



**World Health
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REGIONAL OFFICE FOR **Europe**



Prevention and control of noncommunicable diseases in refugees and migrants

Technical guidance



This project is funded by
the European Commission.



**Knowledge Hub
on Health and Migration**

The Migration and Health programme

The Migration and Health programme, the first fully fledged programme on migration and health at the WHO Regional Office for Europe, was established to support Member States to strengthen the health sector's capacity to provide evidence-informed responses to the public health challenges of refugee and migrant health. The programme operates under the umbrella of the European health policy framework Health 2020, providing support to Member States under four pillars: technical assistance; health information, research and training; partnership building; and advocacy and communication. The programme promotes a collaborative intercountry approach to migrant health by facilitating cross-country policy dialogue and encouraging homogeneous health interventions along the migration routes to promote the health of refugees and migrants and protect public health in the host community.

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Abstract

This technical guidance outlines current best practice, evidence and knowledge in order to inform policy and programme development in the area of noncommunicable disease management and control for refugees and migrants. It highlights key principles, summarizes priority actions and challenges, maps available resources and tools and provides policy options and practical recommendations to improve noncommunicable disease-related interventions for refugees and migrants in the WHO European Region. The target audience for this document includes those with a central role in policy-making at local, national and regional levels, and across all sectors of governance; it is not only for those within the health or migration sectors. Clinicians, fieldworkers and other practitioners are invited to draw upon this publication; however, it is not intended to be at a level that would inform their daily work.

Suggested citation

Prevention and control of noncommunicable diseases in refugees and migrants. Copenhagen: WHO Regional Office for Europe; 2019 (Technical guidance on refugee and migrant health).

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

Publications
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UN City, Marmorvej 51
DK-2100 Copenhagen Ø, Denmark

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ISBN 978 92 890 5399 0

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This publication was produced with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

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Acknowledgements

The technical guidance series on the health of refugees and migrants in the WHO European Region was produced as part of the WHO Knowledge Hub initiative on Health and Migration under the aegis of the WHO Regional Office for Europe and the European Commission collaboration Migration and Health Knowledge Management (MiHKMa) project.

We would like to thank the MiHKMa project team led by Santino Severoni, who coordinates and leads the Migration and Health programme within the Division of Policy and Governance for Health and Well-being of the WHO Regional Office for Europe, directed by Piroska Östlin.

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An expert group oversaw the production of this technical guidance; the members were Joao Breda, Gauden Galea, Jill Farrington, Frederiek Mantingh, and Luigi Migliorini (WHO Regional Office for Europe), Melita Vujnovic (WHO Country Office for Russia), Charles Agyemang (University of Amsterdam), Raj Bhopal (University of Edinburgh), Heiko Hering (Office of the United Nations High Commissioner for Refugees), Sigiriya Aebischer Perone (International Committee of the Red Cross) and Morten Sonderman (Odense University Hospital and University of Southern Denmark). We would also like to thank Bente Mikkelsen, Director of the Division of Noncommunicable Diseases and Promoting Health through the Life-course, WHO Regional Office for Europe, and her team for their contribution.

Acknowledgements are owed to the project manager, Jozef Bartovic, for his work in the successful coordination and execution of the technical guidance series. Our

gratitude also goes to Palmira Immordino, Simona Melki, Yousra Gendil and Soorej Jose Puthooppambal for their support with the project. We also thank Prabhjot Kour (Norwegian Institute of Public Health).

Finally, the WHO Regional Office for Europe wishes to thank the Consumer, Health, Agriculture and Food Executive Agency (Chafea) of the European Commission Directorate-General for Health and Food Safety (DG SANTE) for its financial support of the project, in particular Isabel de la Mata (European Commission) and Paola d'Acapito (Chafea) for their contribution and support in overseeing the project.

Abbreviations

CDSMP	Chronic Disease Self-Management Program (Stanford)
CVD	cardiovascular disease
NCD	noncommunicable disease

Summary

Noncommunicable diseases (NCDs) are the greatest contributor to mortality and morbidity worldwide, responsible for more deaths than all other causes combined. In the WHO European Region alone, NCDs account for nearly 86% of deaths and 77% of the disease burden. The NCDs are often referred to as chronic diseases because of their usually slow progression and long duration. The four most common NCDs are cardiovascular diseases (CVDs), cancers, chronic respiratory disease and diabetes mellitus, together accounting for 82% of all NCD deaths. Importantly, however, the majority of NCDs are preventable, and there is much that can be done to reverse the impact of this public health emergency. Use of tobacco, unhealthy diet, physical inactivity and harmful consumption of alcohol are understood to be the main modifiable risk factors for NCDs.

While NCDs have generally been thought of as a problem of high-income countries, the greatest burden of disease is now in low- and middle-income countries, including the countries of origin for many of those migrating to Europe. In 2017, NCDs accounted for 45% and 44% of mortality in the Syrian Arab Republic and Afghanistan, respectively, which were the two countries with the greatest number of refugees and migrants moving to the WHO European Region.

Using good-practice case studies, and focusing mainly on CVDs and diabetes, this technical guidance outlines key priority areas for interventions within refugee and migrant groups in the WHO European Region to assist policy-makers and decision-makers in prevention of NCDs and the control of their increasing burden. Primary prevention interventions generated for the whole population, such as adopting health in all policies and whole-of-government approaches and implementing legal and fiscal instruments for health promotion environments, are also relevant to the refugee and migrant population but this population may have additional specific areas to target, such as cultural and linguistic barriers to accessing services. Secondary prevention measures include integrated primary health care for early detection and treatment and supporting self-management. Managing NCDs in situations of sudden, large influxes of refugees and migrants is also discussed.

The following policy considerations for Member States were derived from the review; some being relevant for all the population with others more specific for refugees and migrants:

- strengthening integration of NCD prevention and management into primary health care and incorporating specific directives for refugees and migrants into current national NCD policies;
- adopting multisectoral approaches to address social and environmental determinants of NCDs, with appropriate legal and fiscal instruments to develop health promotion environments;

- committing to universal health coverage for all refugees and migrants and early access to preventive and curative services;
- investing in adaptation of chronic disease self-management programmes;
- conducting targeted culturally and linguistically relevant health education campaigns;
- ensuring a culturally competent workforce; and
- striving to generate high-quality migrant-specific and sensitive data on NCDs and service utilization.

Introduction

Background

NCDs are the greatest contributor to mortality and morbidity globally, causing more deaths than all other causes combined. Each year, 41 million people die from NCDs, 15 million dying prematurely between the ages of 30 and 69 years (1). NCDs also account for nearly 86% of deaths and 77% of the disease burden in the WHO European Region itself (2). The four most common NCDs are CVDs, including heart attack and stroke; cancers; chronic respiratory disease, including chronic obstructive pulmonary disease and asthma; and diabetes. Together, these are responsible for 82% of all NCD deaths (3). The NCDs tend to be of long duration with slow progression and are, consequently, often referred to as chronic diseases. They are caused by a combination of modifiable and non-modifiable risk factors, including genetic, metabolic, behavioural and environmental factors. As stated by the former Secretary-General of the United Nations Ban Ki-moon, the global epidemic of NCDs constitutes a public health emergency in slow motion (4). Importantly, however, the majority of NCDs are preventable and there is much that can be done to reverse the impact of this emergency (5).

While NCDs have previously been thought of as a problem of high-income countries, the greatest burden of such diseases now exists in low- and middle-income countries, including the countries of origin for many refugees and migrants travelling to Europe (6). The top two source countries for refugees and migrants to the WHO European Region, the Syrian Arab Republic and Afghanistan, had mortality rates for NCDs in 2017 of 45% and 44%, respectively (7). Although prevalence of NCDs among refugees and migrants depends, among other things, on the specific diseases under observation, refugees and migrants in the Region are often seen to have higher rates of certain NCDs, for example some CVDs and diabetes, which are attributable to both migration-specific factors and the socioeconomic status of individuals (2).

That the burden of NCDs among refugees and migrants is an increasing problem is recognized by the Strategy and Action Plan for Refugee and Migrant Health in the WHO European Region (8). Strategic area 7 is concerned with preventing and reducing risks posed by NCDs, with the key objective being to ensure that refugees and migrants form part of Member States' national strategies for the prevention and control of NCDs in the population as a whole (8). There is, however, little available guidance on the management of NCDs among migrant groups specifically. Current regional and global commitments and action plans to addressing NCDs make virtually no specific mention of refugees and migrants, nor do they include particular directives on preventing and managing disease among them. The Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020 outlines nine voluntary global targets for progress on NCDs, including a 25% relative reduction in premature mortality from CVDs, cancer, diabetes and chronic respiratory disease (baseline: 2010) (9). The Global Action Plan also calls for reductions in modifiable risk factors and improved health system responses in terms of drug therapy, essential medicines and basic

technologies. These goals are endorsed by the Action Plan for the Prevention and Control of Noncommunicable Diseases in the WHO European Region for 2016–2025 (5). Prevention and control of NCDs has also been emphasized at the global level by the 2030 Agenda for Sustainable Development (10), where Goal 3.4 specifies a one third reduction from premature mortality from NCDs. In order to achieve such targets, however, and given that refugees and migrants account for almost 12% of the European population (2), efforts must address the NCD-related vulnerabilities of these groups specifically. These efforts must also consider the other Sustainable Development Goals that intersect between NCDs and migration, such as ending poverty and hunger, achieving good health and well-being, reducing inequalities and building sustainable cities and communities. Efforts should be guided by the principles of equity and human rights that underscore the Global Action Plan.

