Noncommunicable diseases

Premature death from or living long term with a noncommunicable disease (NCD) and its related disability has put an increasing strain on health systems, economic development and the well-being of large parts of the population. Consequently, NCDs are one of the major challenges for sustainable development in the 21st century (1). NCDs are the leading cause of death globally (2). Although there has been a clear decline in premature NCD deaths since the mid 2000s in the WHO European Region (3), the situation is still alarming in that it is the WHO region with the highest burden of NCDs (2). Action is necessary across all sectors and settings to mitigate, prevent and control NCDs.

Overview

The four major NCDs are cardiovascular diseases, diabetes mellitus, cancers and chronic respiratory disease. They are associated with a cluster of common risk factors, such as tobacco and alcohol use, unhealthy diets, physical inactivity, hypertension, obesity and environmental factors. It has been estimated that at least 80% of all heart disease, stroke and diabetes and 40% of cancer could be prevented by tackling these major risk factors (4).

Within the European Region for practically all countries where robust data are available, there is a clear decline in premature NCD deaths since the mid 2000s. The Sustainable Development Goal (SDG) target is well on the way of being achieved and even exceeded (3).
Reduce by one third premature mortality from NCDs: the probability of premature deaths linked to NCDs in the European Region has been declining since the late 1990s.

- Mortality from the four major NCDs in those aged 30–69 years was 16.9% in 2014 (11.8% for females and 22.4% for males) compared with a peak of 24.2% in 1994 (17.0% for females and 31.9% for males). During that 20-year period, the fastest decline occurred after 2005, when the annual reduction reached 2.4% (2).

- Between 2010 and 2014, premature mortality from major NCDs declined by 6.3% in the European Region (Fig. 1) (5). If linear trends continue, the European Region will exceed the target of reducing premature mortality by one third by 2030. It is proposed that the Region should aim to reduce premature mortality from NCDs by 45% or more between 2010 and 2030 as part of an accelerated effort to harness the momentum (6).

Strengthen the prevention and treatment of substance abuse and tobacco control: overall, progress with NCD targets in the European Region is uneven. Although premature mortality is declining, many underlying targets related to the risk factors are not progressing well.

- Assessment of progress with the NCD targets showed that, although alcohol and tobacco consumption is reducing, the decline is not fast enough meet the agreed goals (3). It is estimated that not a single country will reach the target to halt the rise in overweight and obesity if current trends prevail (3). To achieve the NCD targets, countries are urged to increase implementation of cost-effective actions and other recommended interventions identified by WHO, based on their national context (Table 1) (5, 7).

- Premature mortality would be largely avoided with a focus on cardiovascular diseases in countries with a high burden by giving priority to a set of more clinical interventions that have been largely undervalued to date, for example reduction in salt consumption, effective control of blood pressure in primary care and effective management of myocardial infarction and stroke (6).

Reduce deaths and illnesses from environmental exposures: environmental exposures, such as air pollution, chemicals and climate change, have been associated with a number of NCDs (8).

- In 2012, estimations showed that, if ambient air pollution was reduced to the lowest levels possible in the European Region, 2–4% of disability-adjusted life-years from chronic obstructive pulmonary diseases,15–23% from lung cancer, 11–13% from ischemic heart disease and 10–13% from strokes could be reduced (9). Air pollution has been highlighted as an important area for action in the action plan for the prevention and control of noncommunicable diseases in the WHO European Region (4).

- The European Region is the WHO region with the second highest disease burden preventable through sound management of chemicals. Cardiovascular diseases and cancer linked to chemical toxic effects and air pollution account for 95% of the disease burden from chemicals exposure in the environment (10).

Universal health coverage and access to medicines: the availability and affordability of essential medicines is also central to the implementation of the Global action plan for the prevention and control of NCDs 2013–2020, which set the target of ensuring "an 80% availability of the affordable ... essential medicines ... required to treat major noncommunicable diseases" (11). However, for the most vulnerable segments of the population, life-saving essential medicines may be impossible to afford.

- In several economies in transition in the WHO European Region, a one-month course of simple hypertension treatment can cost up to 35 days of wages, most of which is paid out of pocket (12,13).
Reduced income and early retirement caused by NCDs can lead individuals and households into poverty. At the societal level, in addition to surging health care costs there are increased demands for social care and welfare support, as well as the burden of absenteeism from school or work, decreased productivity and increased employee turnover (14). Preventing NCDs makes economic sense.

