

World Health Organization

European Region

Avoidable mortality, risk factors and policies for tackling noncommunicable diseases in the WHO European Region

Comprehensive report 2025



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Abstract

Noncommunicable diseases (NCDs), such as cardiovascular diseases, cancers, diabetes and chronic respiratory diseases, remain the leading cause of death and disability in the WHO European Region. Approximately 1.8 million deaths annually are avoidable, with 60% preventable through reduced exposure to risk factors and public health interventions, and 40% treatable with timely and high-quality health care. While premature mortality has decreased since 2010, some countries have slowed progress following the disruption caused by the coronavirus disease pandemic. Progress towards many global targets has been made, but more work is needed to meet agreed targets by 2030. Inequalities between sexes and countries have decreased for mortality and air pollution, but increased for tobacco use, obesity, raised blood pressure and diabetes. The report notes that, in order to tackle NCDs and address the commercial and digital factors and social and environmental determinants of health, there is a need for accelerated multisectoral whole-of-government and whole-of-society action, integrated policies, enhanced preventive measures and strengthened health systems.

Keywords

NONCOMMUNICABLE DISEASES; MORTALITY, PREMATURE; RISK FACTORS; TOBACCO USE; ALCOHOL DRINKING; OBESITY; HEALTH POLICY

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Foreword

Noncommunicable diseases (NCDs) remain the leading cause of death and disability in the WHO European Region. One in five men and one in 10 women in the Region die before the age of 70 as a result of cardiovascular diseases, cancer, diabetes or chronic respiratory diseases. Despite decades of advancement, recent years have seen unprecedented challenges, with progress towards reducing premature NCD mortality stalling or reversing for some countries. This report delivers a timely and much needed data-driven assessment of current trends in NCD mortality and risk factors, highlighting setbacks and opportunities for renewed action.

The coronavirus disease pandemic exposed vulnerabilities in health systems and demonstrated the consequences of neglecting NCD prevention and management. Even though some countries are on track to meet the target of a 25% reduction in premature NCD mortality by 2025, disruptions to essential services and slowed policy implementation have left other countries in the European Region off track, putting the more ambitious 2030 Sustainable Development Goal at risk.

This report shows that, while some risk factors have declined, others, such as obesity and diabetes, are rising. Persistent inequalities across countries and population groups highlight the need for tailored, equitable approaches. The economic burden is immense, with avoidable deaths costing over US$ 0.5 trillion in annual productivity losses.

Yet, while the statistics are sobering, the report also offers hope. The overall pace of progress may be too slow to meet most targets, but some countries are nevertheless making notable progress, demonstrating that strong political will, comprehensive prevention policies and high-quality health systems can deliver life-saving results.

For the first time, we now report on avoidable mortality from NCDs, broken down into preventable and treatable mortality. Around 60% of NCD deaths can be linked to causes that are avoidable by implementing effective public health interventions or modifying risk factors such as tobacco and alcohol use, unhealthy diets, pollution and physical inactivity; the remaining 40%, meanwhile, are due to causes that can be avoided through effective treatment.

These deaths are not inevitable. With intensified prevention efforts, improved access to treatment and comprehensive coordinated efforts across governments, sectors and communities, we can turn setbacks into solutions. To measure the impact of our actions, we need timely, reliable data.

With the Second European Programme of Work, we have a pivotal opportunity to renew political commitment, set achievable targets and scale up implementation of actions, informed by the WHO best buys and quick buys as appropriate, that deliver measurable public health impact.

At the WHO Regional Office for Europe, we remain committed to supporting countries. We urge governments, communities, civil society and partners to seize this opportunity to advance health, build resilient societies, strengthen economies and deliver on the promise of longer, healthier lives.

Our message is clear. There are no more excuses. We have the knowledge and the tools. What remains is the will to implement them swiftly and hold ourselves accountable for delivering real results. This is not just a matter of public health; this is a matter of justice, security and competitiveness, and a shared future.

Dr Corinne Capuano
Officer-in-Charge for WHO Regional Office for Europe

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Abbreviations

APC	alcohol per capita consumption
AUD	alcohol use disorder
CIS	Commonwealth of Independent States
COSI	Childhood Obesity Surveillance Initiative
COVID-19	coronavirus disease
CPL	cost of productivity loss
CRD	chronic respiratory disease
CVD	cardiovascular disease
EAP	European Action Plan [Action Plan for the Prevention and Control of Noncommunicable Diseases in the WHO European Region 2016–2025]
EPW	European Programme of Work 2020–2025
EPW2	Second European Programme of Work 2026–2030
EU	European Union
GAP	Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020
GDP	gross domestic product
GMF	Global Monitoring Framework
HPV	human papillomavirus
ICD	International Classification of Diseases
NCD	noncommunicable disease
OECD	Organisation for Economic Co-operation and Development
PI	progress monitor indicator
$PM_{2.5}$	particulate matter with diameter under 2.5 µm
SDG	Sustainable Development Goal
SII	slope index of inequality
UHC	universal health coverage
YPLL	years of potential life lost

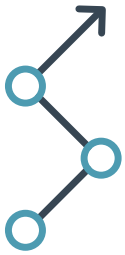
Glossary

Avoidable mortality	Deaths occurring before 75 years of age from causes that are either preventable or treatable. It can be further divided into preventable and treatable mortality.
Premature noncommunicable disease (NCD) mortality	Unconditional probability of dying between ages 30–69 years from four major NCDs: cardiovascular diseases, cancers, diabetes and chronic respiratory diseases [International Classification of Diseases, 10th revision (ICD-10) underlying causes of death I00–I99, COO–C97, E10–E14, J30–J98; or International Classification of Diseases, 11th revision (ICD-11) underlying causes of death 8B00–8B2Z, BA00–BE2Z, 2A00–2F9Z, 5A10–5A2Y, CA20–CA2Z, CA60–CA8Z, CA00–CA0Z, CB00–CB0Z, CB20–CB2Z, CB40, CB41, CB60–CB64, CB7Z].[1]
Preventable mortality	Deaths occurring before 75 years of age from causes that are avoidable through effective public health interventions, including immunizations, or linked to modifiable risk factors (such as tobacco, alcohol use, unhealthy diet, pollution and physical inactivity).
Treatable mortality	Deaths occurring before 75 years of age from causes that can be avoided through access to timely and effective health-care interventions.

1 International Statistical Classification of Diseases and Related Health Problems (ICD) [website]. World Health Organization; 2026 (https://www.who.int/standards/classifications/classification-of-diseases).

Key messages

Progress towards targets affected by the coronavirus disease (COVID-19) pandemic



Noncommunicable diseases (NCDs) continue to be the main driver of death and disability in the WHO European Region. Currently, every fifth man and every 10th woman are dying before the age of 70 as a result of cardiovascular diseases (CVDs), cancers, diabetes or chronic respiratory diseases. This report reveals for the first time that progress towards reducing premature mortality from NCDs was affected during the COVID-19 pandemic. While certain countries have advanced, others in the WHO European Region are no longer on track to achieve the regional target of a 25% reduction in premature mortality from NCDs between 2010 and 2025. The 2030 Sustainable Development Goal premature mortality target is more ambitious, and it is not likely that it will be met. The pandemic also disrupted policy implementation; while adoption of policies such as the WHO best buys increased steadily until 2019, progress has since stalled. Policy implementation still varies widely, and every country has room for improvement within its own context.

Avoidable mortality from NCDs: it is mostly preventable



Avoidable mortality refers to those deaths before 75 years of age from causes that are either preventable with effective public health services or treatable with appropriate health-care services. Of the 1.8 million avoidable deaths from NCDs in the WHO European Region, approximately 60% are due to preventable causes, meaning that they are linked to modifiable risk factors and low vaccination coverage, while the remaining 40% are due to treatable causes. In high-income countries, rates of treatable deaths are similar, but preventable deaths vary more, showing that prevention efforts are uneven and need strengthening.

Cost of avoidable mortality is high



Avoidable mortality from NCDs in the WHO European Region imposes a significant cost of productivity loss , totalling US$ 514.5 billion annually. Over 60% of this cost is caused by preventable mortality, with cancer mortality accounting for the largest share. Prevention remains underfunded despite offering high returns.

Risk factors are on the decline but not fast enough to meet most targets



While levels of most risk factors have been declining in the WHO European Region since 2010, in some countries they still remain high, compromising achievement of the targets. Notable exceptions to this are rising rates of obesity and diabetes, and insufficient physical activity, which has stagnated.

Mortality inequalities are declining, but risk factor gaps increasing



Since 2010 the inequalities between countries have decreased significantly for premature mortality, as well as for preventable and treatable mortality. Nevertheless, inequalities remain, largely driven by excess CVD and male mortality, as well as by differences within the WHO European Region. Rising inequalities between countries in tobacco use, high blood pressure, obesity and diabetes prevalence are also concerning.

Ambitious but achievable targets should be set, and data and monitoring strengthened



Reliable and timely data are key to measuring real progress and holding everyone accountable. As 2030 approaches and attention turns to 2050, it is useful to adapt NCD targets and strengthen the data systems that track progress. Potential adapted targets should be ambitious yet achievable, taking into account best-performing countries' results and reflecting the need for an upward convergence. Investment must be made in better data and data use to monitor and strengthen response to NCDs.

Comprehensive action on both prevention and treatment is required for success



Lessons from successful countries show that prevention and treatment must go hand in hand, reducing prevalence of risk factors through comprehensive policies and strengthening the health system response to NCDs, to reduce both CVD and cancer mortality. Ignoring either leads to avoidable deaths and missed health gains. Prevention interventions often lie beyond the health system, emphasizing the importance of whole-of-government and whole-of-society approaches.

Addressing NCDs is key to competitiveness and resilience



Effectively tackling NCDs will play a key role in improving competitiveness by increasing human capital and decreasing cost. One of the lessons from the COVID-19 pandemic is the importance of a dual-track approach, ensuring an effective emergency response while maintaining essential health services delivery. For this reason, it is essential to include NCDs and mental health in emergency preparedness, response and recovery plans, as has been done in the new Strategy and action plan on health emergency preparedness, response and resilience in the WHO European Region (Preparedness 2.0).

Act now: with bold action 2030 targets are still within reach



With rapid scaling of effective policies, the 2030 targets can still be reached. The Second European Programme of Work 2026–2030 provides a pivotal opportunity to strengthen the European response to NCDs. Strong political commitment from all stakeholders, innovation, and implementation, as appropriate to national contexts, of quick and other best buys, as well as their enforcement, are helpful to reduce NCDs, protect health and promote sustainable development to ensure that years lived longer are lived in good health.

