for different socioeconomic groups reported? Is there a mechanism for incorporating health information into the review of health funding, policies and plans?
4. Are there information systems that facilitate the task of primary health care personnel in managing chronic conditions, such as (a) patient call and recall systems with automatic reminders for check-ups and screening appointments and (b) patient records that facilitate risk stratification and care planning? What computer systems and internet connectivity do various levels of facility typically have and how skilled are personnel in their use?
5. Are there information solutions that facilitate coordination of care across levels and ensure data portability while protecting patient confidentiality?
6. Are there information solutions that enable patients to take a greater role in managing their own care, such as patient access to medical records or the use of email or other electronic means for patients to communicate with providers?
7. What systems are there for recording and reporting clinical quality indicators, especially for NCD patients?
8. What information systems exist for tracking outputs, service quality and other non-clinical information? Are workloads, through-puts, consultation times, waiting times, etc. recorded and reported to managers of managers or regional levels in any standardized way?
9. What systems exist for cost accounting and financial control? Are the definitions and categories in the accounting systems (e.g. the definitions of cost centres and the bases

for allocating indirect costs) standardized? What cost analyses are done routinely at the facility level and what is reported to higher levels?

10. In larger institutions, to what extent do managers of various clinical units receive regular reports about costs, quality and output, and to what extent are they held accountable for their performance?

Challenge 14. Overcoming resistance to change

All organizations are resistant to change; the status quo is comfortable. To transform health systems to provide an effective response to NCDs, change needs to be managed. The following questions explore whether there are mechanisms in place to manage change effectively.

1. To what extent have health system leaders explicitly identified changes in the health system – including in the organization and delivery of care – that they believe are needed to achieve better NCD outcomes? To what extent have they developed programmes at the system or facility level to implement those changes?
2. What barriers outside the health system limit the ability to change (e.g. behaviour of international agencies, donors and other government sectors)?
3. How—if at all—have facility managers been trained to implement change and what system of monitoring and support is in place to facilitate this?
4. Has there been any reaction from stakeholder groups, either inside or outside the system, to changes? What negotiations or advocacy efforts have been undertaken to enlist their cooperation?
5. Have leaders in the Ministry of Health undertaken any public information campaigns or social marketing efforts to enlist patient and citizen support for their change agenda?

Challenge 15. Ensuring access to care and reducing financial burden

Financial and non-financial barriers to health services prevent effective delivery of core interventions and services. The following questions explore the presence of financial and non-financial barriers to care and the extent to which they affect coverage levels of core interventions and services.

1. Are there any regular household surveys that allow the identification of barriers to access to care and of the financial burden for the patient? Is there any specific link in these surveys to NCDs or NCD risk factors? Can access barriers and financial burden be disaggregated by socioeconomic status, sex, ethnicity and other variables of interest from an equity standpoint?
2. Combining administrative sources on health service utilization and household survey data, assess the level of use of primary health care in total, by region, by income quintile and by other socioeconomic factors. Is it possible to analyse coverage of core individual services – such as hypertension control, hepatitis B immunization, and cervical cancer screening – by socioeconomic status? Are rates in line with

expectations based on regional averages and historical trends? Are there particular groups with unexpectedly low levels of utilization, particularly of primary health care, in relation to their risk (for example, men aged 45-60 years)? Does the survey report barriers to use of care when needed and what are they? (This is typically worded as “Did you forgo using health care when needed?” and is followed up with a “Why?” question, with a choice of multiple answers.)

3. Is it possible to assess hospitalization rates for specific causes? Consider the utilization of hospital care for NCD-related causes in comparison with that in other similar countries and in light of the disease burden. Is it possible to assess hospitalization rates for conditions, such as hypertension or asthma, that would indicate weak primary health care?
4. Using the household survey, how high is the level of out-of-pocket (OOP) payments in the country? (Show OOP payments in absolute terms, relative to total health expenditure, and relative to household income; present national averages and analysis based on income quintiles). If available, report the incidence of catastrophic and impoverishing expenditures and their causes. What is the share of primary health care, hospitals and outpatient medicines in OOP spending?
5. What is the link between payments and utilization of core services for NCD? Are there formal or informal payments that deter utilization of core NCD services, including diagnostics and follow-up? Do fee policies prevent the development of a continuous relationship with regular follow-up between patients with chronic diseases and providers?
6. Review the price of key medicines for NCDs (see also challenge 11) and their affordability. How does the affordability of medicines affect adherence to prescribed medication? How is this moderated by the quality of generic drugs and the propensity to use branded drugs?