The economic case for addressing NCDs

The impact of chronic NCDs on the quality of life and well-being of refugees and migrants notwithstanding, the socioeconomic burden is also enormous. The costs of NCDs are experienced not only at the individual and household level in terms of increased expenditure, out-of-pocket health care payments, decreased income and reduced opportunities but also more broadly at the levels of the health care system and the national economy. Public health expenditure is one of the largest and fastest growing spending items for governments, and NCD-related health costs are a huge contributor to costs because of issues such as increased use of services, high treatment costs and demand for more expensive treatments (11). The costs to national economies from NCDs linked to reduced labour supply and outputs, lower tax revenues and lower returns on human capital investments are also significant (11). For example, the cost to the health systems of European Union Member States for CVDs alone in 2015 was nearly €111 billion; the additional non-health care cost from production losses and cost of informal care was €100 billion (11). Given the continued migration trends into and within the WHO European Region and the burden of NCD-related mortality and morbidity among refugees and migrants, preventing and managing disease among migrant groups is not just a human right but also a financial imperative.

Objectives

This technical guidance has been developed to assist policy-makers and decision-makers across all sectors of government and at local, national and regional levels to improve the prevention and control of NCDs among refugees and migrants. Many of the recommendations for prevention and control of NCDs will be applicable to all populations not just refugees and migrants, but the latter groups may have additional specific needs such as surmounting barriers to accessing care. Clinicians, fieldworkers and other practitioners are invited to draw upon this publication as a resource but it is not intended as an operational guide to inform their daily work.

The technical guidance refers to current global and regional commitments and action plans on NCDs in considering the synthesis of the best available knowledge, evidence and practices to inform effective policy and programme development. It also outlines policy considerations and maps available tools and resources to help in addressing the increasing epidemic of NCDs among both the refugee and migrant population and the host population. While addressing prevention and management of NCDs among refugees and migrants broadly, examples throughout the paper will focus primarily on CVDs and diabetes because there is more information and evidence available on these particular diseases in the context of migration and these are also NCDs with potentially more scope for intervention. Limitations in time, resources and expertise also require there to be a focus on exemplar issues.

Methodology

The literature for this scoping review was derived from the wider scoping review carried out for the Report on the Health of Refugees and Migrants in the WHO European Region (2). This included eight systematic reviews and 111 primary studies on NCDs specifically; only those focused on overall NCD mortality/morbidity (22 studies) or specifically on hypertension (three studies), stroke (four studies), CVDs (11 studies) and diabetes (24 studies) were consulted. An additional desk review, including of grey literature, was also conducted for information and recommendations pertaining to the determinants, prevention and management of NCDs among refugees and migrants in the European Region. Literature was also identified through snowballing searching and during the expert review process.

The main limitation of this review was that it was not a full systematic review, and sources were limited to those published in English. Research published in other languages, including in countries from which many refugees and migrants originate, would, therefore, be overlooked. A further source of potential bias is the possible conflation between migrant and ethnic status. While research on these different groups may have common findings and implications, challenges specific to the reduction and prevention of NCDs among refugee and migrant groups are not necessarily generalizable to later-generation ethnic groups, and vice versa.

The selection of case studies and policy options was based on the evidence and research found during the desk review, as well as through consultation with expert reviewers and WHO country offices in the Region. Emphasis was placed on illustrating a variety of interventions that could be applied in the Region and that contained important lessons. They were also chosen based on principles and priorities of global and regional commitments and action plans for the prevention and management of NCDs.

Overview

- NCDs are a significant contributor to the burden of mortality and morbidity in many countries, including those from which many migrants originate (e.g. NCDs accounted for 45% and 44%, respectively, of mortality in the top two source countries for refugees to the WHO European Region in 2017) (7).
- Many NCDs are preventable: 80% of premature heart disease, stroke and diabetes is preventable (12).
- In 2015, the cost to the health systems of European Union Member States for CVDs alone was nearly €111 billion, with €100 billion being the additional non-health care costs from production losses and cost of informal care (11).
- Refugees and migrants in the WHO European Region often have higher rates of heart attack, hypertension and stroke than local-born populations, attributable to both migration-related factors and socioeconomic status (2).
- Refugees and migrants have higher incidence, prevalence and mortality for diabetes than native host populations in the Region (2).
- Key modifiable metabolic and behavioural risk factors for NCDs include use of tobacco, unhealthy diet, physical inactivity, harmful consumption of alcohol, overweight/obesity, hyperglycaemia, high blood pressure and high cholesterol (1,5).

Evidence

Prevalence of NCDs among refugees and migrants

While the overall mortality rate appears to be similar or even lower among refugees and migrants compared with host country populations in various European countries, there are large variations in mortality by cause and area of provenance among refugees and migrants when looking at cause-specific mortality by country of origin (2). Studies assessing overall physical health of refugees and migrants are also impossible to generalize. Some have concluded that health is poorer overall among refugees and migrants while others find it is better; the latter is often described as the healthy migrant effect, which hypothesizes that health selection has a positive effect on health outcomes for refugees and migrants, especially in the first years after migration. Evidence regarding the impact of duration of residence in the host country is also conflicting, with results depending on the type of outcome assessed and the country of origin of the refugee or migrant, among other factors.

Diabetes mellitus

In general, evidence shows that all migrant groups have higher incidence, prevalence and mortality for diabetes than host populations in the Region (2,6). In fact, all 24 studies included in the scoping review showed a significantly increased risk for the development of type 2 diabetes for refugees and migrants in the European Region, particularly in those coming from Africa and Asia (2). Moreover, the development of diabetes may occur at an earlier age for refugees and migrants in Europe than for both the host populations and for the non-migrating population staying in the country of origin (6,13). Some countries in the Region also identified more chronic complications of diabetes among refugees and migrants, particularly nephropathy, diabetic retinopathy and peripheral neuropathy (2).

A systematic review and meta-analysis of disparities in type 2 diabetes among ethnic minority residents in Europe similarly found increased prevalence among these groups than the host majority populations (14). When compared with host Europeans, the review found the risk of type 2 diabetes to be three to five times higher among groups of south Asian origin, two to four times higher among groups of Middle Eastern and northern African origin, and two to three times higher among groups of sub-Saharan African origin (14).

CVDs and hypertension

Unlike evidence for diabetes, results from studies comparing risk of CVDs, including cerebrovascular disease (stroke), and hypertension between refugees and migrants and host populations in European countries were conflicting (2). Prevalence greatly depended on factors such as the specific disease under observation, the country of origin of the refugee or migrant, the country of destination and the duration of stay (2,6). Nevertheless, higher rates of heart attack, hypertension and stroke were often identified in refugees and migrants in the WHO European Region (2). In fact, undocumented migrants specifically have been shown to have a two-fold higher mortality rate from CVDs than the general European population (15).

Risk factors and determinants

Behavioural and biological risk factors

Use of tobacco, unhealthy diet, physical inactivity and harmful consumption of alcohol are well understood to be the four main behavioural and modifiable risk factors for NCDs. These lead to biological and metabolic conditions that increase the risk and likelihood for development of disease. The main biological risk factors for CVDs and diabetes are overweight/obesity, having elevated blood glucose levels (hyperglycaemia), having high blood pressure and also having high cholesterol levels (dyslipidaemia). Importantly, these are usually modifiable and can be mitigated with effective interventions.

Prevalence of these main risk factors is highly variable among different refugee and migrant groups within the WHO European Region. Overweight/obesity is a key risk factor for various NCDs, and some evidence shows that its development can be associated with duration of stay in the host country, linked to changes in diet and physical activity among other factors (16–18). In general, length of residence greater than or equal to 15 years is positively associated with prevalence of overweight among adult migrants (18). Children of migrants have also been shown to have similar or greater rates of obesity than among host populations (19). Furthermore, there may be a relationship between gender and overweight/obesity, as some female migrants have also been found to have an excess risk for overweight and obesity compared with male migrants in the Region (17,20). This has also been observed in child migrants (21).

There is little evidence that vulnerabilities in refugee and migrant populations lead to substance use and abuse (2), and some studies showed lower rates of substance and alcohol abuse among refugees and migrants, but prevalence of smoking was higher (22,23). However, prevalence of alcohol abuse among forced migrants has been shown to be significantly higher in camp settings than in community settings (24). Gender differences have also been observed for these risk factors, with refugee and migrant women often smoking and drinking less than men, perhaps linked, in part, to cultural or religious practices or beliefs (2). Ethnic variations in major risk factors are also significant in Europe. In particular, ethnic differences in smoking prevalence are far greater than differences in smoking by sex, class or other epidemiological variables (25). Limitations notwithstanding, ethnicity in this context could be utilized to an extent as a proxy indicator for migrant status, and further exploration is needed to fully understand such inequalities in health and variations in NCD risk factors.

Social/environmental determinants

Risks for metabolic disorders and NCDs are not shaped only by biological factors and individual behaviours but also by the conditions in which people are born, live, grow, work and age. These social determinants of health are driven by a myriad of interacting social, economic, environmental, political and cultural factors (e.g. income, housing, employment and educational opportunities) that influence people's exposure to risk factors and the capacity they have to make health-promoting lifestyle choices. Several studies assessing risk for CVDs, in particular, among refugee and migrant populations in Europe have suggested that higher rates of heart attack, hypertension and stroke could be attributed to socioeconomic inequalities (2). For example, studies of

socioeconomic inequalities in incidence of different types of stroke in the Netherlands among major first-generation migrant groups found that incidence was higher among low socioeconomic groups, which was also the case for the majority Dutch population (26,27). As such, low income clearly presents a major risk indicator, at least for CVDs.