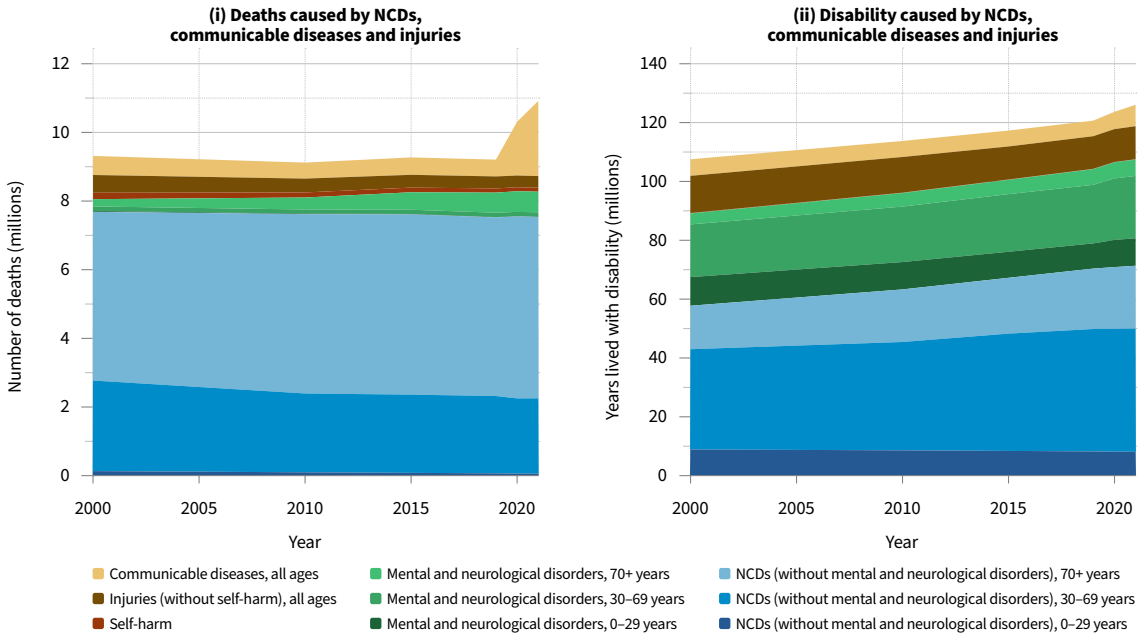
Chapter 1. Introduction and overview



Background

Noncommunicable diseases (NCDs), mental health conditions, substance use disorders and neurological conditions are the main causes of ill health in the WHO European Region (Fig. 1). In 2019, prior to the coronavirus disease (COVID-19) pandemic, mortality due to the four main NCDs – namely cardiovascular diseases (CVDs), cancers, chronic respiratory diseases (CRDs) and diabetes – accounted for 90% of deaths and 85% of years lived with disability in the WHO European Region. Even as deaths from COVID-19 peaked in 2021, NCDs still accounted for 74% of deaths and 85% of disability *(1)*. Annually, NCDs caused 2.5 million premature deaths (deaths occurring below 70 years of age), or 83% of all such deaths in the Region, prior to the COVID-19 pandemic. That is comparable to all reported COVID-19 deaths for all ages over the four-year period 2020–2024 *(2)*.

Fig. 1. Burden of disease in the WHO European Region, 2000–2021: (i) death and (ii) disability caused by NCDs, communicable diseases and injuries

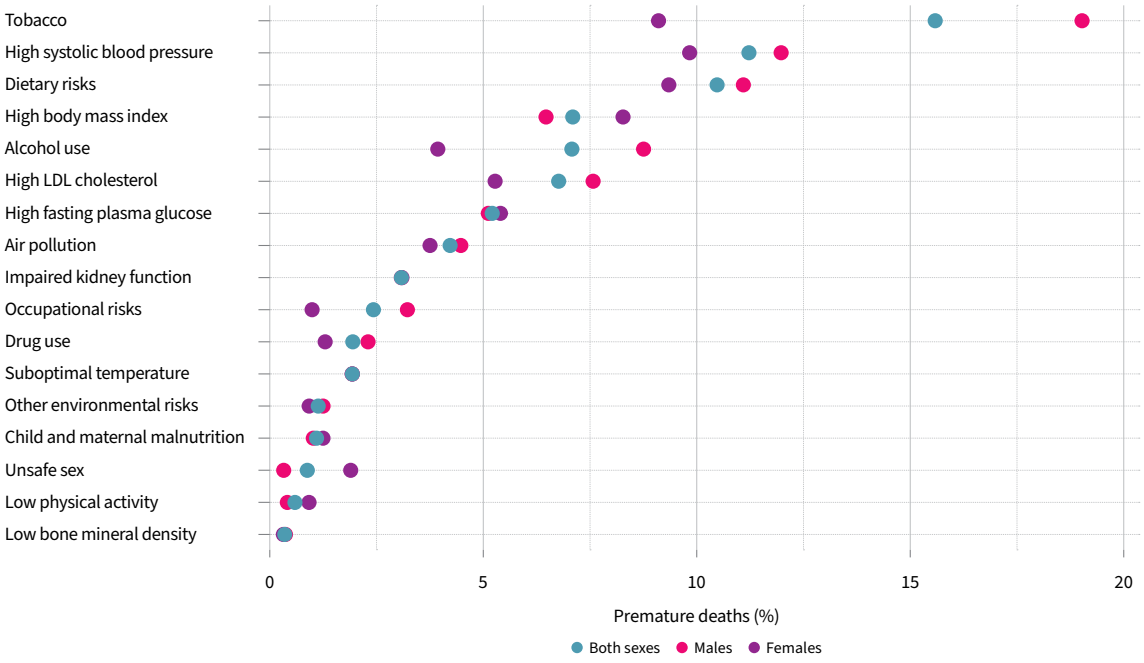


Two thirds of premature deaths from these conditions can be attributed to a handful of risk factors, including tobacco and alcohol use, unhealthy diets, insufficient physical activity, overweight and obesity, and raised blood pressure, lipids and glucose, as well as air pollution (Fig. 2) *(3)*, with high tobacco, high systolic blood pressure and dietary risks being the top three leading causes. The higher share of premature deaths in males than in females can be attributed to higher levels of risk factors in the former, with particularly striking differences due to tobacco and alcohol use.

Barring the impact of future epidemics, it is reasonable to expect that the burden of NCDs will resume its upward trend post COVID-19, driven by an ageing population, the widespread promotion and adoption of

unhealthy behaviours (and their associated effects on metabolic factors), the harm caused by increasingly unequal environmental and socioeconomic conditions, and the ongoing effects of climate change.

Fig. 2. Attribution to risk factors of premature deaths due to NCDs, 2021



Note: LDL = low-density lipoprotein.

In addition to the health effects of NCDs on morbidity, disability and mortality, NCDs incur enormous social and economic losses *(4)*. It is estimated that NCDs will incur costs of US$ 37 trillion globally between 2011 and 2030 *(5)*. This is particularly germane for countries in the WHO European Region, whose NCD burdens are among the highest in the world *(1)*. It is thus incumbent on countries to take action to reduce NCD morbidity and mortality urgently. At the same time, NCDs account for only 2.1% of international developmental assistance for health, with a decrease of 34% between 2020 and 2023 *(5)*.

Several policy frameworks and action plans to reduce the causes and consequences of NCDs have been agreed by Member States to address this growing burden. These include the WHO Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020 (GAP) *(5)* and the WHO Action Plan for the Prevention and Control of Noncommunicable Diseases in the WHO European Region 2016–2025, also known as the European Action Plan (EAP) *(4)*. At four United Nations high-level meetings, in 2011, 2014, 2018 and 2025 *(6–8)*, the Heads of State and Governments endorsed these plans and committed to step up whole-of-government action on prevention and control of NCDs. NCDs and mental health were also included as key elements in the Sustainable Development Goals (SDGs) *(9)*, as well as in the European Programme of Work, 2020–2025 – "United Action for Better Health" (EPW) *(10)*, which stipulated a stepping-up of leadership and actions to address NCDs and their inequalities as part of universal health coverage (UHC).

The following report aims to describe the current situation, to identify the trends and trajectories of NCD indicators against the targets, and to provide an assessment of where the WHO European Region stands as of 2025.

Tracking and reporting on progress

Through a series of agreements, countries have agreed on several sets of indicators to track progress. These include indicators from the NCD Global Monitoring Framework (GMF) *(11)* and the SDGs *(9)*, which are used to measure outcomes, complemented by progress monitor indicators (PIs) *(12–16);* these latter track the adoption of recommended policies, including the WHO best buys *(17,18)*.

Outcome indicators, defined in the SDG and GMF frameworks, are indicators of premature NCD mortality calculated using official cause-of-death and population data reported to WHO by Member States. They include the prevalence of key NCD-related behavioural and biological risk factors, suicide mortality and air pollution. Additional indicators include preventable and treatable mortality from NCDs and cancers.

PIs include 22 indicators of adoption of recommended NCD policies and capacities in key areas of surveillance and governance, demand reduction measures for tobacco control, use of alcohol, unhealthy diets, and improvement of physical activity awareness, NCD management in health systems and cancer prevention.

In addition, Member States of the WHO European Region have adopted a framework to monitor implementation of the EPW to guide collective efforts to reduce the burden of NCDs and mental health conditions by 2025, in alignment with GMF, SDG and PI targets and indicators *(19)*.

This study provides a comprehensive analysis of progress toward these targets, the trends and status of NCDs, their risk factors and policies in the WHO European Region since 2010 *(20–22)*.

Country groups

Regional averages of mortality and risk factor indicators tend to mask the heterogeneity that exists across the 53 Member States of the WHO European Region. Therefore, to facilitate comparisons, the methodology of this study has grouped countries following the WHO European Health for All database system *(23)*.

- Countries that were part of the EU prior to 2004 (EU14): Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, fItaly, Luxembourg, Netherlands (Kingdom of the), Portugal, Spain and Sweden.
- Countries that became members of the EU after 2004 (EU13): Bulgaria, Croatia, Cyprus, Czechia, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia.
- Members and associate members of the Commonwealth of Independent States (CIS): Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Republic of Moldova (suspended participation), Russian Federation, Tajikistan, Turkmenistan (associate member) and Uzbekistan.

Following the methodological approach used in the Health for All database system, population-weighted averages were calculated for the WHO European Region and country groups if data for any given year were available for at least half the countries.

There is wide diversity of the health landscape in the Region depending on the specific issues under discussion, and countries could have been grouped in different ways. Therefore the reader is advised that the grouping is done exclusively for general illustrative purposes and that no immediate conclusions as to the situation or policy of specific counties in the group should be drawn. For such conclusions, the reader is advised to look at the individual context of each country as described in the annexes.

New insights

In addition to providing updated analysis of new data for all considered outcome and process indicators, this analysis presents the following new insights:

- expanded reporting on the 5-by-5 approach,[1] including indicators for mental health and air pollution;
- avoidable mortality from NCDs, disaggregated into preventable and treatable components;
- economic impact of preventable and treatable mortality and of achieving SDG target 3.4.1;
- systematic evaluation of trends in inequalities between countries; and
- quantification of changes during the COVID-19 pandemic for premature and avoidable mortality from NCDs and risk factors and for PIs.

Key concepts addressed in the report include premature mortality, preventable and treatable mortality, NCD risk factors and policy responses. Special focus is given to their interconnections, the persistent inequalities between countries and sexes, and the broader implications for the so-called permacrisis – the current period of extended instability and insecurity. Six annexes present the following: supplementary country-specific data (Annex 1); detailed information on the methodology used (Annex 2); the latest available data on selected NCD indicators (Annex 3); data on cost of productivity loss (Annex 4); analyses of between-country inequalities (Annex 5); and the impact of the COVID-19 pandemic on these inequalities (Annex 6).

1 The 5-by-5 approach focuses on five key disease groups (CVDs, cancers, CRDs, diabetes and mental disorders) and five major risk factors (tobacco use, alcohol use, unhealthy diet, physical inactivity and air pollution).