Connecting core interventions and services with the fifteen challenges

The country assessments should arrive at a clear understanding of which core interventions and services are not delivered on a sufficient scale, and should link the pattern of coverage to a prioritized set of health system challenges. Conversely, extensive coverage should also be linked to the fifteen health system features, in order to determine which factors were most helpful in achieving this. There are a number of ways in which country assessment teams can connect the analysis of coverage of core interventions and services (section 2) and the analysis of health system challenges and opportunities (section 3).

Country teams may want to take a structured bottom-up approach. This would entail listing all core services with moderate or limited coverage against each of the health system challenges, and assessing the salience of each challenge for each core service. Annexes 4 and 5 contain matrices that can be used as worksheets for this assessment and ranking, for population interventions and individual services, respectively. This approach was used in four of the five country assessments carried out so far, and was found to be useful as a mechanism of prioritizing the health system features that most significantly undermine coverage of core interventions and services.

The following scale can be used to assess the salience of the health system challenges.

- **Minor challenge.** This issue does not prevent delivery of core interventions and services or has been fully addressed.
- **Moderate challenge.** This challenge has a moderate impact on the delivery of core interventions and services. The country has already found ways to address it, or has solid plans to do so.
- **Major challenge.** This challenge has a large negative impact on the delivery of core interventions and services. The country has been struggling to find the right ways to address it, or the chosen paths have not worked.
- **Major persistent challenge.** This is a systematic problem that is persistently on the health system reform agenda and the country has not found a sustainable implementable solution or has failed numerous times to implement it.

The total scores in the last row of each matrix provide a sense of which barriers are most important in undermining delivery of core services. This exercise should be an iterative process involving Ministry of Health officials and other stakeholders. Ideally, a balance should be sought in the ranking of the barriers so as not to end up with 15 major persistent challenges.

This exercise can be repeated in the same way for interventions and services where coverage was found to be extensive, to identify which health system features enabled this achievement. Worksheets can be easily adapted from the challenge worksheets.



4. Innovations and good practices

In this section of the country assessment, the team will review two or three good practices or innovations that have helped the country to address previously major health system challenges. Emphasis should be placed on detailed presentation of a few innovations and the lessons learnt. Some specific issues to address are as follows.

- Describe the innovation: what was done in what time frame with what level of resources?
- Assess the impact of the innovation on population or health practitioner behaviour and its potential impact on NCD outcomes. Describe why this policy is highlighted and provide evidence that it worked.
- What factors facilitated or hindered its implementation?
- What lessons can be drawn for other countries to consider?



5. Policy recommendations

Finally, the team should provide contextualized and implementable policy recommendations for the country to consider, to address its health system barriers and improve delivery of core services and NCD outcomes.

- The policy recommendations should be linked as closely as possible to the identified health system challenges that hinder delivery of core services. The recommendations should spell out how the proposed policies will remove the barriers, how that will lead to improved delivery of core interventions and services, and how NCD outcomes will be improved.
- Policy recommendations should be based on international evidence, but fully contextualized to the country. The recommendations will be used in drafting national action plans on NCDs and for the NCD sections of health system strengthening programmes. Contextualization of recommendations is key to ensure that they will be accepted and implemented.
- When outlining policy recommendations for major and major persistent challenges, recommendations should be classified as short-, medium- and long-term, with attention to sequencing. Some “what if” scenarios may need to be mentioned as important enabling or constraining factors.
- Policy recommendations should be pragmatic and implementable; a time-frame for implementation should be noted.