Migration is also a social determinant in and of itself, and the processes and conditions surrounding migration and displacement can make an individual more vulnerable to developing NCDs and acquiring their risk factors. This is particularly relevant for migration from low- and middle-income countries to higher-income countries, which is the predominant trajectory of current migration to Europe. Harsh conditions during transit, physical and mental stressors, insecurity in reception/detention centres, poor living and working conditions and labour exploitation are all factors that can contribute to both exposure to risk factors and vulnerability to complications. Interruptions in treatment and management during transit and in settlement is a critical issue for refugees and migrants, as continuity of care is essential for the management of many chronic diseases (28). Moreover, conditions in the destination country such as lifestyles, availability of familiar traditional foods, and health and integration policies have potentially a significant influence on NCD risk factors among those settling into new countries (6). Countries with exclusionist models of integration appear to have higher mortality rates for refugees and migrants than those with more inclusive models (6).

Legal status, and its effect on integration, is a further determinant of NCD risk for refugees and migrants and important differences can be seen within and between migrant populations. Specifically, whether a person moves as a documented or undocumented migrant has important consequences on the management of NCD risk factors and health outcomes in terms of access to care. Undocumented migrants, in particular, face unique situations in Europe in terms of their often-restricted rights to accessing primary and/or emergency health care (29). Such rights vary according to laws in different countries and constitute a key barrier for the effective management of NCDs. Moreover, additional barriers to necessary care include poor understanding of rights as well as low health-seeking behaviours and reluctance to register with health officials due to fear of legal status issues, and the risk of associated consequences (30). Being undocumented can be considered as a risk factor for poor health among migrants in Europe, with such status being significantly associated with low utilization of health services and a tendency of most patients to present only when symptoms become acute (31). Undocumented migrants usually consult less and also later in the disease course compared with both the general population and asylum seekers and refugees, who often have greater privileges and easier access to the health system (15). Furthermore, undocumented migrants have been found to have a higher risk of hospitalization for preventable chronic disease complications (15).

Data challenges

In order to meet the needs of refugees and migrants in Europe in terms of NCDs and management of risk factors, data and information are needed, for example on the health status of such groups, health care uptake, outcomes and population denominators (32). Current routine data collection in the European Region is often insufficient to adequately and appropriately assess and respond to the rising challenge of NCDs

among refugee and migrant groups, and information is often collected on an ad hoc basis. While data on clinical incidence and prevalence of NCDs can be obtained from health service-based registries, such as those for hospital admissions and general practitioners, and from disease-specific registries, such as cancer registries, these sources in most countries do not include information on migrant status, country of birth or ethnicity. Refugees and migrants are also often missed out from relevant surveys or have low attendance rates, and reporting may be additionally affected by underdiagnosis. Furthermore, most data sources cannot be used to stratify populations according to relevant information such as length of stay or socioeconomic position. To support good decision-making, the generation of high-quality migrant-specific data in the European Region is essential, which requires inclusion of migrant-status and related information in vital statistics and routine data collection (Case study 1). As this currently can be difficult to achieve, data linkage of health records with population-based registers or census could offer alternative short-term solutions. The opportunities of this type of data linkage have been demonstrated for capturing data on health and ethnicity specifically (Case study 2).

Case study 1. Monitoring of NCDs and related risk factors through repeated health examination surveys (Finland)

Monitoring of NCDs and related risk factors through repeated health examination surveys in Finland goes as far back as the late 1950s (33). In 1972, the North Karelia Project was launched aiming at reducing the exceptionally high coronary heart disease mortality in the region (34). The project was highly successful, shaping public health policy not only in North Karelia but also in Finland as a whole. Despite increasing population diversity, the number of people of migrant origin participating in national health examination surveys has been low. In order to gather representative information also on those of migrant origin, the Migrant Health and Wellbeing (Maamu) study was conducted between 2010 and 2012. The Maamu study included adults of Russian, Somali and Kurdish origin and followed a comparable study protocol used in national health examination surveys. In addition to extensive health examination and interview data, follow-up of study participants was possible through register linkage with national health care and social welfare registers (35). This allowed the examination of the prevalence and incidence of NCDs and related risk factors among those of migrant origin in comparison with the general population. So far, more than 20 peer-reviewed studies on various topics have been published using data from the study. These studies have highlighted some similarities, but largely significant variations in the prevalence of NCDs and related risk factors compared with the general population, particularly among those of Somali or Kurdish origin (36,37). The high-risk group varied depending on the risk factor examined. Prevalence of hypertension was highest among the general population, whereas those of Somali and Kurdish origin had the highest prevalence of type 2 diabetes and obesity (women only) (37,38). As a consequence of these findings, a lifestyle intervention is currently being piloted aiming at reducing the prevalence of type 2 diabetes risk factors among people of Somali origin. This intervention follows the model developed in the national StopDia project (38) and the framework defined in the European CHRODIS PLUS project (39).

Case study 2. Scottish Health and Ethnicity Linkage Study (Scotland, United Kingdom)

In Scotland, large variations in health have been observed between different ethnic and migrant groups in the population but research to explain these variations was limited. The Information Services Division of NHS National Services Scotland, the General Register Office of Scotland and the University of Edinburgh developed the Scottish Health and Ethnicity Linkage Study to examine the availability of health data by ethnic group. The Study examined the relationship between a person's ethnicity, and the different health issues affecting the national population at large, including key NCDs. Mortality data, hospital episode data, general hospital discharge records, maternity and birth records, psychiatric inpatient records and cancer registrations were linked to the census, which included ethnic codes. Phase 1 of the study focused on myocardial infarction, given its severity and prevalence, and phase 2 studied CVDs and cancer, among other conditions. The study included a cohort of approximately 4.65 million people, meeting the set 80% standard for linkage for each ethnic minority group. The study has so far published 20 papers demonstrating important health variations and similarities between different ethnic groups in Scotland and also explaining some of the differences in health outcomes by indicating, for example, rates of smoking or diabetes. Key findings help to inform and improve the work of health care professionals and third sector organizations in Scotland, as well as for responses to government policy and legislation. While ethnicity and not migrant status is the primary exposure variable, it is nevertheless an important example of the need for improved data collection more broadly in relation to NCDs in these groups, and the potential for data linkage methods.

Sources: Bhopal et al., 2011 (32); Usher Institute, University of Edinburgh, 2018 (40).

Areas for intervention

Given the enormous social and economic cost of the NCD burden, and that 80% of heart disease, stroke and diabetes is preventable, implementing effective measures to reduce the epidemic of NCDs should be a high priority for all WHO European Member States. This section discusses the importance of primary and secondary prevention interventions to reduce NCDs, focusing on CVDs and diabetes, among refugee and migrant populations, recognizing that many strategies for reducing the burden of disease in these groups specifically actually require action at the broader mainstream population level.

Primary prevention

To be effective, primary prevention measures need to recognize that different refugee and migrant populations will be distinct in terms of social, cultural and religious norms, and the influence they have on modifiable NCD risk behaviours.

A whole-of-government and health in all policies approach

To reduce the burden of NCDs among refugees and migrants in the WHO European Region, there must be action on the social and environmental determinants of NCDs in addition to provision of treatment. NCDs and their risk factors are clearly related to lower socioeconomic status and are seen disproportionately in poor and marginalized populations, including some refugee and migrant groups. Consequently, sustained action is needed to mitigate those determinants of health that increase risk for poor health outcomes and that exacerbate inequalities between populations. This requires a whole-of-government approach to counter the myriad of risk factors, many beyond the control of the health sector (41). A health in all policies approach particularly emphasizes the impact of public policies broadly on health systems, health determinants and well-being, and policy-making across government needs to consider the consequence of such policies on refugee and migrant health (42). Health policy-making cannot be isolated from policy-making in other sectors, such as employment, social welfare, education and the media (41). Given that the consequences and economic burden of NCDs will also be felt beyond the health sector, intersectoral collaboration for addressing chronic disease among refugees and migrants ought to be a priority.

Some of the most important innovations for health promotion and NCD reduction are likely to occur outside of the health sector (43), with many opportunities for other sectors of government, as well as the private sector and civil society, to promote the reduction of NCDs and modifiable risk factors among refugee and migrant populations. Win-win partnerships can be forged to create health-promoting environments and also to mitigate the economic impact of NCDs on local and national economies. This

is one of the overarching principles of the Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020 (9). Key partnerships that should be considered include food and agriculture industries for production and marketing of healthier food options and reducing dietary salt intake; urban planning and transport sectors for opportunities for activity, healthy mobility and reduced isolation; education sector to leverage schools as a place to create healthy and active environments, and disseminate health promotion information; employers and trade unions for workplace initiatives such as smoke-free workplaces; hospitality and retail industries for tobacco control and responsible service of alcohol; and even telecommunications and media sectors for increased outreach and dissemination of health promotion campaigns and realization of the potential for e-health and mobile technologies in health promotion and NCD prevention (9,44–47). Private and professional medical and pharmaceutical bodies also have a role to play in regards to issues such as production of essential medicines (47).