Chapter 2. NCD outcomes and trends since 2010



Premature mortality declining, but inequalities remain

Mortality from all NCDs in the WHO European Region represents an important health burden, accounting for 90% of all deaths pre-pandemic. Although premature mortality from the four major NCDs has been declining for decades, progress has slowed since 2014. CVDs, cancer, diabetes and CRDs are killing one in five men and one in 10 women between 30 and 69 years of age in the Region. NCDs are causing more than half of all deaths and more than three times the number of deaths caused by COVID-19 among this demographic. In 2021 NCDs are estimated to have caused more premature deaths than COVID-19 for all ages. Further, premature NCD deaths occurring in one year surpassed the total number of all reported COVID-19 deaths for all ages up until the end of 2024 *(2)*. Reducing premature and avoidable mortality is a key objective for improving health in the Region.

Among its nine targets, GAP included an overarching target of a 25% relative reduction in premature mortality from the four main NCDs between 2010 and 2025, corresponding to an average annual rate of reduction of 1.90% *(5)*. The GAP target is fully aligned with the EPW target, while the EAP aims for a one-third reduction between 2010 and 2030, which corresponds to an average annual rate of change of 1.98%. This figure is consistent with the bold initial global goal of a 2% annual reduction adopted by Member States in 2007 and reiterated in the GMF *(24)*. SDG target 3.4.1 is more ambitious and calls for a one-third reduction in premature mortality between 2015 and 2030 *(9)*, or an average annual rate of change of 2.63% – nearly 40% higher than the annualized GMF target of 1.90%.

The agreed indicator for monitoring premature mortality is the unconditional probability of dying from one of the four major NCDs between the ages 30 and 69, representing the probability that a 30-year-old will die before their 70th birthday from CVDs, cancers, CRD or diabetes, if the currently observed age-specific mortality rates were to continue *(11)*.

Progress hampered by the COVID-19 pandemic

Prior to the COVID-19 pandemic, premature mortality from NCDs, both preventable and treatable deaths, were declining. In 2010 the probability of dying prematurely from the four major NCDs in the WHO European Region was 18.0%; however, it was twice as high for males (23.9%) as for females (12.6%) (Fig. 3). Nearly every fourth man and every eighth woman were dying from major NCDs before their 70th birthday. By 2021 the probability of premature death from the four major NCDs had fallen to 15.0%, but the risk was still roughly double for males (19.9%) what it was for females (10.4%).

There was a great period of decline in premature mortality between 2010 and 2013, which was hampered during the COVID-19 pandemic in 2020 and 2021. While the annual rate of reduction was 2.01% between 2010 and 2019, it was only 0.16% during the COVID-19 pandemic in the period 2019–2021 (Fig. 4). Consequently, the latest observed values in 2021 show that some of the countries in the WHO European Region are off track to reach the premature mortality target, with an absolute difference of 0.2 percentage points to the target line for both sexes. As an average, the Region was behind the EAP and EPW target lines by a time lag of 0.7 years. The COVID-19 pandemic has slowed down the WHO European Region's progress in achieving EPW, EAP and GAP targets.

Fig. 3. Unconditional probability of dying between ages 30–69 from four main NCDs in the WHO European Region (1990–2021), including premature mortality targets (2010–2030), by sex

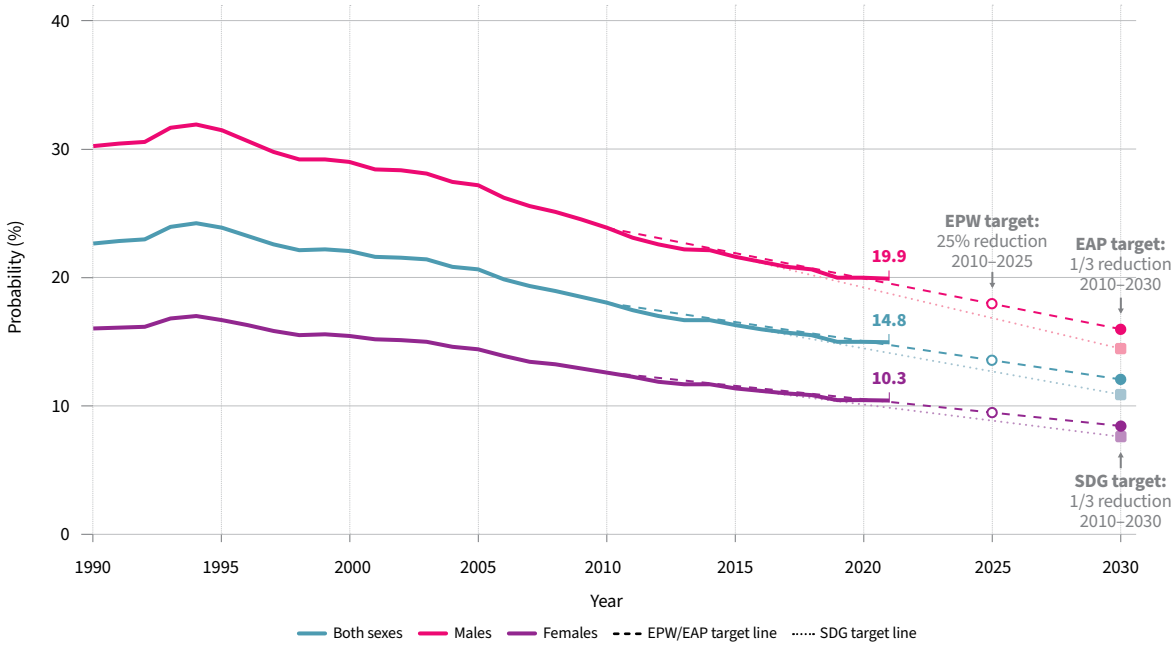
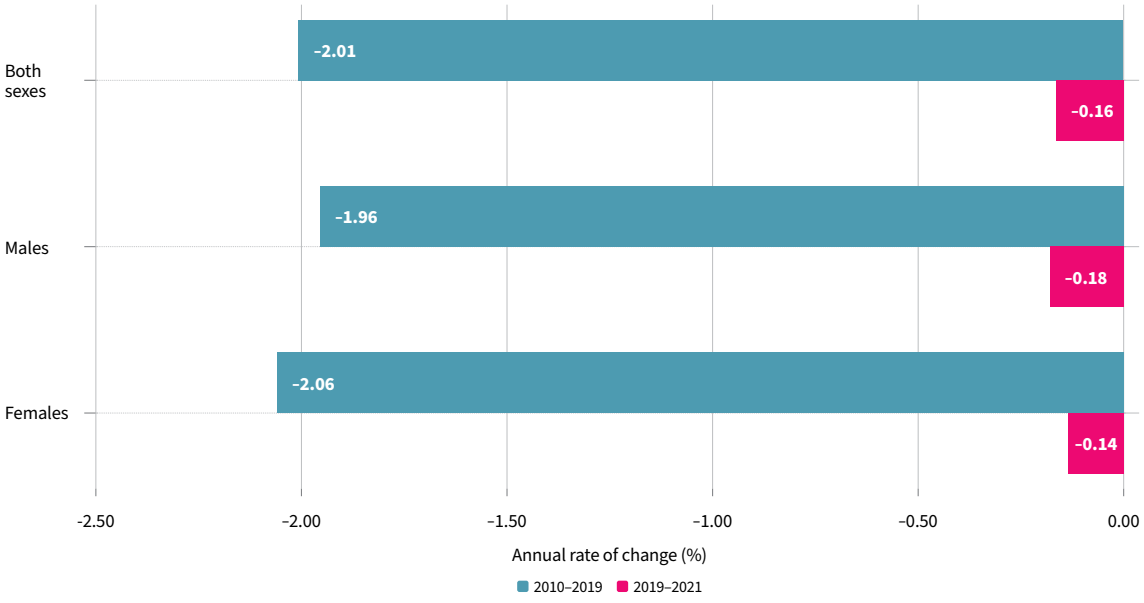


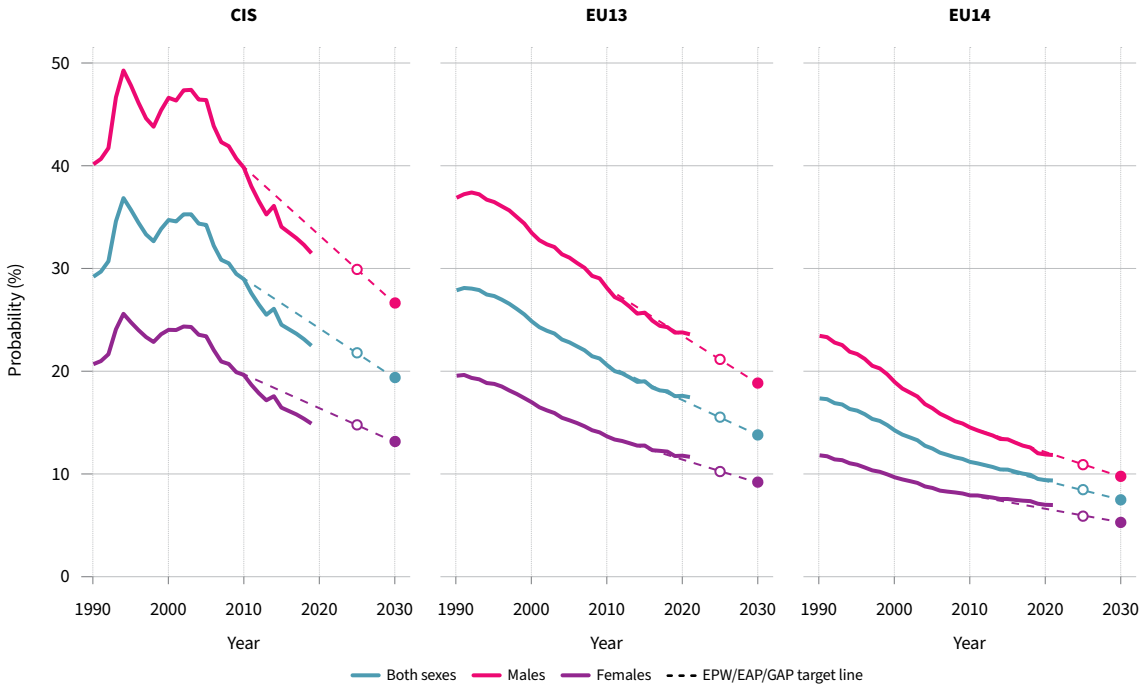
Fig. 4. Annual rate of change in premature mortality from four major NCDs in the WHO European Region, 2010–2019 and 2019–2021



Regional inequalities persist

A deeper look into premature mortality data by country grouping reveals notable differences, indicating substantial geographical inequality. In 2010 the overall probability of dying prematurely from NCDs was highest in the CIS at 29.0% – 39.8% for males and 19.6% for females; a twofold differential between the sexes (Fig. 5). The corresponding figures in the EU13 were nearly one third lower than those in the CIS, at 20.6% (both sexes), 28.1% (males) and 13.6% (females); a similar twofold sex differential. In the EU14 the values were nearly 45% lower than in the EU13, with premature mortality probabilities of 11.2% (both sexes), 14.5% (males) and 7.9% (females) – an 80% higher mortality risk for males than for females.