References

- ¹ Action plan for implementation of the European Strategy for the Prevention and Control of Noncommunicable Diseases 2012–2016. Copenhagen: WHO Regional Office for Europe; 2011.
- ² Stuckler D, Basu S, McKee M. Drivers of inequalities in Millennium Development Goal progress: a statistical analysis. PLoS Med. 2010; 7: e1000241.
- ³ Global status report on noncommunicable diseases 2010. Geneva: World Health Organization; 2011.
- ⁴ Beaglehole R et al. Priority actions for the NCD crisis. Lancet, 2011; 377:1438-47.
- ⁵ Global action plan for the prevention and control of noncommunicable diseases 2013-2020. Geneva: World Health Organization; 2013.
- ⁶ Towards people-centred health systems: An innovative approach for better health outcomes. Copenhagen: WHO Regional Office for Europe; 2012.
- ⁷ Roberts MJ, Stevenson MA. Better Noncommunicable Disease Outcomes: Fifteen Challenges and Opportunities for Health Systems. Copenhagen: WHO Regional Office for Europe, 2014 (forthcoming).
- ⁸ Global action plan for the prevention and control of noncommunicable diseases 2013-2020. Geneva: World Health Organization; 2013.
- ⁹ Global action plan for the prevention and control of noncommunicable diseases 2013-2020. Geneva: World Health Organization; 2013.
- ¹⁰ Roberts MJ, Stevenson MA. Better Noncommunicable Disease Outcomes: Fifteen Challenges and Opportunities for Health Systems. Copenhagen: WHO Regional Office for Europe, 2014 (forthcoming).



Annex 1. Country subgroups

The country subgroups mentioned in this guide reflect those defined in the Health for All database, as outlined below.

- EU-15: the 15 Member States that belonged to the European Union (EU) before 1 May 2004: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.
- EU-12: the 12 new Member States that joined the EU in May 2004 or in January 2007: Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia.
- CIS (Commonwealth of Independent States until 2006): Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

Annex 2. Criteria for scoring coverage of population interventions

	Country score	Limited	Moderate	Extensive
Range of anti-smoking interventions				
Raise tobacco taxes		Tax is less than 25% of retail price	Tax is between 25% and 75% of retail price	Tax is greater than 75% of retail price
Smoke-free environments		100% smoke-free environment enforced in schools and hospitals only	100% smoke-free environment enforced in hospitals, schools, universities, public transport and workplaces	100% smoke-free environment enforced in all public places, including hospitality sector
Warnings of dangers of tobacco and smoke		Warning labels required on tobacco products, size not specified	Warning labels on all tobacco products at least 30% of package size (front and back)	Warning labels are greater than 50% of package size (front and back), with pictures (standardized packaging)
Bans on advertising, promotion, sponsorship		No ban, or ban on national TV, radio and print	Ban on direct and indirect advertising and promotion	Ban on all advertising and promotion, including at points of sale, with effective enforcement
<i>Quit lines and nicotine replacement therapy (NRT)*</i>		No quit lines or government-funded cessation services, but NRT allowed and available for full pay by individuals	Quit lines, government-funded cessation services are available (possibly for payment). NRT available for full pay.	Toll-free quit lines, cessation services and NRT are available and affordable (covered at least partially)
Interventions to prevent harmful alcohol use				
Raise taxes on alcohol		Alcohol taxes follow price index	Alcohol taxes follow price index; special taxes on products attractive to young people	Alcohol taxes follow price index and related to alcohol content; special taxes on products attractive to young people
Restrictions, bans on advertising and promotion		Regulatory frameworks exist to regulate content and volume of alcohol marketing	Regulatory frameworks exist to regulate content and volume of alcohol marketing including direct and indirect marketing and sponsorship	Full ban on alcohol marketing of any kind
Restrictions on availability of alcohol in retail sector		Regulatory frameworks on serving of alcohol in governmental and educational institutions	Regulatory frameworks on serving of alcohol in governmental institutions and ban on serving alcohol in educational institutions	All governmental and educational institutions free of alcohol