Legislative and fiscal instruments for health promotion environments

Developing health promotion environments to reduce risk for NCDs among refugee and migrant populations also depends on the capacity for countries to use the law to implement effective policy measures. The impact of pricing, particularly for alcohol and tobacco, is well established, and the use of fiscal policies to minimize demand, access and affordability for such products, as well as foods high in saturated fats, salt and sugar, is one of the key goals of the WHO European Region's Action Plan (5,48). Public regulation through taxation, subsidies and appropriate packaging and marketing restrictions is essential to ensuring the necessary conditions for people to make healthier choices (48). There is also consistent evidence of the shortcomings of self-regulation schemes for the marketing of food and alcohol products particularly, which has been the preferred strategy in many European countries to date (48).

Ultimately, the state has a crucial role and responsibility in providing supporting and health-promoting environments, and the law is a powerful policy tool for NCD prevention at the population level (48). Policy measures contained in existing regional WHO policy frameworks that are amenable to the use of law include food labelling to help consumers to identify healthier options; bans on trans fats in the food supply; health warnings on packaging; bans on tobacco advertising and promotion; and licensing to reduce alcohol sales, with minimum unit pricing (48). Leveraging on existing international legal instruments, such as the WHO Framework Convention on Tobacco Control, which is currently not being used to its full potential in the Region, presents an opportunity for countries to take action in this area and generate public health benefits for all (28,48).

For health warnings and food labelling, attention needs to be paid to language literacy skills of refugee and migrant groups, and to ensure that packing is plain and legible.

Target primary prevention to culturally and linguistically diverse groups

Implementing structural policy measures is critical for developing health-promotion at the population level. For more targeted interventions, however, it is imperative to understand what drives the health-related behaviours of refugees and migrants, as well as the barriers and enablers to implementing lifestyle changes. Health literacy is discussed extensively in the literature on migrant and ethnic populations and risk for NCDs as a particularly influential factor. Health literacy is the ability to access, understand, appraise, communicate and apply health information to implement personal lifestyle risk modifications (49). Lower health literacy is associated with poorer health outcomes and reduced capacity to engage in health promotion activities (50). Simply providing information about the need to modify risk factors such as smoking, nutrition, alcohol, physical activity and weight will be insufficient to bring about necessary lifestyle changes if it is not accessible for refugees and migrants and does not meet their needs and expectations (49). Prevalence of NCD risk factors among refugees and migrants may, in part, be attributable to low or reduced health literacy when in the host country (e.g. through language problems) or other barriers, such as limited health system exposure.

Language barriers are a major issue for healthy choices for many refugees and migrants, manifesting in what kinds of food they purchase, where they purchase food, what nutritional information they can understand and whether they can gather general health information and support (50). However, it cannot be assumed that limited proficiency in the language of the host country always equates with low health literacy, and care should be taken to ensure health promotion materials are not oversimplified. Research in Australia, for example, found that health and diabetes education materials developed by national bodies were generally not appreciated by linguistically diverse patients, who needed more detailed information rather than just pictures and simplified descriptions (51).

Interventions aimed at promoting healthier behaviours at the population level will have little effect if they do not take into consideration the influence of social, cultural and religious norms and traditions on individual behaviours. This has been examined across different migrant and ethnic populations, particularly in the context of food and physical activity. The main barrier to positive lifestyle change in Bangladeshi communities in the United Kingdom, for example, was a complex hierarchy of values in terms of behaviour change and social expectations (52). Among south Asian populations with type 2 diabetes, healthy eating recommendations, such as smaller portion sizes and reduced levels of rich and fatty foods, were seen as less important than the core social norm of hospitality (53,54); however, most understood the link between lifestyle and diabetes and reported a positive impact of religion on their diabetes management (52,54). This highlights the need to ensure that health systems and health practitioners are culturally and diversity sensitive as an essential component of health promotion, including for NCD prevention (55). Similarly, religious requirements for modesty, and cultural expectations that women should not exercise outdoors, are documented barriers to increasing physical activity among these groups

(56,57). Care must be taken, however, not to make assumptions in terms of the cultural and religious backgrounds of refugees and migrants and incorrectly perceived them to be poorly informed or educated about NCDs and their risk factors, or to have fatalistic attitudes toward illness and death (57).

Less than healthy food choices and minimal physical activity among refugees and migrants has also been attributed to the process of acculturation: as migrants integrate into the new host society they may adopt similar lifestyles and behaviours as the host population, including high-calorie diets and sedentary lifestyles, thereby contributing to the development or exacerbation of NCDs (56). Unavailability of traditional fruits and vegetables in destination countries has also been observed to increase consumption of processed foods for example, which are seen among some as convenient and affordable (52).

Secondary prevention

Where primary prevention is focused more on population-based health promotion interventions to prevent development of risk factors, secondary prevention of NCDs is more targeted at the individual patient level to control disease at its incipient stage to avoid progression and prevent complications. Access to integrated primary health care for early detection and treatment, as well as supporting self-management, are important considerations for secondary prevention among refugees and migrants in the Region.

Integrated primary health care for early detection and treatment

The early detection, diagnosis and treatment of NCDs among refugees and migrants are essential to reducing the burden of disease among these groups. This requires equitable and affordable access to primary health services for everyone, including for essential NCD services, regardless of migrant or legal status. The WHO European Region's Strategy and Action Plan for Refugee and Migrant Health noted the importance of early access to primary care for prevention and management of NCDs (8). The Global Action Plan further highlighted universal health coverage as an overarching principle, emphasizing the right of all people to health promotion and preventive, curative and rehabilitative services, without discrimination or exposure to financial stress, particularly those living in vulnerable situations as many refugees and migrants are (9). For refugees and migrants, universal health coverage, especially at the point of destination, is essential for ensuring continuity of care and medicines as well as for treating complications that may have developed during the migration process (28). Given the chronicity of many NCDs, integrating NCD management into the primary health system is critical to adequately provide the long-term medical care required and to ensure the equity and sustainability of such care (15). Policy should, therefore, focus on taking an equity-based approach that facilitates access to health care for all. This also includes for essential diagnostic equipment, laboratory tools and tests, for core drugs and medications to ensure routine management of NCDs and pain relief

and continuation of pre-emergency treatments (58). Access to primary health services is not only essential for individual health and well-being but also has implications for public health expenditure. Research in Europe has demonstrated that the cost of restricting access to vulnerable people, such as newly arrived refugees and migrants, is ultimately higher in terms of incident health expenditure than the costs incurred in granting access to necessary basic services, the excess costs relating to delayed care, treatment of acute conditions rather than prevention and higher administrative costs associated with variances in entitlement (Case study 3) (59).

Case study 3. Care for undocumented migrants at Geneva University Hospital (Switzerland)

Adopting an equity-based approach to care, the Geneva University Hospital has developed programmes to respond to the health needs of undocumented migrants in Geneva, where 90% lack health insurance. Critically, these programmes prioritize integrating care for such groups into the primary public health system with a structured care pathway through processes of assessment and referrals. This is in contrast to other cantons in Switzerland, where it is primarily nongovernmental organizations that provide services, if any, for undocumented migrants. The hospital has implemented specific guidelines to actively detect NCDs among migrant patients and to focus on preventive health interventions, including to address social determinants and risk factors by cooperating with non-health partners to provide a range of social support and welfare services (e.g. with respect to food, housing and education). A major driver of the programme, and of the enforcement of health equity policies for access and delivery of care to migrants at the hospital, is that even in a setting with theoretical universal health coverage, real-life access is still greatly dependent on socioeconomic and insurance status. Even among those who are insured, people of lower socioeconomic status in Geneva generally present with more CVD risk factors, compounded by having to forego care for financial reasons. Similarly, even insured patients with diabetes who are from lower socioeconomic groups across Switzerland receive lower quality care and have poorer health outcomes. Research following implementation of equity-driven health care policy at the Geneva University Hospital has shown no difference in quality of diabetes care between insured and uninsured patients for access to and delivery of standard diabetes care. These programmes are an example of the effective integration of NCD management into primary health systems, and the importance of such systems in ensuring equitable delivery of care to refugees and migrants in vulnerable situations, even where there is universal coverage. Geneva University Hospital enforces policies of absolute personal data protection towards other public administration, notably immigration, in order to address undocumented migrants' fear of being identified by public authorities.

Sources: Jackson et al., 2016 (60), 2018 (15); Yves Jackson, date unknown (61) and personal communication, 9 November 2018.

In regard to screening for early detection of health issues, protocols for refugees and migrants have typically focused on detection of infectious diseases, and screening for NCDs is not normally done as part of the first health assessment. While WHO does not recommend any obligatory screening of refugees and migrants, it does recommend that health checks, including for NCDs, should be offered through primary health services after initial settlement in order to ensure provision of appropriate care (58). This would be a good opportunity to capture the health status and needs of refugees and migrants in relation to NCDs, identify those who are symptomatic and provide information regarding potential risk factors for future development of NCDs and/or further complications. Targeted screening of risk factors or other chronic conditions in patients with known NCDs could be clinically relevant and should be conducted where possible, taking into consideration cost–effectiveness as well as the impact on the health system in question. Such screening should prioritize high-risk patients and pregnant women. Screening in this context, however, must only be conducted where appropriate follow-up treatment is available.