Fig. 5. Unconditional probability of dying between ages 30–69 from four main NCDs in the CIS, EU13 and EU14 (1990–2021 or last available year), including premature mortality targets (2010–2030), by sex



Premature mortality declined more rapidly between 2010 and 2013, before slowing, especially in the EU13 and EU14 country groups. The latest observed premature mortality values for both sexes were 22.5% in the CIS, 17.5% in the EU13 and 9.4% in the EU14. Compared to the target line, the CIS was on track, with a 9.5% relative gain (or 4.8-year advantage), but the EU14 and EU13 were both off track, with a 2.3% relative loss (1.2-year delay) and a 3.5% relative loss (1.8-year delay), respectively. In the CIS, progress was somewhat greater among females (12.0% gain or 6-year advantage) than among males (7.5% gain or 3.8-year advantage). However, the opposite occurred in the EU13, where males had a 2.6% relative loss (1.3-year lag) compared to a 4.2% loss (2.1-year lag) for females. In the EU14, males showed a marginal 0.4% advantage but still retained a slight 0.2-year cumulative lag, while females faced a more pronounced 7.2% loss (3.6-year lag).

The impact of the COVID-19 pandemic on premature mortality was most noticeable in the EU13. However, as less than half of CIS countries submitted to WHO cause-of-death data for the years 2020 and later, only the average for CIS countries up to 2019 could be calculated, and thus the impact of the pandemic cannot be assessed comparatively across country groups.

Country-specific data

More than 96% (51/53) of Member States in the WHO European Region have reported cause-of-death data to WHO since 2010. In 2010 the probability of prematurely dying from an NCD ranged, for both sexes, from a low of 6.7% to a high of 30.4%; the values for males ranged from 10.2% to 43.1%, and for females from 3.4% to 23.8% (Fig. A1.1).

Based on the latest available data, 28 countries (55% of countries with data since 2010) were on track to reach the premature mortality target. For these countries, the advantage between the latest observed value to the target line ranged from 0.1% to 26.8%. Eleven countries had made relatively small gains of two years or less of the necessary average yearly reduction; a further eight countries had made gains of 2–5 years; and nine countries had made gains of more than five years.

Among countries with high-quality cause-of-death data,[2] 10 achieved the EPW and initial GPW targets of a 25% reduction in premature mortality from the four major NCDs before the 2025 deadline for both sexes combined, while seven did so for both males and females individually.

Of the 23 countries that were off track for the premature mortality target for both sexes, nine countries had a delay of two years or less and could still reach the target if they urgently increased investment in NCD prevention and control. Nine had a delay of 2–5 years to achieve the target, and another six had a delay of more than five years. The results were similar when considering sex-specific data, with slightly more countries on track to achieve the premature mortality target for males (29) than for females (24).

Since 2010 inequalities in premature mortality from four major NCDs between countries in the WHO European Region have decreased, with the slope index of inequality (SII) for both sexes dropping from 24.4 to 20.8 (Annex 5).[3] Statistically significant decreases in SII were observed in both men and women, from 34.24 to 30.18 for men and from 17.10 to 13.45 for women. The SII value for men remained more than twice as high as that for women.

During the COVID-19 pandemic, notably in 2020 and 2021, premature mortality from the four major NCDs increased in some countries – mostly in the central and eastern parts of the WHO European Region, especially among males. It is difficult to assess if, and to what extent, these excess deaths include misclassified COVID-19 deaths. On a positive note, in all countries that observed increases in 2020 and 2021, the values for 2022 seem to be realigned with pre-pandemic levels (Fig. A1.2). From 2019 to 2021, between-country inequalities in premature mortality from the four major NCDs increased significantly, with SII for both sexes rising from 17.00 to 19.13 (Annex 5).

2 Countries that have fully achieved PI 2 ("Availability of a functional system for generating reliable cause-specific mortality data on a routine basis") were considered to have high-quality cause-of-death data (see Annex 2, Table A2.1).

3 The SII measures the absolute gap in an indicator between the most and least advantaged groups in a population. It quantifies how much the indicator varies across socioeconomic ranks, with higher values indicating greater inequality. For a technical explanation, see Annex 2.

SDG target 3.4.1 is more ambitious and calls for a one-third reduction in premature mortality between 2015 and 2030 *(9)*, or an average annual rate of change of 2.63% – nearly 40% higher than the annualized GMF target of 1.98%. The WHO European Region is off track to achieve this target by 2.1 years. While the lag to the target line was only 0.2 years in CIS countries, the lag in the EU was more than two years. Forty-nine countries reported mortality data from 2015; of these, 22 countries were on track to reach the target for both sexes. However, it should be noted that the monitoring period was very short and, accordingly, most countries had only 4–5 years of data.

Premature mortality from each of the four main NCDs individually

Key messages

- CVDs and cancers are major causes of premature death in the WHO European Region, with CVDs leading mostly in areas towards the east and cancers leading primarily in areas towards the west.
- Between-country inequalities in both CVD and cancer mortality have decreased since 2010.
- Several countries reported increases in premature mortality from CVDs during the COVID-19 pandemic and between-country inequalities increased.
- Countries reporting 2022 data report levels similar to 2019.

The same indicator used for premature mortality for the four major NCDs – the unconditional probability of dying between ages 30–69 – was also used for each of the four NCDs separately. In 2010 CVDs killed every 10th person (10%) and cancers every 12th person (8%) in the WHO European Region before they were 70 years old (Fig. 6). The probability of premature death from CRDs was significantly lower (0.6%), as was that from diabetes (0.5%). By 2021 the probability of dying between ages 30–69 from CVDs had decreased to 7.8% (a 21.8% relative reduction from 2010, or 2.3% annually), while for cancers it was 6.8% (a 15.6% relative reduction, or 1.5% annually). For CRDs, the probability was 0.6% in 2021 (a relative decrease of 6.4% from 2010, or 0.6% annually), while for diabetes it increased to 0.6% (a relative increase of 20.4% from 2010, or 1.7% annually). The long-term trend for CVDs is mixed, initially showing a sustained decline from the mid-1990s, then slowing in the early 2000s. It further accelerated from 2005 onwards, but then slowed again from 2014, followed by an increase in 2020 and 2021 during the COVID-19 pandemic. Cancers showed a much slower but steady decline from the mid-1990s and appeared to follow a similar trend during the pandemic years. Diabetes has increased since 2010, while gains in CRDs have reversed since 2013 and resumed a slow increase, followed by a slight decrease in 2020 and 2021.

A deeper look at the disaggregated data revealed an uneven distribution of causes of death across the country groups, with differences in levels, trends and patterns (Fig. 7). In 2010, for example, the probability of dying from CVDs was highest in the CIS at 21.1% – twice as high as in the EU13 (10.8%) and six times higher than in the EU14 (3.5%). The probability of dying from cancers also showed a different pattern, being higher in the EU13 (10.0%) than in the CIS (8.8%) and the EU14 (7.3%). Premature mortality from CRD and diabetes, although less prominent, was also highest in the CIS at 0.8% and 0.6%, respectively, compared to 0.6% and 0.5% in the EU13 and 0.4% and 0.3% in the EU14.

Fig. 6. Unconditional probability of dying between ages 30–69 from CVDs, cancers, CRDs and diabetes in the WHO European Region (1990–2021)

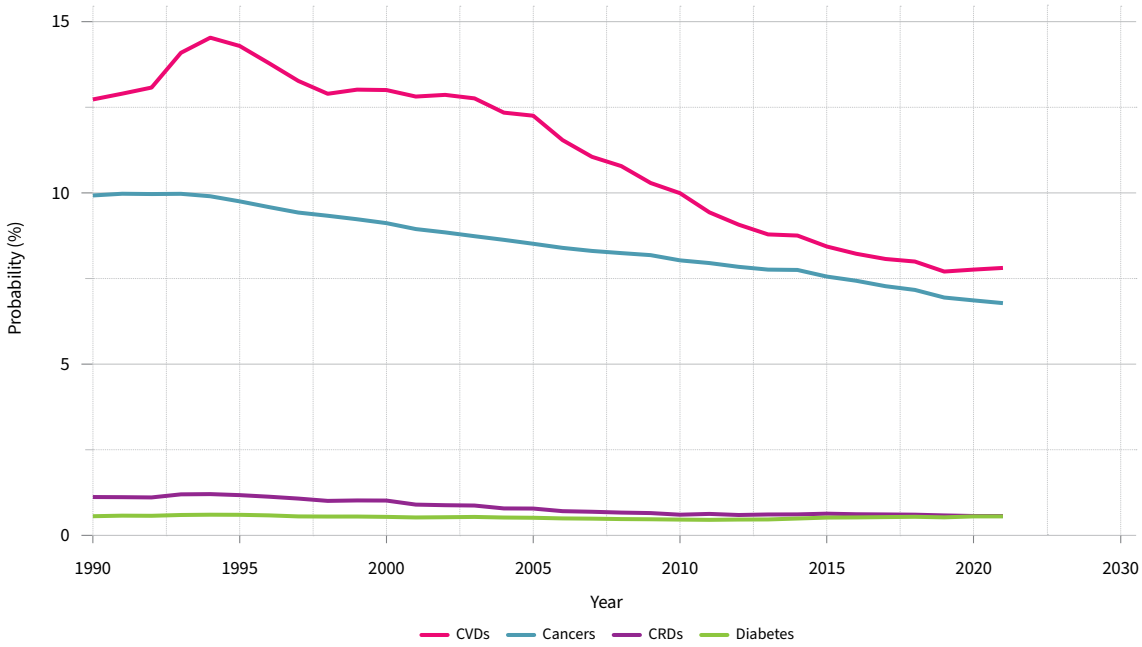
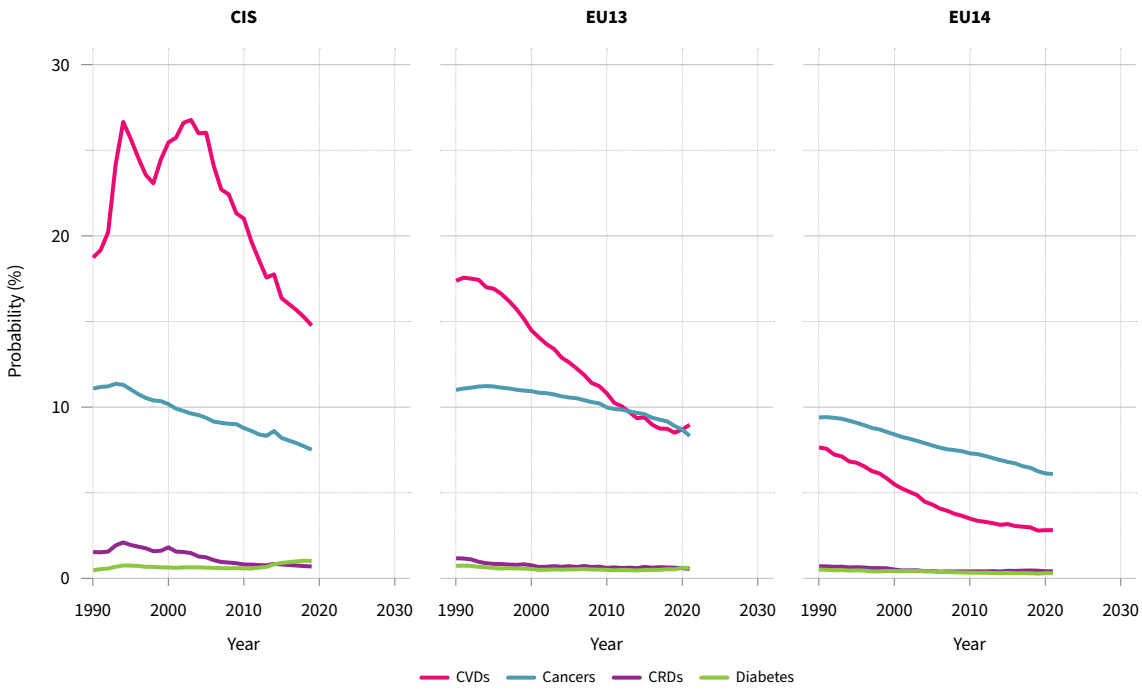


Fig. 7. Unconditional probability of dying between ages 30–69 from CVDs, cancers, CRDs and diabetes in the CIS, EU13 and EU14 (1990–2021)



Regarding the latest data from 2019 (for the CIS) and 2021 (for the EU13 and EU14), the probability of dying from CVDs has continued to decrease, falling the most in the CIS (to 14.8%), to 9.0% in the EU13 and to 2.8% in the EU14. Compared to 2010, a relative reduction in premature CVD mortality of 29.8% (or 3.8% annually) was achieved in the CIS, 17.1% (or 1.7% annually) in the EU13, and 19.4% (or 1.9% annually) in the EU14. However, for some countries an increase during the COVID-19 pandemic (after 2020) was noticeable, indicating that progress had slowed or actually reversed. After the improvements in premature CVD mortality of previous decades, the longer-time trend of plateauing in the EU14 has also been noticeable since the early 2010s.