• The economic consequences of NCDs are significant. Under a “business as usual” scenario, economic losses in countries of low or middle incomes from the four main NCDs are estimated to surpass US$ 7 trillion between 2011 and 2025, equivalent to approximately 4% of their annual output in 2010 (15).

• Loss of productivity linked to NCDs is also significant. It has been estimated that there is a reduction in economic growth of 0.5% for every 10% increase in NCD mortality (16). Losses are cumulative, affect different sectors (including health) and are expressed in terms of direct costs (e.g. of diagnosis and treatment, absenteeism and loss of productivity) and also indirect costs, as others may have to replace sick people to cover for some of their activities, adding burden of work or other unmet needs.

Addressing NCDs and their risk factors supports the educational development of children.

• NCDs create a number of different problems for children, in turn affecting their educational attainment (17).
  o Overweight and obese children are more likely to suffer from depression, low self-esteem and other behavioural and emotional difficulties, as well as stigmatization and social isolation.
  o Tobacco and alcohol use, having an unhealthy diet and being physical inactive prevents children and adolescents from making the most of their education.
  o The long-term impact will be children missing school more often, with resources being directed from education into the health care and psychosocial support of children with NCDs.

• Strong evidence of the effectiveness of health education and health promotion in schools supports the promotion of mental health, healthy eating, sports and physical activity in health-promoting schools (18).

Gender disparities in NCDs vary substantially across the European Region.

• Male excess premature mortality ranges from 11% to 151% across the European Region (19). Although there are some exceptions, relative differences between genders tend to be smallest among Scandinavian and northern European countries and highest among the Commonwealth of Independent States, the Baltic countries and some Mediterranean countries.

• In the countries of the Commonwealth of Independent States, where mortality from cardiovascular disease is the highest in the European Region, targeting men with preventive anti-tobacco and anti-alcohol strategies and improving access and sustainability of health care services will be essential to reduce the level of inequalities among men and women (6).

• While European women live, on average, eight years longer than European men, they spend a greater share of life in poor health, largely because of NCDs (20). It is necessary to adjust interventions to local situations and focus on vulnerable groups (21).

Levels and progress on premature mortality have been uneven between subregions in the WHO European Region. Large inequalities in premature NCD mortality persist among countries, with almost a six-fold difference in the probability of dying prematurely from NCDs between the highest (30.1% in Turkmenistan in 2013) and lowest (5.2% for San Marino in 2015) levels, and a decreasing gradient in probability from east to west in the region (5).
Living in environments in which there are barriers to accessing healthy foods and fewer opportunities to engage in physical activity is contributing to the Region’s high burden of NCDs.

- In the European Region, 5% of the burden of disease from coronary heart disease, 7% from type 2 diabetes, 9% from breast cancer and 10% from colon cancer are estimated to be a consequence of physical inactivity, resulting in 1 million deaths (about 10% of all deaths) and 8.3 million disability-adjusted life-years lost per year (22).

- Actions such as decreasing fossil fuel emissions, reducing emissions of short-lived climate pollutants (e.g. black carbon and methane) and reducing dietary saturated fat consumption from animal products will support the promotion of active mobility, improve nutrition and reduce the burden of cardiovascular diseases, while at the same time mitigating climate change (23,24).

“Win–win” cross-cutting opportunities arise from the promotion of sustainable cities and communities from municipal to global levels, such as investment in active transport systems, sustainable food and agriculture practices, reduced industrial emissions and energy-efficient buildings, with the consequent climate change mitigation.

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Fig. 1. Unconditional probability of dying between ages 30 and 69 years from four major NCDs in the WHO European Region and selected subregions, trends since 1990 and projections until 2030 based on linear trend since year 2000

Source: The WHO Global Monitoring Framework on noncommunicable diseases (5).
Commitment to act

In September 2011, heads of state and government, assembled at the United Nations, committed to address the global burden and threat of NCDs with the adoption of a wide-ranging political declaration on the prevention and control of NCDs at the opening of the General Assembly’s first United Nations High-level Meeting on NCDs (1).