The integration of NCDs into primary health care is a key objective for the effective detection and treatment of NCDs among refugees and migrants. This shifts the approach from addressing each disease separately, or vertically, to addressing NCDs collectively as a cluster of diseases within primary care (62). An integrated approach to NCD management is considered the best model for ensuring care is delivered in an efficient and effective manner, and with desired impact (62). It is a cost-effective approach and is also in line with principles of equity, social justice and universal health coverage (61). It optimizes the potential for services to be coherent, uniform and of high quality, irrespective of an individual's status (62). Primary health care is often the first point of contact that refugees and migrants have with the wider health system in the host country upon settling. Consequently, strengthening the integration of NCD diagnosis and treatment into primary care service delivery is a key opportunity for addressing the burden of disease among these groups. However, this relies on capacity of primary health care staff to work with culturally and linguistically diverse refugee and migrant groups, and availability of translators and interpreters to overcome language barriers, particularly for those newly arrived. In fact, training of health professionals to improve communication, and to be aware of ethnic differences in health, could go a long way to improving treatment outcomes for refugees and migrants (6).

Effective integration of NCD management into primary care will also ensure coordination of care between providers, and functioning and supportive mechanisms for referral (63,64). Consultations with general practitioners are normally too short to provide effective individual counselling for risk factor management, and refugees and migrants often only present when they are already sick (49). Therefore, there is a need to better coordinate and strengthen allied primary health professionals in NCD management for these groups. In this context, consideration should also be given to linking and coordinating NCD treatment interventions with other existing chronic disease programmes, for example those for tuberculosis or HIV, or with maternal and child health (47). Collaboration, for example, through screening for diabetes in tuberculosis clinics could be an important opportunity given that those with diabetes

are two to three times more likely to develop tuberculosis (62). Similarly, women with gestational diabetes have greater risk for poor pregnancy outcomes, and managing this through maternal and child health programmes would be beneficial (62). In fact, given that exposure to risk factors accumulate through the life-course, and that diabetes risk may even be influenced by conditions in utero, NCD interventions should also be considered to be integrated into maternal and child health and nutrition programmes (47). Such integrated care could reduce missed opportunities for diagnosis and care among refugee and migrant populations who are likely to carry the burden of these conditions. Combined treatment of HIV and diabetes or other long-term or palliative NCD care in chronic care clinics is another example of integrated care (47,62). Research in other parts of the world has even found that community stigma can be reduced and medical compliance strengthened by integrating these services and focusing on chronic illness as a whole rather than on one area (e.g. diabetes or HIV alone) (47).

Supporting self-management

Self-management programmes for NCDs and other diseases are widely considered an important adjunct to treatment and care for people with chronic illness. Self-management programmes are designed to empower patients to assume active roles in maintaining their own health, teaching them to manage symptoms and engage in health-promoting behaviours (65). They adopt a peer-based approach to engage patients in self-care for NCDs based on the premise that people with chronic conditions present common needs, including dealing with symptoms, medication regimens and lifestyle adjustments (65). Stanford's Chronic Disease Self-Management Program (CDSMP) is a well-known example. It has been shown to significantly improve the health behaviours of participants in terms of self-efficacy, exercise, communication with physicians and cognitive symptom management, as well as actual health status in terms of fatigue, pain, disability, depression, health distress and fewer hospitalizations and emergency visits (66,67). The CDSMP has also been assessed for its ability to be adapted to culturally and linguistically diverse populations. Generally, research has found positive results for its use with people of ethnic and migrant backgrounds, also showing higher self-efficacy in managing illness, increased use of cognitive coping strategies, reduced symptomology, improved symptom management and improved exercise behaviours and general health status (65,68–70). Such findings demonstrate its potential effectiveness in increasing chronic disease self-management skills (71).

The focus of these programmes on peer support and peer learning has been emphasized as a potentially good model for NCD prevention among refugees and migrants. In a research study of Chinese migrants managing their diabetes in Australia, for example, researchers found that the patient community already created a close peer network to exchange diabetes management information, including with respect to recipes and nutritional supplements (51). The group appeared to have a preference for implicit support through shared activity without actively seeking support (51). The study found that traditional Chinese health beliefs around food and medicine to optimize glycaemia shared among peers could result in undernutrition

from severe dietary restrictions, nutrient toxicity from multiple supplements and even medical emergencies from unnecessary use of insulin (51). Consequently, peer-based self-management programmes such as CDSMP, plus peer leaders who speak the languages of participants, could fit well with certain populations and might mitigate risks of sharing low-quality and misleading information in networks (71). Research on the role of self-management in caring for people from culturally and linguistically diverse backgrounds in Australia found that peer-led programmes could achieve similar results to professional-led programmes (while being cost-effective) (57) and recruitment and training of community members is, therefore, encouraged.

Certainly, there are clear potential benefits of advocating self-management programmes for refugees and migrants managing chronic NCDs. However, there are also particular challenges, including the diverse cultural and social norms of refugee and migrant patients. There is some research, which is being conducted in European countries, the United States of America and Australia, indicating that these programmes may have little cultural relevance to refugee and migrant populations, and may even conflict with certain cultural understandings and values (57). While programmes reflect a focus on the self and individual responsibility for behaviour change and risk-factor reduction, many African, south Asian and Chinese cultures, among others, are collectivist oriented and place focus on the family and group relationships (72). Although this may be responsive to a peer-based structure for a programme, it may be at odds with the content, which predominately caters to those who value independence and self-determination (57). Research exploring self-management for chronic disease among asylum seekers from sub-Saharan Africa, for example, found the programme was difficult for this group to relate to given its focus on the self and “I” (62). Other research has also highlighted the potential conflict between individualistic values of autonomy and patient empowerment in self-management, and the collectivist views of different cultures in regard to decision-making and disease management (51,52,73,74). In this context, health care practices could be more effective and patient adherence greater if a more community-based or collectivist approach is considered (72).

The focus on family relationships among those patients from collectivist cultures may also influence the readiness of those patients to engage in self-management programmes through concerns about disclosing their disease to others. In a study of factors affecting the disclosure of diabetes among Surinamese groups in the Netherlands, it was found that talking about disease was taboo as it may lead to social disgrace for the patient and the family; this meant that patients were reluctant to disclose their disease status, which was a key barrier to participation in community-based diabetes self-management education. For NCD education initiatives and self-management programmes to be impactful and accessible, they must be adapted to relate the cultural and social norms of the target group as much as feasibly. However, CDSMP programmes are evidence based and adaptations should only be enacted with consultation through trainers, and only to the extent that they do not compromise the fidelity of the programme (71).

Self-management programmes must also take into consideration issues such as vulnerability and structural barriers. For example, self-management efforts can be overwhelmed by priorities and stressors associated with the application for refugee status and issues such as finding work among the asylum seekers from sub-Saharan Africa (72). Other structural and socioeconomic issues, such as low income and unmet housing needs, also impact the ability to refugees and migrants to prioritize self-management, and limit uptake and retention in such programmes. In fact, these factors impact on NCD treatment and management more broadly, where refugee and migrant patients have been reported to reduce medication intake, for example, through the need to prioritize food purchases (M Sodemann, personal communication via expert consultation review process). Prevention interventions, whether through self-management programmes or through individual clinical care, must be cognisant of the context and lived realities of refugees and migrants in order to have maximum relevance and impact on these groups.

Managing NCDs in situations of sudden, large influxes of refugees and migrants

While the health component of emergency response during large and sudden influxes of refugees and migrants has traditionally focused on acute conditions such as infectious diseases and trauma, such emergencies cause particular issues for treatment and management of NCDs (75). Not only are refugees and migrants already vulnerable to health problems through the conditions experienced during sudden and forced displacement, the need for follow-up over a long time (including among multiple providers), regular treatment and medication, management of complications and possible palliative care create additional hazards during crisis situations for those with, or at risk for, NCDs (76). The key issue in this context is that any lack of access to health facilities can interrupt the management of NCDs and risks acute exacerbation of conditions, potentially causing life-threatening deterioration, and increases the costs of managing complications (75,76). Even where health care is available, initial health assessments tend to prioritize infectious diseases and may force migrants also to avoid disclosing health issues for fear of legal consequences.

Within available resources, provision of comprehensive services at point of care and reception centres for newly arrived refugees and migrants, irrespective of legal status, is essential (58,76). Many of the same principles for early detection and treatment also apply in acute settings. Obligatory screening is not recommended at entry points; however, triage upon arrival should be conducted to assess and provide appropriate care, particularly for vulnerable groups including pregnant women and older people, who may suffer from multimorbidity (58,76). Health checks or assessments should be provided with proper diagnosis and treatment following (58). Priorities for managing NCDs in such acute situations must be to provide essential treatment for symptomatic conditions and to prevent complications by avoiding lengthy and unnecessary interruptions and delays in care (77). Follow-up and referral for conditions that

cannot be managed at the primary level are important (77), and portable patient-held documents containing standardized medical information for mobile populations are key to ensure continuity of care (75,76). Other considerations include the need for inclusive and culturally sensitive communication services, such as interpreters (76), and the availability of diagnostic tools and equipment and basic medications during periods of increased demand (77). Although developed for low-resource settings, minimum requirements are prescribed in the WHO Package of Essential Noncommunicable Disease Interventions, which could provide a useful starting point (Case study 4) (75,78).