<i>Minimum purchase age regulation and enforcement*</i>	Minimum purchase age of 18 years for all alcohol products	Minimum age of 18 years for all alcohol products and effective enforcement	Minimum age of 18 years for all alcohol products and effective enforcement	Minimum age of 18 years for all alcohol products and effective enforcement; loss of licence to sell alcohol if found breaking the law
<i>Allowed blood alcohol level for driving*</i>	Blood alcohol content maximum of 0.5 g/L	Blood alcohol content maximum 0.5 g/L, and zero for novice and professional drivers	Blood alcohol content maximum 0.5 g/L, and zero for novice and professional drivers	Blood alcohol content maximum 0.2 g/L and zero for novice and professional drivers
Interventions to improve diet and physical activity				
Reduce salt intake and salt content in foods	<10% reduction in salt intake in past 10 years	About 10% reduction in salt intake in past 10 years	About 10% reduction in salt intake in past 10 years	>10% reduction in salt intake in past 10 years
Virtually eliminate <i>trans</i> -fatty acids from the diet	There is no evidence that <i>trans</i> -fats have been significantly reduced in the diet	<i>Trans</i> -fats reduced in some food categories and industry operators but not overall	<i>Trans</i> -fats reduced in some food categories and industry operators but not overall	<i>Trans</i> -fats eliminated from the food chain through government legislation and/or self-regulation
<i>Reduce free sugar intake*</i>	The aim to reduce the intake of free sugars is mentioned in policy documents but no action has been taken	The reduction of intake of free sugars by 5% is mentioned and partially achieved in food categories	The reduction of intake of free sugars by 5% is mentioned and partially achieved in food categories	The reduction of intake of free sugars by 5% is monitored with a focus on sugar-sweetened beverages
<i>Increase intake of fruit and vegetables*</i>	The aim to increase consumption of fruit and vegetables is mentioned but no monitoring data have been collected to support it.	The aim to increase consumption of fruit and vegetables is in line with the WHO/FAO recommendations of at least 400 g/day and some initiatives exist	The aim to increase consumption of fruit and vegetables is in line with the WHO/FAO recommendations of at least 400 g/day and some initiatives exist	The aim to increase consumption of fruit and vegetables is in line with the WHO/FAO recommendations of at least 400 g/day with population initiatives, and incentives to increase availability, affordability and accessibility
<i>Reduce marketing pressure of food and non-alcoholic beverages to children*</i>	Marketing of foods and beverages to children is noted as a problem but has not been translated into specific action in government-led initiatives.	Marketing of foods and beverages to children is noted as a problem but has not been translated into specific action in government-led initiatives.	Marketing of foods and beverages to children is noted as a problem but has not been translated into specific action in government-led initiatives.	WHO recommendations on marketing and the Implementation Framework on Marketing followed consistently, including mechanism for monitoring
Promote awareness about diet and activity*	There has been no workforce development for nutrition and physical activity; nutrition and physical activity are not priority elements in primary care	Some workforce development for nutrition and physical activity; nutrition and physical activity are starting to be considered priority elements in primary care	Some workforce development for nutrition and physical activity; nutrition and physical activity are starting to be considered priority elements in primary care	Workforce development for nutrition and physical activity exists; nutrition and physical activity are priority elements in primary care

* Indicates criteria additional to those mentioned in the Global action plan for the prevention and control of noncommunicable diseases 2013-2020 (Geneva: World Health Organization; 2013).

Annex 3. Criteria for scoring coverage of individual services for CVD and diabetes