In July 2014, during the second United Nations High-level Meeting on NCDs, ministers and representatives of states and government and heads of delegations committed to the following four immediate domestic actions (also called the time-bound commitments): setting national NCD targets, developing multisectoral policies and plans, accelerating the reduction of risk factors, and strengthening health systems (25). This built on guidance set out in the WHO Global action plan for the prevention and control of NCDs 2013–2020 (11) endorsed during the Sixty-sixth WHO World Health Assembly in 2013.

At the level of the WHO European Region, this was followed by the adoption of the Action plan for the prevention and control of noncommunicable diseases in the WHO European Region 2016–2025 during the 66th session of the WHO Regional Committee for Europe in 2016 (4). The Regional action plan has set out the aspirational vision of a health-promoting Europe free of preventable NCDs, premature death and avoidable disability, and builds on the relevant strategies and action plans for the underlying determinants. The goal of the European action plan is to avoid premature death and significantly reduce the disease burden from NCDs by taking integrated action, improving the quality of life and making healthy life expectancy more equitable within and between Member States (Box 1).

Box 1. Leaving no one behind...

Vulnerable and socially disadvantaged groups at higher risk of NCDs: there is strong evidence of the links between certain social determinants and premature mortality from NCDs. Vulnerable and socially disadvantaged people get sicker and die sooner from NCDs than people of higher social positions, particularly because they are at greater risk of being exposed to harmful products, such as tobacco, or unhealthy dietary practices and have limited access to health services (16).

Strong health systems play a critical role in responding effectively and equitably to the health care needs of people with NCDs.

The NCD global monitoring framework, adopted by the World Health Assembly in May 2013, set nine targets, of which the first was “a 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases over the period 2010–2025” (Table 1) (26). In the WHO European Region, the targets for the Health 2020 European health policy framework adopted in 2013 by the Regional Committee set the goal of “a 1.5% relative annual reduction in overall (4 causes combined) premature mortality from cardiovascular disease, cancer, diabetes and chronic respiratory disease until 2020” (27). All these mentioned efforts were finally combined within the United Nations 2030 Agenda in target 3.4 of SDG 3.

To achieve these goals requires a comprehensive approach that systematically integrates policy and action to reduce inequalities in health and tackles NCDs simultaneously (Box 2): supporting population-level health promotion and disease-prevention programmes, actively targeting groups and individuals at high risk, and maximizing population coverage with effective treatment and care.
Box 2. Intersectoral action

**Actions at the population level:** while the risk factors for NCDs imply personal behaviours, national public policies in sectors such as trade, taxation, education, agriculture, urban development and food and pharmaceutical production have a major bearing on risk factors for NCDs at the population level. The broader social, economic and environmental determinants of health associated with globalization and urbanization, alongside population ageing, are the underlying drivers of the behavioural risk factors (28).

The Political Declaration that came out of the 2011 United Nations high-level meeting on NCD prevention and control highlighted the need for a whole-of-government and a whole-of-society response (1). Heads of state and government acknowledged the need for a multisectoral approach for health at all government levels to address NCD risk factors and the underlying determinants of health comprehensively and decisively. This commitment was reaffirmed in the Outcome document of the 2014 United Nations high level meeting (25). In the European Region, the European policy framework Health 2020 aims to support action across government and society (29).
Monitoring progress

The nine targets of the NCD global monitoring framework include 25 indicators that will be monitored regularly to assess progress. Indicators represent different categories of the NCD processes, including health impacts (e.g. premature mortality and incidence), the risk factors (prevalence and occurrence patterns) and health system response (inputs and outputs). The diversity and needs of information make monitoring a complex process, as although there are some well-established data sources to meet information requirements other newer population or facility survey-based data and other sources are needed to answer needs.¹

The WHO Regional Office for Europe is developing a joint monitoring framework for the Health 2020, the Sustainable Development Goals and NCD indicators² to facilitate reporting in Member States and to enable a consistent and timely way to measure progress. NCDs compromise all Health 2020 targets (27). The following, as proposed in the global indicators framework of the United Nations Economic and Social Council (ECOSOC) (30), will support monitoring progress in NCDs.