Case study 4. NCD kits and medical supplies (WHO Regional Offices for the Eastern Mediterranean and Europe)

NCDs are a leading cause of mortality and morbidity in the Eastern Mediterranean Region, accounting for approximately 62% of all deaths in the Region in 2016. Conflict, displacement and other vulnerabilities, however, cause major disturbances to the continued supply and provision of medication and equipment critical to managing NCDs. Medication interruption and unavailability have been cited as key barriers to health care among refugees and migrants in the Region. In response to this, the WHO Regional Office for the Eastern Mediterranean has developed NCD kits to treat refugees and displaced people, among others, during crisis situations and emergencies. Each kit is a standardized package that is provided to outpatient health practitioners for the management of the most common conditions, including CVDs, hypertension and diabetes, at the primary health care level, particularly to refill ongoing treatment regimens. The kits contain 22 essential oral medications, supplies (e.g. gloves and gauze) and equipment (e.g. glucometers). The kits are calibrated to treat 10 000 people for three months. These NCD kits have been essential in getting the necessary treatment to people in acute emergency situations.

The WHO Regional Office for Europe has also been supporting health facilities in northwest Syrian Arab Republic through monthly shipments of essential medical supplies delivered from its operational hub in Turkey. Regular supplies of life-saving medicines, medical kits and medical supplies allow facilities to remain functional, and continue providing primary health care to those in need. In just September of 2018, more than 104 tonnes of supplies were shipped, enabling facilities to provide approximately 677 000 medical treatments, including for NCDs.

Sources: WHO Regional Office for the Eastern Mediterranean, 2017 (79); Slama, 2018 (7); WHO Regional Office for Europe, 2018 (80).

Policy considerations

The evidence presented in this technical guidance clearly establishes the relevance and importance of addressing the burden of NCDs among refugees and migrants in the WHO European Region. The policy considerations outlined for prevention and management within these groups are set against the awareness that effective solutions require action at the macro level and so will also be applicable to national populations at large. The considerations are based on the literature reviewed and put forward with a view to advancing the objectives of the global and European action plans on NCDs and the WHO European Region's Strategy and Action Plan for Refugee and Migrant Health. It is imperative to anchor policy considerations and actions at the country level, given the heterogeneity in the Region with regards to the capacity of health systems and the residing refugees and migrants with their specific needs.

Primary prevention

Multisectoral health in all policies and whole-of-government approaches

Social and environmental determinants of NCDs could be tackled in a multisectoral way by the health sector:

- supporting other sectors of government to consider the impact of their policy-making on the burden of NCDs among refugees and migrants;
- encouraging win-win partnerships with other relevant sectors (e.g. food and agriculture, urban design and planning, education, employment and media) and to encourage the private sector to play a role; and
- committing to universal health coverage for all refugees and migrants and providing early access to preventive and curative primary care services for NCDs, including access to diagnostic tools, case-finding and basic minimum package of medications.

Legislative and fiscal instruments for health promotion environments

Legislative and fiscal instruments could be used for:

- building requisite legal capacity in health ministries and agencies;
- adopting, where feasible, appropriate measures to develop health-promoting environments and reduce access and availability of harmful products (e.g. foods high in saturated and trans fats, salt and sugar);
- utilizing existing legal instruments to their full capacity to reduce risk factors (e.g. the WHO Framework Convention on Tobacco Control);
- designing taxes on food to encourage reformulation of ingredients by manufacturers, for example taxing products that deviate from recommended amounts of specific ingredient; and

- ensuring that any tax revenue generated is allocated for public health spending or to subsidize healthier food options in order to avoid financial burdens for those of lower socioeconomic status.

Target primary prevention to culturally and linguistically diverse groups

Health education efforts will have little impact if they are not relevant or accessible to the target population. Relevant initiatives include:

- conducting targeted health promotion and health education campaigns that are culturally and linguistically relevant (e.g. with respect to social and cultural norms around traditional eating practices, exercise and illness recovery);
- generating knowledge of the different social, cultural, religious and structural factors that influence risk-related behaviours within refugee and migrant populations;
- encouraging good relationships between health practitioners, educators, multiethnic representatives and community- and faith-based organizations;
- utilizing familiar and recognizable settings for outreach and adapting preventive health programmes to suit the situations; and
- utilizing the education sector as a particular good area through which to target messages to children and adolescents.

Secondary prevention

Strengthen integration of NCD prevention and management into primary health care

Provision of universal access to primary health services is not only essential for individual health and well-being but also reduces overall public health expenditure in the long term. Considerations include:

- strengthening the integration of NCD diagnosis and treatment into primary care service delivery to address the burden of disease among refugees and migrants;
- ensuring functional and supportive pathways for referral from general practitioners to all levels of care to advance the universal health coverage agenda; and
- capitalizing on synergies between management of NCDs and other diseases (e.g. tuberculosis or HIV), maternal and child health and palliative care programmes.

Provision of a culturally competent workforce

Support the workforce to inform health care provision by:

- encouraging interaction between professionals working in NCDs and migrant health to improve knowledge and skills;

- improving health practitioners' knowledge of refugee and migrant patients (e.g. with regard to attitudes about health, illness, chronicity and treatment), which impact quality of care; and
- ensuring basic training on the relevant NCDs in migrant-originating countries, NCD-related vulnerabilities for migrants, ethnic differences in health and potential risk factors in the host country.

Incorporation of specific directives for refugees and migrants into current national NCD policies

The issues of NCDs in refugees and migrants can be closely integrated with policies for the whole population, by:

- ensuring the needs of refugees and migrants are met through national strategies for the prevention and control of NCDs, with their full involvement;
- analysing where there are shortfalls or non-adherence to current regional and global commitments on NCD prevention and control, and using the reasons to inform future policy development and respond to weaknesses; and
- encouraging exchange of knowledge and skills between professionals working with NCDs and those working in migrant health, thus supporting joint action in research, training, patient advocacy and clinical care and management.

Adaption of chronic-disease self-management programmes

Self-management programmes for chronic-disease could be adapted by:

- ensuring they are culturally relevant and accessible to the target population;
- encouraging the training of programme leaders from the refugee and migrant communities where the programme is being offered; and
- ensuring the adaptation does not compromise the fidelity and intent of any evidence-based programme as it was designed.

Support NCD prevention and management through appropriate migrant-specific and migrant-sensitive data

Vital statistics and routine data collection can support service provision and future action by:

- including migrant status and other related information into vital statistics and routine data collection with full consideration of issues of ethics and confidentiality; and
- considering methods such as linking health records and population-based registers or census data as short-term solutions to help to generate knowledge on refugees and migrants and NCDs.

Managing NCDs in situations of sudden, large influxes of refugees and migrants

During crisis situations, those refugees and migrants with, or at risk for, NCDs can be protected by:

- committing to universal health coverage and providing early access to preventive and curative primary care services for NCDs;
- ensuring that management of NCDs is not overlooked in acute situations, including large and sudden influxes of refugees and migrants;
- offering health checks through primary health services that also focus on detection of common NCDs and risk factors, ensuring mechanisms for treatment and follow-up are in place; and
- providing essential treatment for symptomatic conditions and preventing complications by avoiding lengthy and unnecessary interruptions or delays in care.

References

1. Noncommunicable diseases. Geneva: World Health Organization; 2018 (Factsheet; <http://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>, accessed 9 December 2018).
2. WHO report on the health of refugees and migrants in Europe: no public health without refugee and migrant health. Copenhagen: WHO Regional Office for Europe; 2018.
3. Global status report on noncommunicable diseases 2014. Geneva: World Health Organization; 2014 (http://apps.who.int/iris/bitstream/handle/10665/148114/9789241564854_eng.pdf?sequence=1, accessed 9 December 2018).
4. Time to act: the global emergency of noncommunicable diseases. Report on “health and development: held back by noncommunicable diseases”. In: Meeting of the International Diabetes Federation, World Heart Federation and International Union Against Cancer during the 62nd World Health Assembly 2009 (https://ncdalliance.org/sites/default/files/resource_files/timetoact.pdf, accessed 6 November 2018).
5. Action plan for the prevention and control of noncommunicable diseases in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2016 (http://www.euro.who.int/__data/assets/pdf_file/0008/346328/NCD-ActionPlan-GB.pdf?ua=1, accessed 6 November 2018).
6. Agyemang C, van den Born B-J. Non-communicable diseases in migrants: an expert review. *J Travel Med.* 2018;107:1–9.
7. Slama S. The epidemiology of refugee and migrant health: noncommunicable diseases. In: School on refugee and migrant health, Palermo, September 2018. Copenhagen: WHO Regional Office for Europe; 2018 (Plenary session 4; http://www.euro.who.int/__data/assets/pdf_file/0007/384415/wssp-d2-s1-ss-eng.pdf, accessed 9 December 2018).
8. Strategy and action plan for refugee and migrant health in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2016 (EUR/RC66/8 + EUR/RC66/Conf.Doc./4; http://www.euro.who.int/__data/assets/pdf_file/0004/314725/66wd08e_MigrantHealthStrategyActionPlan_160424.pdf?ua=1, accessed 9 December 2018).
9. Global action plan for the prevention and control of noncommunicable diseases 2013–2020. Geneva: World Health Organization; 2013 (http://apps.who.int/iris/bitstream/handle/10665/94384/9789241506236_eng.pdf?sequence=1, accessed 9 December 2018).
10. Resolution 70/1. Transforming our world: the 2030 Agenda for sustainable development. New York: United Nations; 2015 (United Nations General Assembly; http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E, accessed 15 October 2018).