	Country score	Limited	Moderate	Extensive
CVD and diabetes				
Risk stratification in primary health care		10-year CVD risk is documented in fewer than 30% of records of patients over 40 years of age with at least one main CVD risk factor; specific risk factors not routinely documented	10-year CVD risk is documented in 30-60% of records of patients over 40 years of age with at least one main CVD risk factor. Incomplete risk factor documentation or not using systematic method	10-year CVD risk routinely documented in more than 60% of records of patients over 40 years with at least one main CVD risk factor. Systematic method of calculation with routine documentation of specific risk factors
Effective detection and management of hypertension		Fewer than 30% of estimated cases with high blood pressure are identified in primary health care, evidence-based generic antihypertensive drugs infrequently prescribed, no efforts to address patient adherence	30-60% of estimated cases with high blood pressure are identified in primary health care, evidence-based antihypertensive drugs often (25-75%) prescribed, some efforts to increase patient adherence but not systematic	More than 60% of estimated cases with high blood pressure are identified in primary health care, evidence-based generic antihypertensive drugs routinely (>75%) prescribed; government-funded systematic efforts to increase adherence
Effective primary prevention in high-risk groups		Prescribers not aware of indications for primary prophylaxis. Under 10% of patients with very high (>30%) 10-year CVD risk identified and prescribed multidrug regimens (antihypertensive, acetylsalicylic acid, and statin) for primary prophylaxis. Acetylsalicylic acid prescribed indiscriminately to all hypertensive patients.	Prescribers aware of indications for primary prevention with multidrug regimen. Low coverage (10-25%) of very high-risk patients with primary prophylaxis, or appropriate drug regimens prescribed but very low patient adherence. Acetylsalicylic acid prescribed indiscriminately to all HTN patients.	Routine prescription of multidrug regimens, including statins, for patients at very high CVD risk. Coverage of at-risk patients exceeds 25%. Evidence for good long-term patient adherence. Acetylsalicylic acid not prescribed to hypertensive patients with low or medium CVD risk.
Effective secondary prevention after AMI including acetylsalicylic acid		Fewer than 25% of patients after AMI receive acetylsalicylic acid, beta-blockers and statins	25-75% of patients after AMI receive acetylsalicylic acid, beta-blockers and statins	More than 75% of patients after AMI receive acetylsalicylic acid, beta-blockers and statins
Rapid response and secondary care after AMI and stroke*		Fewer than 25% of those with AMI or stroke receive diagnosis and care within 6 hours of first symptoms	25-50% of those with AMI or stroke receive diagnosis and care within 6 hours of first symptoms	More than 50% of those with AMI or stroke receive diagnosis and care within 6 hours of first symptoms

Diabetes					
<i>Effective detection and general follow-up *</i>	Fewer than 75% of primary health care practices establish and maintain a register of all patients aged 17 or over with diabetes <25% detection/registration rate, based on estimated prevalence of type 2 diabetes in adult population. Not using evidence-based, systematic method to select asymptomatic patients for screening.	25-75% of primary health care practices establish and maintain a register of all patients aged 17 or over with diabetes 25-50% detection/registration rate, based on estimated prevalence of type 2 diabetes in adult population. Using evidence-based, systematic method to select asymptomatic patients for screening, but limited coverage.	More than 75% of primary health care practices establish and maintain a register of all patients aged 17 or over with diabetes More than 50% detection/registration rate based on estimated prevalence of type 2 diabetes in adult population. Using evidence-based, systematic method to select asymptomatic patients for screening with high coverage	25-75% of primary health care practices establish and maintain a register of all patients aged 17 or over with diabetes 25-50% detection/registration rate, based on estimated prevalence of type 2 diabetes in adult population. Using evidence-based, systematic method to select asymptomatic patients for screening, but limited coverage.	More than 75% of primary health care practices establish and maintain a register of all patients aged 17 or over with diabetes More than 50% detection/registration rate based on estimated prevalence of type 2 diabetes in adult population. Using evidence-based, systematic method to select asymptomatic patients for screening with high coverage
Patient education on nutrition and physical activity and glucose management	Fewer than 25% of those diagnosed with type 2 diabetes had at least 3 primary health care visits in past year Fewer than 25% of registered diabetics receive organized dietary counselling Primary health care has no counselling about physical activity Fewer than 25% of registered diabetics had glycosylated haemoglobin measurement in past 12 months	25-75% of those diagnosed with type 2 diabetes had at least 3 primary health care visits in past year 25-75% of registered diabetics receive organized dietary counselling Primary health care routinely offers counselling on physical activity 25-75% of registered diabetics had glycosylated haemoglobin measurement in past 12 months	More than 75% of those diagnosed with type 2 diabetes had at least 3 primary health care visits in past year More than 75% of registered diabetics receive organized dietary counselling Primary health care routinely offers counselling and options for physical activity through partnerships More than 75% of registered diabetics had glycosylated haemoglobin measurement in past 12 months	25-75% of those diagnosed with type 2 diabetes had at least 3 primary health care visits in past year 25-75% of registered diabetics receive organized dietary counselling Primary health care routinely offers counselling on physical activity 25-75% of registered diabetics had glycosylated haemoglobin measurement in past 12 months	More than 75% of those diagnosed with type 2 diabetes had at least 3 primary health care visits in past year More than 75% of registered diabetics receive organized dietary counselling Primary health care routinely offers counselling and options for physical activity through partnerships More than 75% of registered diabetics had glycosylated haemoglobin measurement in past 12 months
Hypertension management among diabetes patients	Fewer than 25% of registered diabetics with hypertension have achieved a blood pressure <140/90 mmHg; angiotensin-converting enzyme (ACE) inhibitors not routinely prescribed as first-line antihypertensive.	25-75% of registered diabetics with hypertension have achieved a blood pressure <140/90 mmHg; ACE inhibitors routinely prescribed as first-line antihypertensive	More than 75% of registered diabetics with hypertension have achieved a blood pressure <140/90 mmHg; ACE inhibitors routinely prescribed as first-line antihypertensive	25-75% of registered diabetics with hypertension have achieved a blood pressure <140/90 mmHg; ACE inhibitors routinely prescribed as first-line antihypertensive	More than 75% of registered diabetics with hypertension have achieved a blood pressure <140/90 mmHg; ACE inhibitors routinely prescribed as first-line antihypertensive
Preventing complications	Fewer than 25% of registered diabetics had a foot examination, eye examination (fundoscopy) and urine protein test in past 12 months	25-75% of registered diabetics had a foot examination, eye examination (fundoscopy) and urine protein test in past 12 months	More than 75% of registered diabetics had a foot examination, eye examination (fundoscopy) and urine protein test in past 12 months	25-75% of registered diabetics had a foot examination, eye examination (fundoscopy) and urine protein test in past 12 months	More than 75% of registered diabetics had a foot examination, eye examination (fundoscopy) and urine protein test in past 12 months