ECOSOC indicators

3.4.1. Mortality rate attributed to cardiovascular diseases, cancer, diabetes or chronic respiratory disease
3.5.2. Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol
3.8.1. Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health; infectious diseases; NCDs; and service capacity and access, among the general and the most disadvantaged population)
3.a.1. Age-standardized prevalence of current tobacco use among persons aged 15 years and older
3.b.1. Proportion of the population with access to affordable medicines and vaccines on a sustainable basis

Health 2020 core indicators (indicator-level alignment)

1.1.a. Age-standardized overall premature mortality rate (from 30 to under 70 years) for four major NCDs (cardiovascular diseases (ICD-10 codes I00–I99), cancer (ICD-10 codes C00–C97), diabetes mellitus (ICD-10 codes E10–E14) and chronic respiratory diseases (ICD-10 codes J40–47)) disaggregated by sex; diseases of the digestive system (ICD-10 codes K00–K93) also suggested but to be reported separately (31)
1.1.b. Age-standardized prevalence of current (includes both daily and nondaily or occasional) tobacco use among people aged 18 years and over
1.1.c. Total (recorded and unrecorded) per capita alcohol consumption among people aged 15 years and over within a calendar year
1.1.d. Age-standardized prevalence of overweight and obesity in people aged 18 years and over (defined as a body mass index ≥25 kg/m² for overweight and ≥30 kg/m² for obesity, where possible disaggregated by age and sex), reporting measured and self-reported data separately

Health 2020 additional indicators

1.1.a. Standardized mortality rate from all causes, disaggregated by age and sex
1.1.b. Prevalence of weekly tobacco use among adolescents
1.1.c. Heavy episodic drinking (60 g of pure alcohol or around six standard alcoholic drinks on at least one occasion weekly) among adolescents
1.1.d. Prevalence of overweight and obesity among adolescents (defined as body mass index-for-age value above +1 Z-score and +2 Z-score, respectively, relative to the 2007 WHO growth reference median) (32)

¹ In this regards, surveys such as the WHO STEPS, the Country capacity and response on NCD (CCS), the Health behaviours of school-aged children (HBSC) and the Child obesity surveillance initiative (COSI), among others, are examples that have been used to address the gaps within routine information systems.
WHO support to its Member States

The WHO Regional Office for Europe develops norms and standards, technical guidance and public health tools to help countries to implement effective programmes and address risk factors. This work is structured around four main areas: policy, surveillance, prevention and management. These fit neatly into the four time-bound commitments of the high-level meeting of the United Nations General Assembly’s comprehensive review (25), as outlined above.

Recognizing that strong leadership and urgent action are required at the global, regional and national levels, the WHO European Office for the Prevention and Control of NCDs was launched in Moscow in 2014, funded by a voluntary contribution from the Ministry of Health of the Russian Federation. This NCD Office has catalysed the ability of the European countries to combat NCDs.

Partners

WHO collaborates with partners and relevant stakeholders on the prevention and control of NCDs through different platforms, networks and groups, including civil society and private sectors (14).

The WHO Global Coordination Mechanism on the Prevention and Control of NCDs (GCM/NCD) is a global Member State-led coordinating and engagement platform, established in 2014 by the World Health Assembly to help to counteract the growing global health threat of NCDs (33).

The GCM/NCD contributes to accelerating the implementation of the WHO Global action plan for the prevention and control of NCDs and the NCD-related SDG targets by fostering high-level NCD commitments through multisectoral and multistakeholder engagement at local, national, regional and global levels. The GCM/NCD connects and convenes a diverse group of more than 300 participants, comprising WHO Member States, United Nations organizations and non-state actors, around a shared goal to support countries to reduce premature mortality and unnecessary suffering from NCDs.

The United Nations Interagency Task Force on the prevention and control of NCDs, established by the United Nations Secretary-General in June 2013 and placed under WHO’s leadership, coordinates the activities of relevant United Nations organizations and other intergovernmental organizations to support governments to meet high-level commitments to respond to NCD epidemics worldwide (34).

Resources

- NCD website
  http://www.euro.who.int/en/health-topics/noncommunicable-diseases
- WHO European Office for the Prevention and Control of NCDs (in Moscow)
- WHO tools to prevent and control noncommunicable diseases
  http://www.who.int/nmh/ncd-tools/en/
- Global coordination mechanism on NCDs
  http://www.who.int/ncds/gcm/en/
- United Nations Interagency Task Force on the Prevention and Control of NCDs
  http://www.who.int/ncds/un-task-force/en/

Key definitions

- Premature NCD mortality. Probability of dying between the exact ages 30 and 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases (ICD-10 codes: I00–I99, C00–C97, E10–E14, and J30–J98). (31,35).

References