11. Cost of non-communicable diseases in the EU. Brussels: European Commission; 2018 (<https://ec.europa.eu/jrc/en/health-knowledge-gateway/societal-impacts/costs>, accessed 9 December 2018).
12. Noncommunicable diseases (NCD). In: Global Health Observatory (GHO) data [website]. Geneva: World Health Organization; 2018 (<http://www.who.int/gho/ncd/en/>, accessed 9 December 2018).
13. Choukem SP, Fabreguettes C, Akwo E, Porcher R, Nguewa JL, Bouche C et al. Influence of migration on characteristics of type 2 diabetes in sub-Saharan Africans. *Diabetes Metab.* 2014;40(1):56–60.
14. Meeks KA, Freitas-Da-Silva D, Adeyemo A, Beune EJ, Modesti PA, Stronks K et al. Disparities in type 2 diabetes prevalence among ethnic minority groups resident in Europe: a systematic review and meta-analysis. *Intern Emerg Med.* 2016;11(3):327–40.
15. Jackson Y, Paignon A, Wolff H, Delicado N. Health of undocumented migrants in primary care in Switzerland. *PLOS One.* 2018;13(7):e0201313.
16. Goulão B, Santos O, do Carmo I. The impact of migration on body weight: a review. *Cad Saude Publica.* 2015;31(2):229–45.
17. Toselli S, Gualdi-Russo E, Boulous DNK, Anwar WA, Lakhous C, Jaouadi I et al. Prevalence of overweight and obesity in adults from north Africa. *Eur J Public Health.* 2014;24(suppl 1):31–9.
18. da Costa LP, Dias SF, do Rosario Oliveria Martins M. Association between length of residence and overweight among adult immigrants in Portugal: a nationwide cross-sectional study. *BMC Public Health.* 2017;17(1):316.
19. Dijkshoorn H, Nicolaou M, Ujicic-Voortman JK, Schouten GM, Bouwman-Notenboom AJ, Berns MP et al. Overweight and obesity in young Turkish, Moroccan and Surinamese migrants of the second generation in the Netherlands. *Public Health Nutr.* 2014;17(9):2037–44.
20. Kinnunen TI, Skogberg N, Härkänen T, Lundqvist A, Laatikainen T, Koponen P. Overweight and abdominal obesity in women of childbearing age of Russian, Somali and Kurdish origin and the general Finnish population. *J Public Health.* 2017;40(2):262–70.
21. Gualdi-Russo E, Toselli S, Masotti S, Marzouk D, Sundquist K, Sundquist J. Health, growth and psychosocial adaptation of immigrant children. *Eur J Public Health.* 2014;24(suppl 1):16–25.
22. Salama E, Niemelä S, Suvisaari J, Laatikainen T, Koponen P, Castañeda AE. The prevalence of substance use among Russian, Somali and Kurdish migrants in Finland: a population-based study. *BMC Public Health.* 2018;18(1):651.
23. Manhica H, Gauffin K, Almquist YB, Rostila M, Berg L, Rodríguez García de Cortázar A et al. Hospital admissions due to alcohol related disorders among young adult refugees who arrived in Sweden as teenagers: a national cohort study. *BMC Public Health.* 2017;17(1):644.

24. Horyniak D, Melo JS, Farrell RM, Ojeda VD, Strathdee SA. Epidemiology of substance use among forced migrants: a global systematic review. *PLOS One*. 2016;11(7):e0159134.
25. Bhopal R. Chronic diseases in Europe's migrant and ethnic minorities: challenges, solutions and a vision. *Eur J Public Health*. 2009;19(2):140–43.
26. Agyemang C, van Oeffelen AA, Norredam M, Kappelle LJ, Klijn CJM, Bots ML et al. Socioeconomic inequalities in stroke incidence among migrant groups: analysis of nationwide data. *Stroke*. 2014;45(8):2397–403.
27. Agyemang C, van Oeffelen L, Bots M, Stronks K, Vaartjes I. Socioeconomic inequalities in the incidence of cerebrovascular accident and subtypes among migrant groups in the Netherlands: analysis of nation-wide data. *Circulation*. 2014;129(suppl 1):AP310.
28. Non-communicable diseases and migration. Geneva: International Organization for Migration; 2018 (Information sheet; https://www.iom.int/sites/default/files/our_work/DMM/Migration-Health/mhd_infosheet_ncds_13.07.2018.pdf, accessed 9 December 2018).
29. De Vito E, de Waure C, Specchia ML, Ricciardi W. Public health aspects of migrant health: a review of the evidence on health status for undocumented migrants in the European Region. Copenhagen: WHO Regional Office for Europe; 2015 (Health Evidence Network synthesis report 42; http://www.euro.who.int/__data/assets/pdf_file/0004/289255/WHO-HEN-Report-A5-3-Undocumented_FINAL-rev1.pdf?ua=1, accessed 9 December 2018).
30. Davies A, Blake C, Dhavan P. Social determinants and risk factors for non-communicable diseases (NCDs) in South Asian migrant populations in Europe. *Asia Eur J*. 2011;8(4):461–73.
31. Castañeda H. Illegality as a risk factor: a survey of unauthorized migrant patients in a Berlin clinic. *Soc Sci Med*. 2009;68(8):1552–60.
32. Bhopal R, Fischbacher C, Povey C, Chalmers J, Mueller G, Steiner M et al. Cohort profile: Scottish Health and Ethnicity Linkage Study of 4.65 million people exploring ethnic variations in disease in Scotland. *Int J Epidemiol*. 2011;40(5):1168–75.
33. Kilpeläinen K, Parikka S, Koponen P, Koskinen S, Rotko T, Koskela T et al. Finnish experiences of health monitoring: Local, regional, and national data sources for policy evaluation. *Glob Health Action*. 2016;9:28824.
34. Puska P. Successful prevention of non-communicable diseases: 25 year experiences with North Karelia Project in Finland. *Public Health Med*. 2002;4(1):5–7.
35. Castañeda A, Rask S, Koponen P, Mölsä M, Koskinen S, editors. Migrant health and wellbeing. a study on persons of Russian, Somali and Kurdish origin in Finland. Helsinki: National Institute for Health and Welfare; 2012 (Report 61; in Finnish, English abstract).

36. Laatikainen T, Wikström K, Skogberg N, Rask S, Castañeda A, Koskinen S et al. Kansanterveysongelmat maahanmuuttajilla [Non-communicable diseases among immigrants in Finland]. *Finnish Med J.* 2016;12(71):877–83 (in Finnish, English abstract).
37. Skogberg N, Laatikainen T, Lundqvist A, Lilja E, Härkänen T, Koponen, P. Which anthropometric measures best indicate type 2 diabetes among Russian, Somali and Kurdish origin migrants in Finland? A cross-sectional study. *BMJ Open.* 2018;8(5): e019166.
38. Briefly in English. Stop diabetes: knowledge-based solutions [website]. Stop Diabetes; 2018 (<http://www.uef.fi/web/stopdia/briefly-in-english>, accessed 3 December 2018).
39. CHRODIS PLUS [website]. Brussels: CHRODIS PLUS Joint Action; 2018 (<http://chrodis.eu/>, accessed 3 December 2018).
40. Scottish Health and Ethnicity Linkage Study. Edinburgh: Usher Institute, University of Edinburgh; 2018 (<https://www.ed.ac.uk/usher/scottish-health-ethnicity-linkage>, accessed 9 December 2018).
41. A strategy to prevent chronic disease in Europe: a focus on public health action. Copenhagen: WHO Regional Office for Europe; 2004 (<http://apps.who.int/iris/bitstream/handle/10665/107570/E83057.pdf?sequence=1&isAllowed=y>, accessed 9 December 2018).
42. Health in all policies. Helsinki statement: framework for action. In: Eighth Global Conference on Health Promotion, Helsinki, June 2013. Geneva: World Health Organization; 2014 (http://apps.who.int/iris/bitstream/handle/10665/112636/9789241506908_eng.pdf?sequence=1, accessed 9 December 2018).
43. Diem G, Brownson R, Grabauskas V, Shatchkute A, Stachenko S. Prevention and control of noncommunicable diseases through evidence-based public health: implementing the NCD 2020 Action Plan. *Glob Health Promot.* 2016;23(3):5–13.
44. Non-communicable diseases in the Americas: all sectors of society can help solve the problem. Washington (DC): Pan American Health Organization, WHO Regional Office for the Americas; 2011 (Issue brief on non-communicable diseases; <https://www.paho.org/hq/dmdocuments/2011/paho-policy-brief-1-En-web1.pdf>, accessed 9 December 2018).
45. Prevention and control of noncommunicable diseases in the European Region: a progress report. Copenhagen: WHO Regional Office for Europe; 2014 (http://www.euro.who.int/__data/assets/pdf_file/0004/235975/Prevention-and-control-of-noncommunicable-diseases-in-the-European-Region-A-progress-report-Eng.pdf?ua=1, accessed 9 December 2018).
46. Bay JL, Hipkins R, Siddiqi K, Huque R, Dixon R, Shirley D et al. School-based primary NCD risk reduction: education and public health perspectives. *Health Promot Int.* 2017;32(2):369–79.