Premature mortality from cancers also saw a decrease during the 2010–2021 period (2010–2019 for the CIS), but was of smaller magnitude than for CVDs, with relative reductions of 14.4% (or 1.7% annually) in the CIS, 16.7% (or 1.6% annually) in the EU13, and 16.6% (or 1.6% annually) in the EU14. In the EU14 the level of premature mortality from cancers remained twice as high as from CVDs, which had achieved low levels.

The most salient features of the trends in premature NCD mortality were, first, the important decreases in CVD mortality in all country groups, but particularly in the CIS, and its slowdown in the EU14; and second, the changing patterns of disease burden, with cancer mortality predominating in some areas of the WHO European Region, particularly at the point when CVD mortality reached a threshold of around 10% probability of dying. Also noticeable was an increase of 75% (or 6.4% annually) in premature mortality from diabetes in CIS countries.

Premature mortality trends for the four main NCD groups at the country level broadly resembled the patterns seen in the CIS, EU13 and EU14 country groups (Fig. A1.3). In countries where premature mortality due to the four main NCDs was over 20%, it was mostly driven by high, and often rapidly declining, CVD deaths. In a second group of countries, the overall level of premature NCD mortality was 15–19%, with similar levels of CVD and cancer mortality. These countries were mainly from the EU13 group. A third group of countries had overall premature mortality below 15%, with more deaths from cancer than from CVDs – a pattern that reflected the profile of the EU14 group. Long-term trends of the decline in the probability of dying prematurely from CVDs have slowed down since 2014, or even seen a slight increase, especially in countries with relatively low levels.

During the COVID-19 pandemic, premature mortality from CVDs increased in certain countries, especially in 2021 (Fig. A1.4). Increases were larger in countries with higher CVD burdens, as can be seen by comparison with 2019 levels. For countries with 2022 data, the levels were comparable to or lower than those in 2019.

Examining between-country inequalities in premature mortality from CVDs alone reveals that, while the SII decreased significantly from 2010 onwards for both sexes, from 21.7 to 17.7, this progress was reversed during the period 2019–2021, when the SII increased significantly from 12.7 to 14.8 for both sexes (Annex 5). This highlights the profound effect of COVID-19 on heightening inequalities.

In contrast, between-country inequalities in premature cancer mortality showed consistent improvement from 2010 to the most recent data – declining overall (SII from 6.7 to 5.6) and for both sexes separately (SII from 10.5 to 8.6 for males and from 4.6 to 3.9 for females). Notably, unlike with CVDs, the pandemic

period (2019–2021) showed no statistically significant disruption to these downward trends, suggesting that cancer mortality inequalities were less affected by COVID-19 health system disruptions.

It is important to remember that cancers represent a diverse group of diseases (including lung, breast, prostate, colon, stomach and ovary, among the more common ones) that differ in the extent to which they are preventable and avoidable through health care. Other issues to consider when interpreting trends is small population size and low quality and coverage of cause-of-death data in some countries, which may affect the stability of mortality levels in a way that makes them more difficult to interpret and classify.

Changing cause-of-death patterns

Key messages

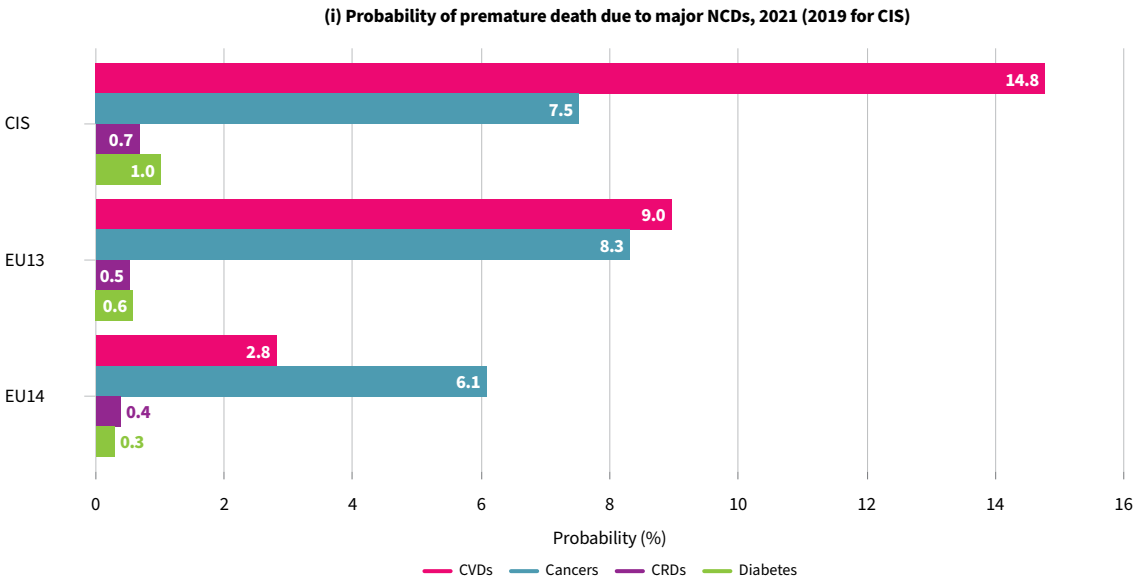
- When levels of mortality are lower, cancers replace CVDs as the leading cause of death.
- Reductions in cancer mortality have been slower than reductions in CVD mortality over recent decades. Consequently, it may be more difficult to sustain the current pace of reduction and to achieve targets in the future.

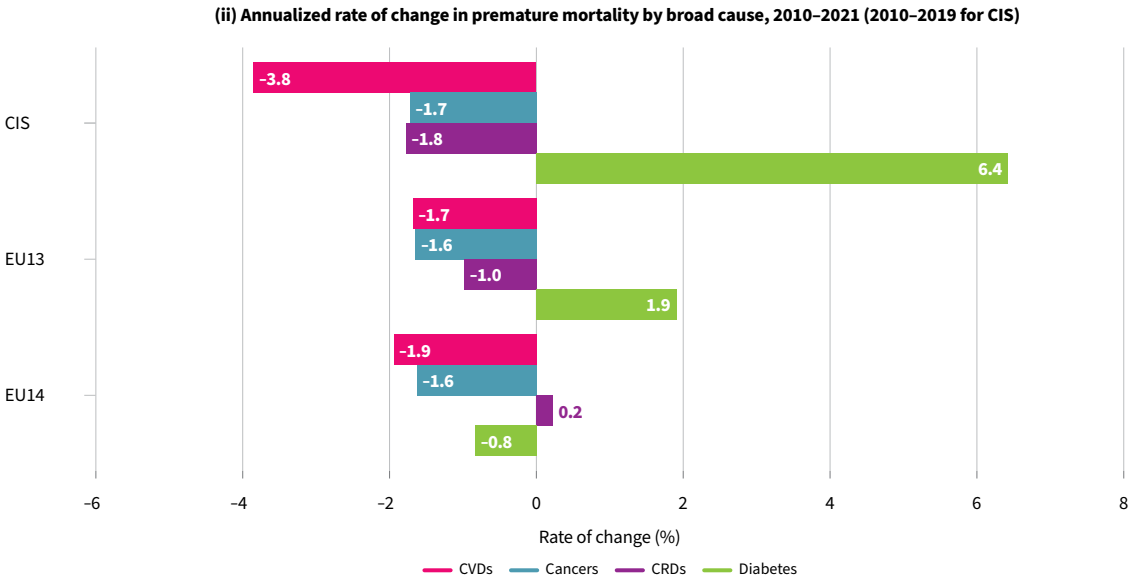
Countries with relatively low levels of premature mortality, such as the EU14 countries – which had previously been on track to achieve or even surpass the targets *(25)* – saw a slowdown in the reduction of premature mortality. Patterns of premature mortality by broad NCD group show that, upon reaching an overall level of approximately 18–20% or lower, cancers tended to take the place of CVDs as the leading cause of death, and reductions in NCD mortality began to be driven mostly by cancers (Fig. 8). As cancer mortality showed a much slower rate of decline compared to CVD deaths, yearly reductions in premature mortality due to the major NCDs were slowing down as well and falling below the levels needed to reach the targets (2.0% annually for the initial bold GMF, EAP and EPW targets and 2.6% for the SDG). For example, since 2010, 32 countries have managed to reduce premature mortality from CVDs by more than 2% per year, while only 18 countries have managed to reduce premature mortality from cancers by 2% per year or more.

In addition, at very low levels of premature mortality due to CVDs, as seen, for example, in the EU14 countries, a slowdown in the annual rate of decline in CVD mortality was observed. CVD mortality also increased in some countries during the COVID-19 pandemic. A further concern is the rising trend in premature mortality from diabetes, which is particularly prominent in CIS countries.

Therefore, as more countries reach lower levels of premature mortality, a further slowdown of the yearly reduction rates is likely in years to come. On the other hand, a few countries were able to achieve EPW targets well before the 2025 deadline, and some of these are also on track to achieve the more ambitious SDG target.