* Indicates criteria additional to those mentioned in the Global action plan for the prevention and control of noncommunicable diseases 2013-2020 (Geneva: World Health Organization; 2013).

Annex 4. Worksheet for population interventions

<i>Scoring of challenges</i> 1. Minor 2. Moderate 3. Major 4. Major persistent	1. Commitment	2. Priority- setting	3. Interagency cooperation	4. Population empowerment	5. Model of service delivery	6. Coordination across providers
Range of anti-smoking interventions						
Raise tobacco taxes						
Smoke-free environments						
Warnings of dangers of tobacco and smoke						
Bans on advertising, promotion, sponsorship						
Quit lines and nicotine replacement therapy						
Interventions to improve diet and physical activity						
Reduce salt intake and salt content in foods						
Virtually eliminate <i>trans</i> -fatty acids from the diet						
Reduce free sugar intake						
Increase intake of fruit and vegetables						
Reduce marketing pressure on children						
Promote awareness about diet and activity						
Interventions to prevent harmful alcohol use						
Raise taxes on alcohol						
Restrictions, bans on advertising/promotion						
Restrictions on availability of retailed alcohol						
Minimum purchase age regulation and enforcement						
Allowed blood alcohol level for driving						
Multisectoral policy development						
Salience of barrier (total)						

Annex 5. Worksheet for individual core NCD

Scoring of challenges 1. Minor 2. Moderate 3. Major 4. Major persistent	1. Commitment	2. Priority- setting	3. Interagency cooperation	4. Population empowerment	5. Model of service delivery	6. Coordination across providers
CVD and diabetes						
Risk stratification in primary health care						
Effective detection and management of hypertension						
Effective primary prevention in high-risk groups						
Effective secondary prevention after AMI including acetylsalicylic acid						
Rapid response and secondary care after AMI and stroke						
Diabetes						
Effective detection and general follow-up						
Patient education & glucose management						
Hypertension management among diabetes patients						
Prevent complications						
Salience of barrier (total)						



The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

Albania
Andorra
Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Luxembourg
Malta
Monaco
Montenegro
Netherlands
Norway
Poland
Portugal
Republic of Moldova
Romania
Russian Federation
San Marino
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Tajikistan
The former Yugoslav Republic
of Macedonia
Turkey
Turkmenistan
Ukraine
United Kingdom
Uzbekistan



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: contact@euro.who.int
Web site: www.euro.who.int