47. Demaio AR, Nielsen KK, Tersbøl BP, Kallestrup P, Meyrowitsch DW. Primary health care: a strategic framework for the prevention and control of chronic non-communicable disease. *Glob Health Action*. 2014;7(1):24504.
48. Key considerations for the use of law to prevent noncommunicable diseases in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2017 (http://www.euro.who.int/__data/assets/pdf_file/0009/333954/Moscow-report.pdf, accessed 9 December 2018).
49. Dennis S, Williams A, Taggart J, Newall A, Denney-Wilson E, Zwar N et al. Which providers can bridge the health literacy gap in lifestyle risk factor modification education: a systematic review and narrative synthesis. *BMC Fam Pract*. 2012;13(1):44.
50. Taggart J, Williams A. A systematic review of interventions in primary care to improve health literacy for chronic disease behavioural risk factors. *BMC Fam Pract*. 2012;13(1):49.
51. Choi TST, Walker KZ, Palermo C. Diabetes management in a foreign land: a case study on Chinese Australians. *Health Soc Care Community*. 2018;26(2):225–32.
52. Grace C, Begum R, Subhani S, Kopelman P, Greenhalgh T. Prevention of type 2 diabetes in British Bangladeshis: qualitative study of community, religious, and professional perspectives. *BMJ*. 2008;337(1):a1931.
53. Patel N, Ferrer HB, Tyrer F, Wray P, Farooqi A, Davies MJ et al. Barriers and facilitators to healthy lifestyle changes in minority ethnic populations in the UK: a narrative review. *J Racial Ethn Health Disparities*. 2017;4(6):1107–19.
54. Singh H, Cinnirella M, Bradley C. Support systems for and barriers to diabetes management in South Asians and whites in the UK: qualitative study of patients' perspectives. *BMJ Open*. 2012;2(1):e001459.
55. Health promotion for improved refugee and migrant health. Copenhagen: WHO Regional Office for Europe; 2018 (Technical guidance on refugee and migrant health).
56. Rechel B, Mladovsky P, Ingleby D, Mackenbach JP, McKee M. Migration and health in an increasingly diverse Europe. *Lancet*. 2013;381:1235–45.
57. Walker C, Weeks A, McAvoy B, Demetriou E. Exploring the role of self-management programmes in caring for people from culturally and linguistically diverse backgrounds in Melbourne, Australia. *Health Expect*. 2005;8(4):315–23.
58. Migration and health: key issues. In: Health topics [website]. Copenhagen: WHO Regional Office for Europe; 2018 (<http://www.euro.who.int/en/health-topics/health-determinants/migration-and-health/migrant-health-in-the-european-region/migration-and-health-key-issues>, accessed 9 December 2018).
59. Bozorgmehr K, Razum O. Effect of restricting access to health care on health expenditures among asylum-seekers and refugees: a quasi-experimental study in Germany, 1994–2013. *PLOS One*. 2015;10(7): e0131483.
60. Jackson Y, Carlos Lozano Becerra J, Carpentier M. Quality of diabetes care and health insurance coverage: a retrospective study in an outpatient academic public hospital in Switzerland. *BMC Health Serv Res*. 2016;16:540.

61. Jackson Y. Health care for undocumented migrants in Geneva: safety is the key for success. Geneva: Geneva University Hospital; date unknown (https://www.ohchr.org/Documents/Issues/Migration/GlobalCompactMigration/Presentation_GenevaUniversityHospital.pdf, accessed 9 December 2018).
62. Narain J. Integrating services for noncommunicable disease prevention and control: use of primary health care approach. *Indian J Community Med.* 2011;36(suppl1):S67–71.
63. Tackling NCDs: “best buys” and other recommended interventions for the prevention and control of noncommunicable diseases. Geneva: World Health Organization; 2017 (<http://apps.who.int/iris/bitstream/handle/10665/259232/WHO-NMH-NVI-17.9-eng.pdf?sequence=1>, accessed 9 December 2018).
64. Together on the road to universal health coverage: a call to action. Geneva: World Health Organization; 2017 (<http://apps.who.int/iris/bitstream/handle/10665/258962/WHO-HIS-HGF-17.1-eng.pdf?sequence=1>, accessed 9 December 2018).
65. Gitlin LN, Chernett NL, Harris LF, Palmer D, Hopkins P, Dennis MP. Harvest health: translation of the chronic disease self-management program for older African Americans in a senior setting. *Gerontologist.* 2008;48(5):698–705.
66. Lorig KR, Sobel DS, Ritter PL, Laurent D, Hobbs M. Effect of a self-management program on patients with chronic disease. *Eff Clin Pract.* 2001;4(6):256–62.
67. Lorig KR, Sobel DS, , Stewart AL, Brown BW, Bandura A, Ritter P et al. Evidence suggesting that a chronic disease self-management program can improve health status with reducing hospitalization: a randomized trial. *Med Care.* 1999;37(1):5–14.
68. Siu AM, Chan CC, Poon PK, Chui DY, Chan SC. Evaluation of the chronic disease self-management program in a Chinese population. *Patient Educ Couns.* 2007;65(1):42–50.
69. Swerissen H, Belfrage J, Weeks A, Jordan L, Walker C, Furler J et al. A randomised control trial of a self-management program for people with chronic illness from Vietnamese, Chinese, Italian and Greek backgrounds. *Patient Educ Couns.* 2006;64(1–3):360–8.
70. Lorig KR, Ritter PL, González VM. Hispanic chronic disease self-management: a randomized community-based outcome trial. *Nurs Res.* 2003;52(6):361–9.
71. Tomioka M, Braun KL, Compton M, Tanoue L. Adapting Stanford’s Chronic Disease Self-Management Program to Hawaii’s multicultural population. *Gerontologist.* 2012;52(1):121–32.
72. Kennedy A, Rogers A, Chew-Graham C, Blakeman T, Bowen R, Gardner C et al. Implementation of a self-management support approach (WISE) across a health system: a process evaluation explaining what did and did not work for organisations, clinicians and patients. *Implement Sci.* 2014;9(1):129.
73. Issaka A, Lamaro G, Renzaho A. Sociocultural factors and perceptions associated with type 2 diabetes among sub-Saharan African migrants in Melbourne, Victoria. *Nutr Diet.* 2016;73(1):28–35.

74. Kohinor MJ, Stronks K, Haafkens JA. Factors affecting the disclosure of diabetes by ethnic minority patients: a qualitative study among Surinamese in the Netherlands. *MBC Public Health*. 2011;11(1):399.
75. Slama S, Kim H-J, Roglic G, Boulle P, Hering H, Varghese C et al. Care of noncommunicable diseases in emergencies. *Lancet*. 2017;389(10066):326–30.
76. Pavli A, Maltezou H. Health problems of newly arrived migrants and refugees in Europe. *J Travel Med*. 2017;24(4):1–8.
77. Aebischer Perone S, Martinez E, du Mortier S, Rossi R, Pahud M, Urbaniak V et al. Non-communicable diseases in humanitarian settings: ten essential questions. *Confl Health*. 2017;11(1):1–17.
78. Package of essential noncommunicable (PEN) disease interventions for primary health care in low-resource settings. Geneva: World Health Organization; 2010 (https://www.who.int/nmh/publications/essential_ncd_interventions_lr_settings.pdf, accessed 9 December 2018).
79. Noncommunicable diseases kit. Cairo: WHO Regional Office for the Eastern Mediterranean; 2017 (<https://www.who.int/emergencies/kits/ncd-information-note.pdf?ua=1>, accessed 6 December 2018).
80. WHO delivers largest cross-border shipment of health supplies to northwest Syrian Arab Republic to date. Copenhagen: WHO Regional Office for Europe; 2018 (<http://www.euro.who.int/en/health-topics/emergencies/pages/news/news/2018/10/who-delivers-largest-cross-border-shipment-of-health-supplies-to-northwest-syrian-arab-republic-to-date>, accessed 9 December 2018).

Annex 1. Resources

Public regulation to meet the problem of NCDs

WHO Regional Office for Europe (2017). Key considerations for the use of law to prevent noncommunicable diseases in the WHO European Region: report of an intensive legal training and capacity-building workshop on law and noncommunicable diseases. Copenhagen: WHO Regional Office for Europe (http://www.euro.who.int/__data/assets/pdf_file/0009/333954/Moscow-report.pdf?ua=1, accessed 6 December 2018).

Scottish Health and Ethnicity Linkage Study

Bhopal R, Fischbacher C, Povey C, Chalmers J, Mueller G, Steiner M et al. (2011). Cohort profile: Scottish Health and Ethnicity Linkage Study of 4.65 million people exploring ethnic variations in disease in Scotland. *Int J Epidemiol.* 40(5):1168–75.

Usher Institute (2018). Scottish Health and Ethnicity Linkage Study. Edinburgh: Usher Institute, University of Edinburgh (<https://www.ed.ac.uk/usher/scottish-health-ethnicity-linkage>, accessed 6 December 2018).

WHO package of essential noncommunicable disease interventions

World Health Organization (2017). Tools for implementing WHO PEN (Package of essential noncommunicable disease interventions) [website]. Geneva: World Health Organization (http://www.who.int/ncds/management/pen_tools/en/, accessed 6 December 2018).

WHO Regional Office for the Eastern Mediterranean (2017). Noncommunicable diseases kit. Cairo: WHO Regional Office for the Eastern Mediterranean (<https://www.who.int/emergencies/kits/ncd-information-note.pdf?ua=1>, accessed 6 December 2018).

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ISBN 9789289053990



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