Fig. 8. Premature mortality by country group: (i) probability due to four major NCDs in 2021 (2019 for CIS); and (ii) annualized rate of change in 2010–2021 (2019 for CIS)





Chapter 3. Avoidable mortality from NCDs



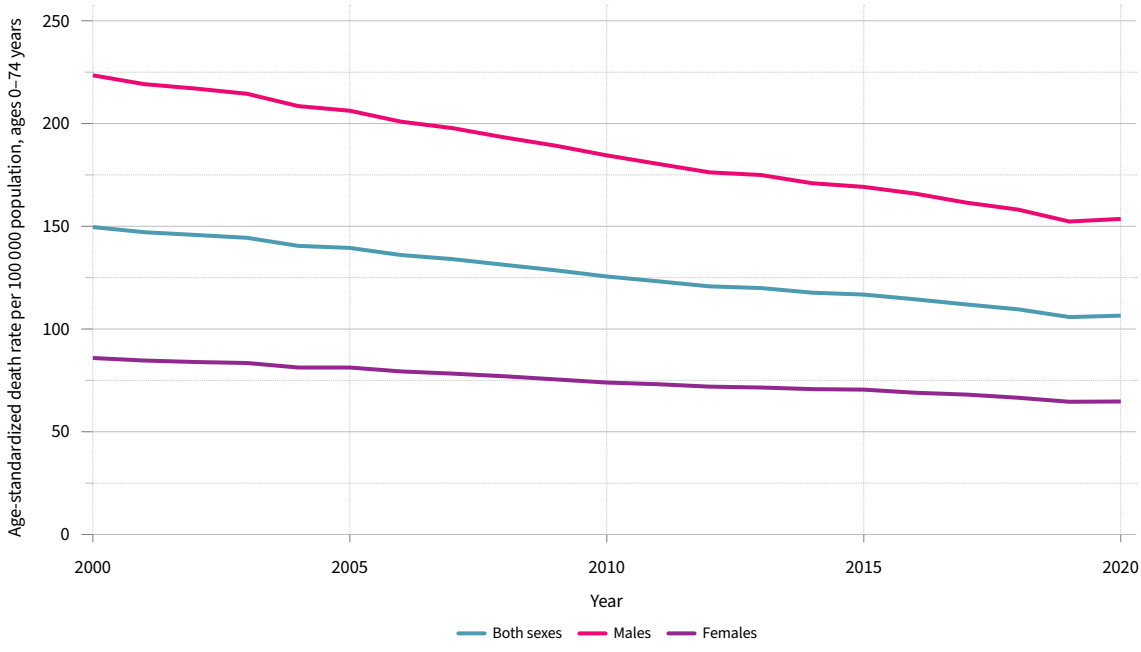
Avoidable mortality refers to deaths occurring before 75 years of age from causes that are either preventable through effective public health services or treatable through appropriate health-care services. Mortality from all avoidable causes is a widely used indicator endorsed and used by international organizations and many countries in their official statistics *(26–30)*.[4] Indicators for preventable and treatable mortality from NCDs are new and have been developed by the WHO Regional Office for Europe and disseminated for the first time in this report. They can be used as indicators of effectiveness of NCD prevention and treatment policies and systems, respectively.[5]

Preventable mortality from NCDs

Preventable mortality from NCDs is largely influenced by modifiable risk factors (such as tobacco or alcohol use, physical inactivity, unhealthy diet and air pollution) and/or can be prevented with immunization. Treatable mortality from NCDs reflects the effectiveness of the health-care system. While both have fallen substantially since 2010, there is significant room for improvement across the WHO European Region.

Approximately 60% of all avoidable deaths from NCDs are preventable, meaning they are linked to modifiable risk factors. Of these, 40% are due to cancers. While levels of most risk factors have been declining in the Region since 2010, they remain high. Across the Region, preventable mortality from NCDs fell until 2019, whereupon the trend reversed in 2020 with the rise of the COVID-19 pandemic. While preventable mortality followed similar downward trajectories for males and females, the annual reductions from 2010 to 2019 were considerably larger for males (2.2%) than for females (1.5%) (Fig. 9). As a result, inequalities between sexes have decreased considerably, although the levels among males remain more than double those among females.

Fig. 9. Preventable mortality from NCDs in the WHO European Region (2000–2020), by sex



4 The list of avoidable causes needs to be periodically reviewed and modified to reflect advances in medical knowledge and available treatments.

5 For further information on these new indicators, see Annex 2.

The highest levels of preventable mortality from NCDs, as well as the fastest reductions (2.6% per year between 2013 and 2018), were observed in the CIS countries (Fig. 10). Although levels were twice as high in the EU13 as in the EU14, the levels of reduction were comparable (2.0% per year from 2010 to 2019 in the EU13, 1.9% in the EU14). Progress in the EU13 began to slow in 2015, but reversed with the advent of COVID-19 in 2020 and plateaued in 2021, the last year for which data are available. For the EU13, the preventable mortality rate was slightly higher in 2021 than in 2020, probably reflecting the impact of the protracted pandemic, including disruptions to health-care systems.

Differences between the sexes are considerable: 100% in the CIS, 177% in the EU13 and 144% in the EU14 for the last available year. Reductions for males were three times greater than for females (2.5% and 0.7% per year in the period 2010–2019) in the EU14, which resulted in the gap narrowing from 217% in 2000. However, this was mostly due to lack of progress among females. The percentage reductions in the EU13 over the same period did not differ markedly between the sexes (2.2% and 1.8% per year in the period 2010–2019).

Fig. 10. Preventable mortality from NCDs in the CIS, EU13 and EU14 (2000–2021), by sex



At the country level, there are mixed results and several salient points to note (Fig. A1.5). First, comparing latest available data by country, an almost tenfold variation between countries is observed. Second, while the majority of countries saw reductions in preventable mortality, several countries evinced flattening or upward trends that occurred prior to the rise caused by COVID-19 in 2020. Third, the rates of reduction since 2010 vary widely between countries.

After 2010, between-country inequalities decreased significantly for both sexes, with the SII decreasing from 225.2 to 172.4. Changes for males and females were also statistically significant, decreasing from 346.5 to 274.5 and from 143.8 to 101.5, respectively. With respect to the effect of COVID-19 on the level of equalities, inequalities increased significantly for both sexes, with the SII increasing from 151.6 in 2019 to 169.9 in 2021. Likewise, the SII increased for females (from 76.6 to 88.7) and for males (from 264.4 to 288.7) during this period, although these changes did not reach statistical significance.

Treatable mortality from NCDs

Treatable mortality from NCDs followed a similar pattern, with marked decreases and a narrowing gap between the sexes (Fig. 11). The annualized rate of change from 2010 to 2019 was 2.0% and was comparable in magnitude for both males and females. There was an uptick in the treatable mortality rate in 2020 due to the pandemic, similar to that seen in preventable mortality. However, the increase was more marked, particularly for males (2.6% versus 0.9% for females). Treatable mortality for both sexes increased by 1.8% between 2019 and 2020, three times the increase observed in preventable mortality over the same time period (0.6%) (Fig. 12). This confirms that health-care systems were disrupted during the COVID-19 pandemic and that males were more negatively affected by the pandemic in terms of mortality from both preventable and treatable NCD causes.

Fig. 11. Treatable mortality from NCDs in the WHO European Region (2000–2020), by sex

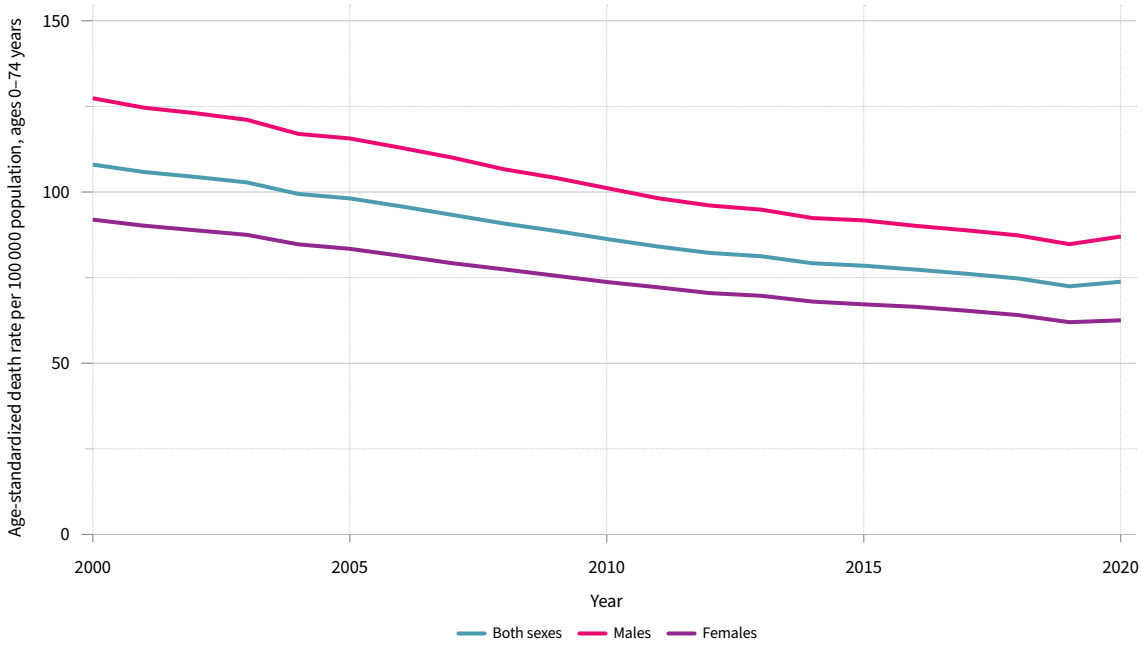
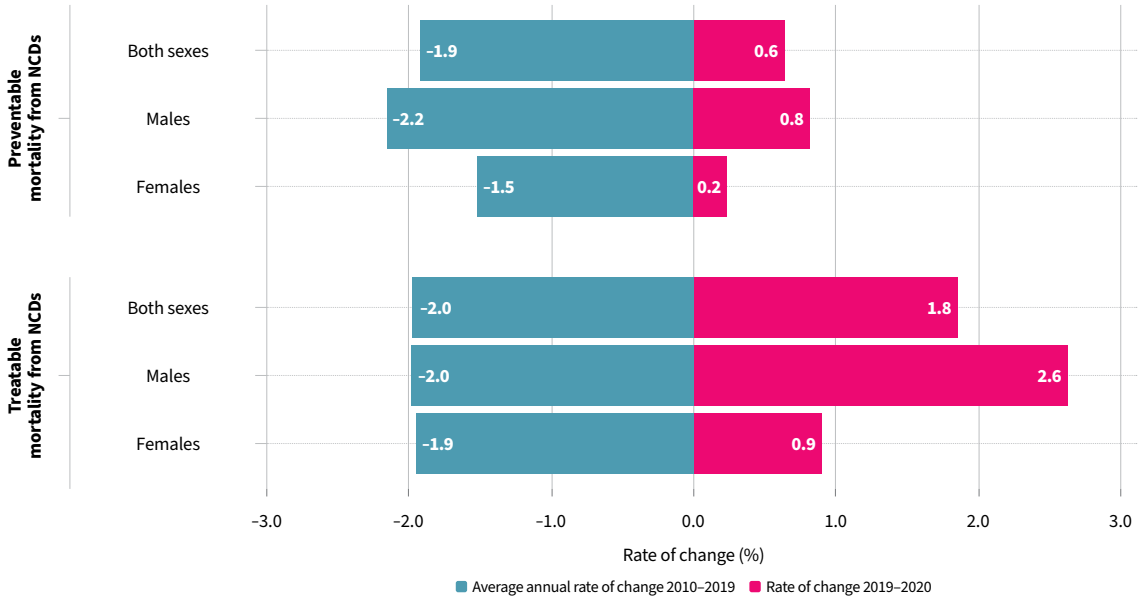


Fig. 12. Annualized rate of change in preventable and treatable mortality from NCDs (2010–2019 and 2019–2020), by sex



Increases in treatable mortality from NCDs among males during COVID-19 were particularly accentuated in the EU13 (Fig. 13). Although treatable mortality from NCDs fell in all country groups between 2010 and 2019, annual reductions were greatest in the EU13 (2.5%), followed by the EU14 (2.4%) and the CIS (1.8%). Reductions were greater among males than among females in the EU14 (2.5% and 2.0%, respectively), while in the CIS and EU13 they were comparable. In the EU14 male mortality was only 19% higher than female mortality, compared to 72% in the EU13 and 50% in the CIS.

Levels and trends at country level broadly resemble the trends seen in the country groups, with considerable variation between countries (Fig. A1.6). Several countries reported low levels of treatable mortality, with small differences between sexes. Countries with higher levels experienced higher increases in 2020 and 2021, indicating that countries with a higher NCD burden were the hardest hit during the pandemic (Fig. A1.7). Moreover, these countries usually also had high mortality from preventable NCDs. A return to pre-pandemic levels was seen in countries reporting 2022 data.

After 2010, between-country inequalities decreased significantly for both sexes, with SII falling from 169.3 to 138.7. Changes for females were statistically significant, decreasing from 129.0 to 99.3, while those for males, decreasing from 226.9 to 191.1, did not reach statistical significance. With respect to the effect of COVID-19 on the level of equalities, inequalities increased significantly for both sexes, with the SII increasing from 117.7 in 2019 to 137.3 in 2021. Likewise, the SII increased for females (from 81.6 to 95.1) and for males (from 170.2 to 196.6) during this period, with these changes reaching statistical significance (see Annex 2).

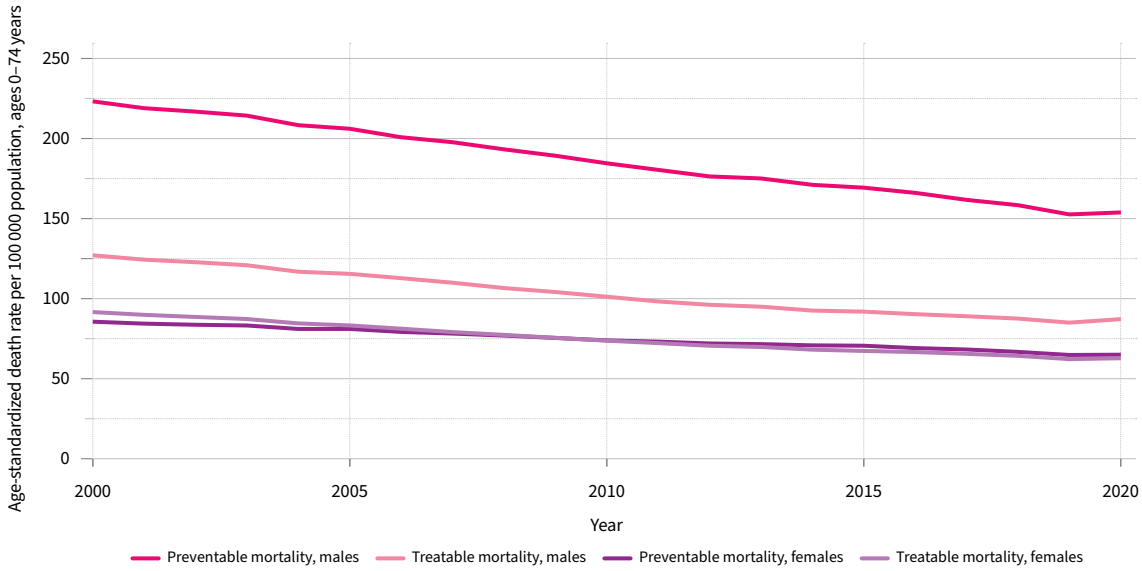
Fig. 13. Treatable mortality from NCDs in the CIS, EU13 and EU14 (2000–2021), by sex



Comparison of preventable and treatable mortality

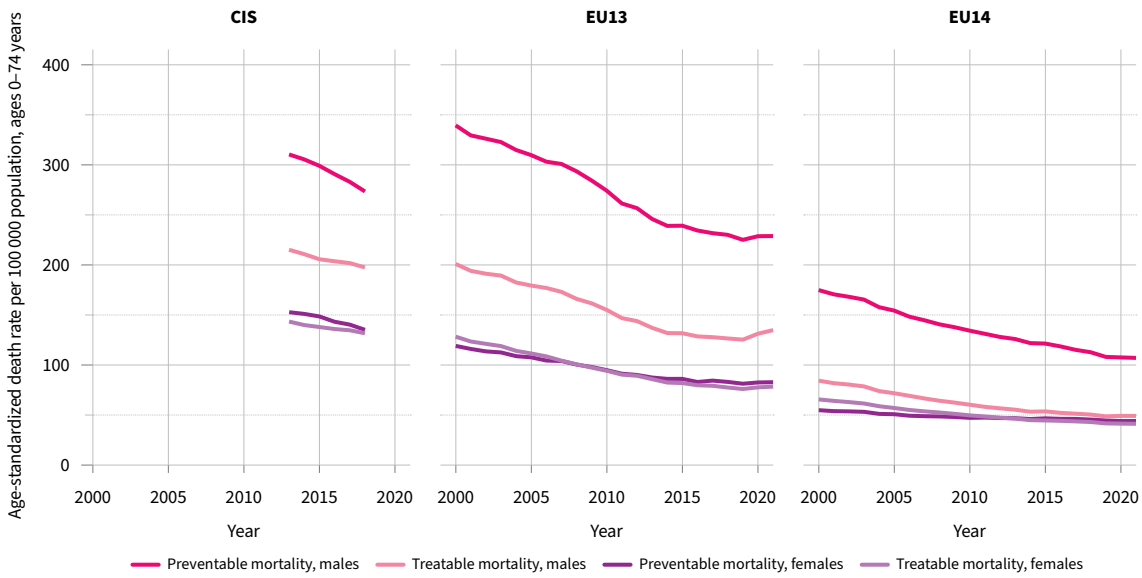
In 2020 there were 1.8 million avoidable deaths from NCDs in the WHO European Region, or 180 deaths per 100 000 population (age-standardized rate). Avoidable deaths are those occurring before 75 years of age from causes that are either preventable or treatable. Fifty-nine per cent of all avoidable deaths caused by NCDs were preventable (64% among males and 51% among females) – that is, they were influenced by modifiable behavioural risk factors. For females across the Region, the declining levels of preventable and treatable mortality from NCDs were nearly coincident, with treatable mortality evincing slightly higher rates than preventable mortality until 2008, whereupon the pattern reversed (Fig. 14). In contrast, the rate of preventable mortality among males was consistently higher than that of treatable mortality, although the gap narrowed from 96.1 per 100 000 in 2000 to 66.6 per 100 000 in 2020. After 2010, the rates of preventable and treatable deaths from NCDs fell by 15.2% and 14.5% (annually 1.7% and 1.6%), respectively. Reduction of preventable deaths was greater among men than among women (16.8% versus 12.4%, or 1.9% versus 1.3% annually), while reductions in treatable mortality were similar for both men and women (14.0% versus 15.1%, or 1.5% and 1.7% annually).

Fig. 14. Preventable and treatable mortality from NCDs in the WHO European Region (2000–2020), by sex



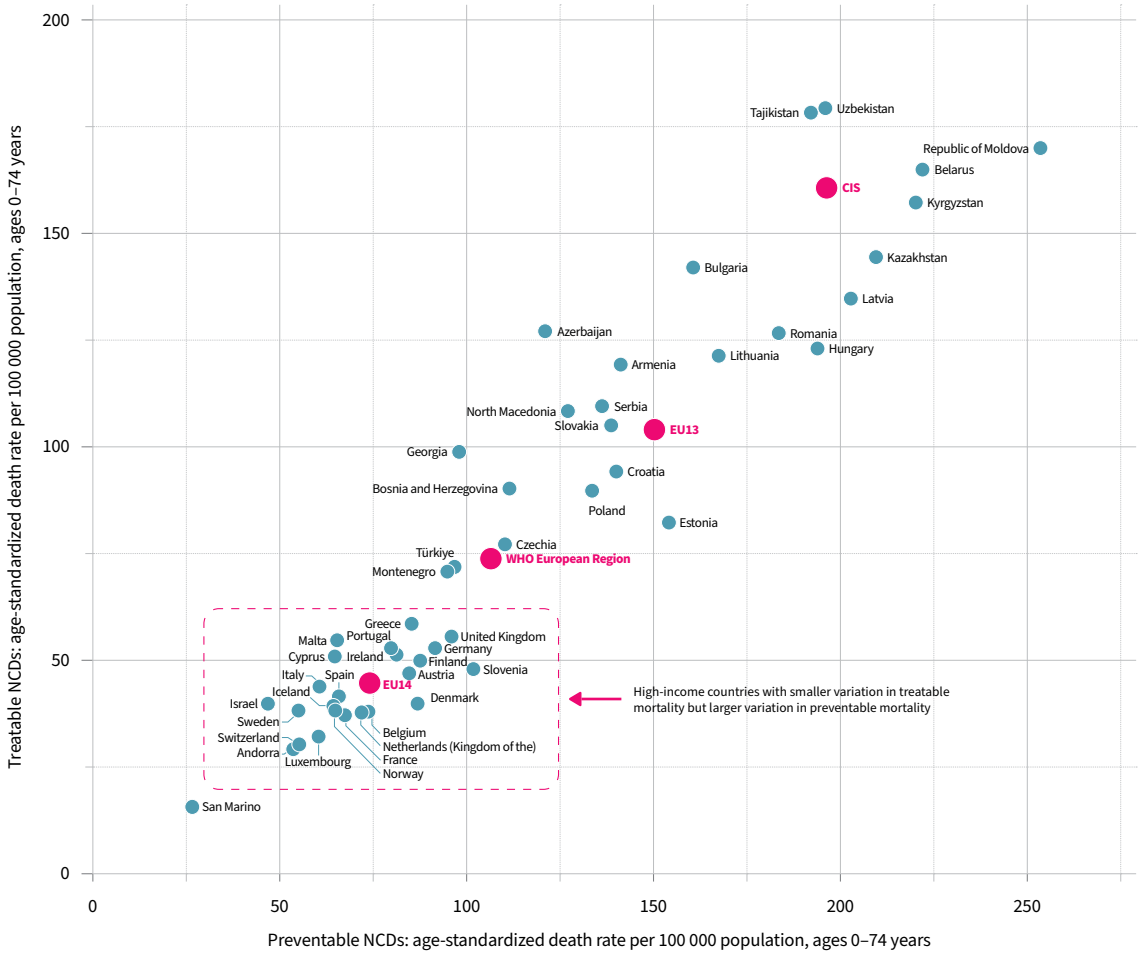
Substantial differences in treatable mortality between the sexes were manifest in the EU13 and CIS (Fig. 15). In the EU14, however, treatable mortality rates for males were nearly as low as those for females, indicating markedly smaller inequality between the sexes. In all country groups, the declines in preventable mortality were the steepest. Indeed, in both the CIS and the EU14 the slopes for preventable mortality were roughly twice as steep as those for treatable mortality, but only for males (6.3 versus 3.1 in the CIS, 3.1 versus 1.6 in the EU14). For females, however, this pattern – steeper declines in preventable over treatable mortality – was only evident in the CIS, whereas both the EU13 and the EU14 exhibited steeper slopes for treatable mortality. This suggests that policies regarding preventable mortality have led to sizeable improvements for both sexes, primarily in the CIS, whereas the greatest advances for females have occurred for treatable mortality in the EU13 and EU14 country groups.

Fig. 15. Preventable and treatable mortality from NCDs in the CIS, EU13 and EU14 (2000–2021), by sex



When comparing rates of preventable and treatable mortality at country level (Fig. 16), it is apparent that they are strongly correlated, especially at higher levels of mortality, with preventable mortality 50–60% higher than treatable. There is a cluster of high-income countries with low levels of mortality, mostly EU14 countries, with similar levels of mortality from treatable NCDs, yet greater variation in the level of mortality from preventable NCDs. While this requires further analysis, it suggests that, among these countries, there is wider variation in the effectiveness of preventive policies compared to treatment effectiveness.

Fig. 16. Preventable and treatable mortality from NCDs, by country and country group, latest available data



Indirect cost

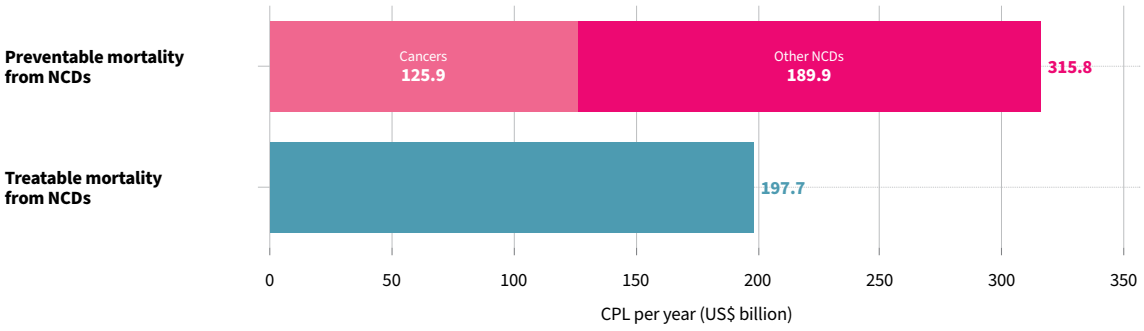
Avoidable mortality from NCDs in the WHO European Region imposes a significant cost of productivity loss (CPL).[6] To quantify the economic impact of preventable and treatable mortality from NCDs, the CPL was calculated for the 30–74 age group *(31,32)*. The annual CPL due to preventable and treatable mortality from NCDs in the WHO European Region, based on the last available data, was US$ 514.5 billion (Fig. 17). This figure was made up of:

- CPL due to preventable mortality from NCDs, which was US$ 315.8 billion, or 61% of overall CPL (of this, US$ 125.9 billion, or 40% of CPL, was due to preventable cancers); and
- CPL due to treatable mortality from NCDs, which was US$ 197.7 billion, or 39% of overall CPL.

The CPL due to preventable and treatable deaths from NCDs by country is given in Annex 4.

These findings underscore the very high financial burden associated with both preventable and treatable health issues in the Region, highlighting the importance of effective health prevention and treatment.

Fig. 17. Annual CPL due to preventable mortality from NCDs (including from cancers) and treatable mortality from NCDs in the WHO European Region, last available year



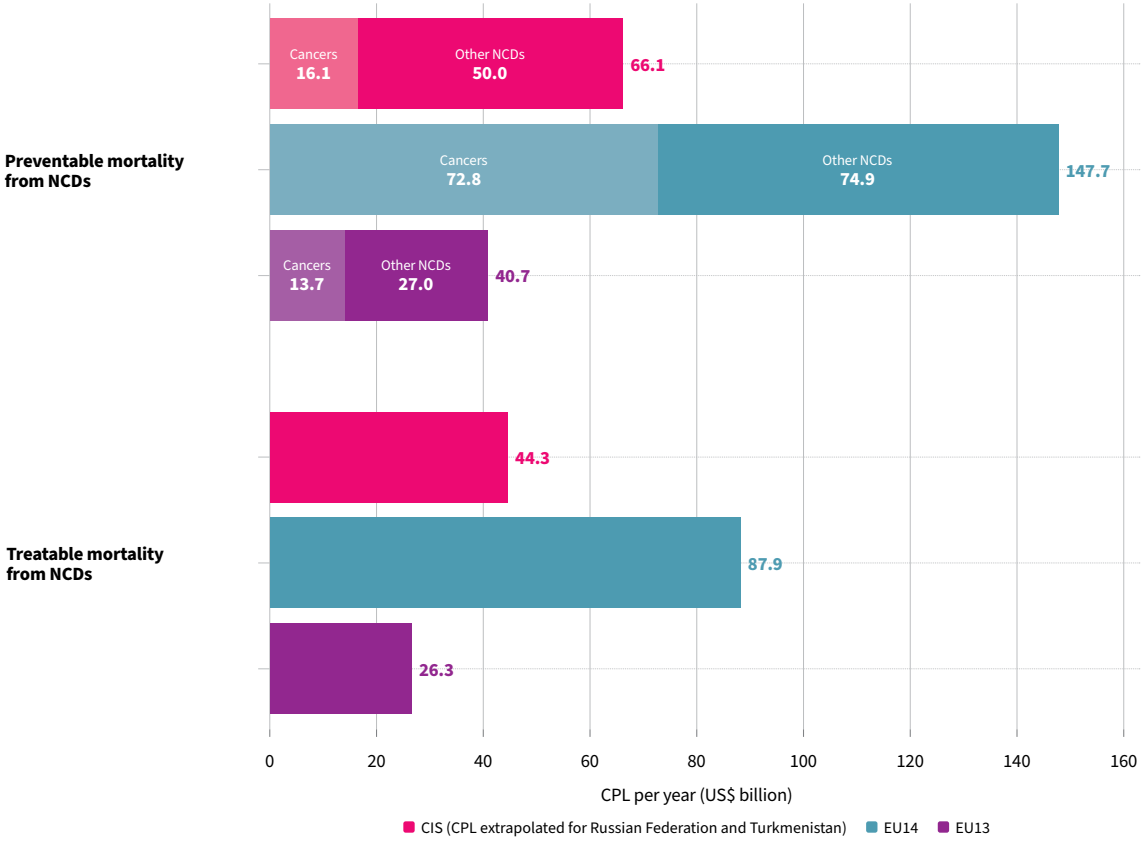
CPL by country group showed significant economic impact of NCDs in all groups: US$ 235.6 billion in the EU14, US$ 67.0 billion in the EU13 and US$ 110.4 billion in CIS countries (Fig. 18). CPL was highest in EU14 countries despite lower levels of mortality, as a result of high gross domestic product (GDP) and population size, reflecting different patterns of mortality and economic development. CPL associated with preventable mortality from cancer was highest among EU14 countries, accounting for half of the total CPL due to preventable mortality from NCDs in these countries, while in EU13 and CIS country groups it accounted for a third and a quarter, respectively. Compared to levels of avoidable mortality in 2010, 2.8 million avoidable deaths from NCDs had been cumulatively averted by 2020, and associated CPL reduced by US$ 311.4 billion (constant 2015 US$). Approximately 60% of averted avoidable deaths (1.6 million) and associated CPL (US$ 185.5 billion in constant 2015 US$) were due to reductions in preventable mortality from NCDs.

6 CPL is calculated as the number of years of life lost between the ages of 35 and 75 multiplied by GDP per capita. The CPL approach has several important limitations: it does not include direct medical costs or costs associated with absenteeism and presenteeism at the workplace; and the choice of age cut-off points has considerable implications.

Annual CPL in the WHO European Region is estimated at 3.9% of GDP (2.4% for preventable and 1.6% for treatable NCDs). Analysis of CPL as a share of GDP per capita by country again indicated significant disparities in both preventable and treatable mortality from NCDs, with a five- to sixfold difference between the highest and lowest values for preventable mortality (Fig. A1.8). Some notable findings at country level include the following:

- The Republic of Moldova demonstrated the highest impact of CPL due to preventable mortality from NCDs at 6% of its GDP per capita, followed by Belarus at 5.7% and Latvia at 5.5%.
- San Marino and Israel showed the lowest impact, both with only 0.9% CPL of GDP per capita, followed by Sweden at 1.2%.
- When considering CPL related to treatable mortality from NCDs, Belarus showed an impact of 3.8% of GDP, followed by the Republic of Moldova at 3.5% and Bulgaria at 3.3%.
- San Marino again showed the lowest impact at 0.6%, while Andorra, Luxembourg and Switzerland each registered around 0.7%.

Fig. 18. Annual CPL due to preventable mortality from NCDs (including from cancers) and treatable mortality from NCDs in the CIS, EU13 and EU14, last available year



Suicide

Key messages

- Suicide rates in the WHO European Region have declined in recent decades.
- The WHO European Region was on track to achieve the target of a one-third reduction in suicide rates between 2015 and 2030, but there was uneven progress across country groups.
- Of the 42 countries reporting mortality data since 2015, more than half (57.1%) were on track to achieve the target.
- Between-country inequalities in the suicide mortality rate decreased after 2015.

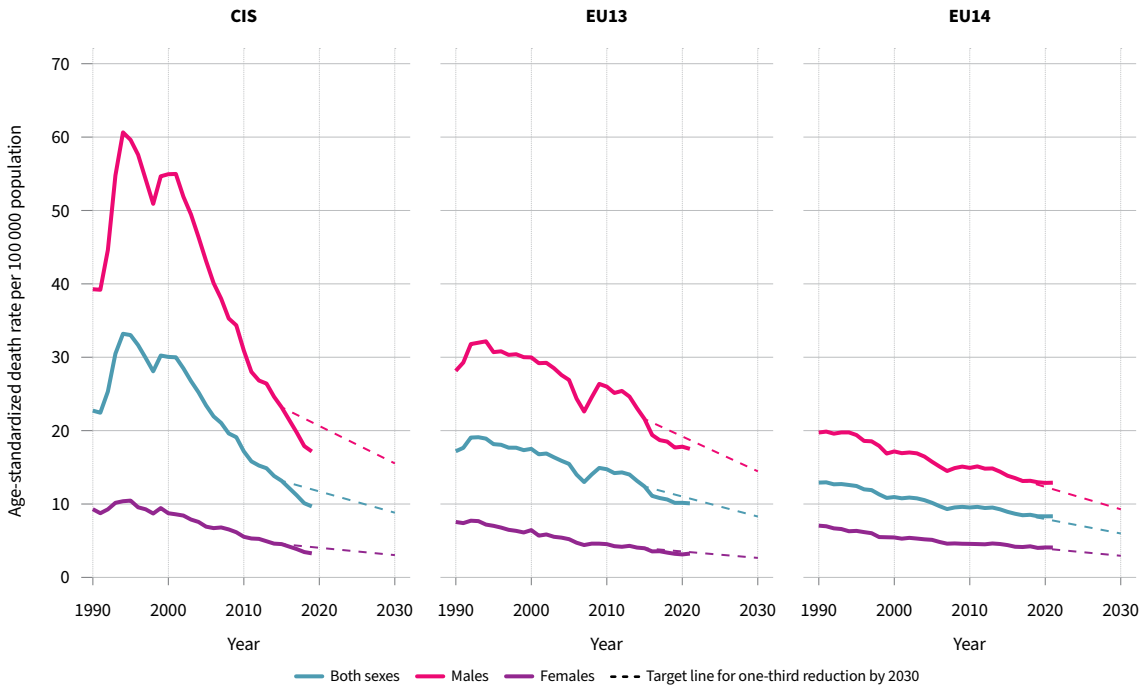
Mental disorders often coexist and are linked with other NCDs *(33)*. In addition, they share common risk factors, including tobacco and alcohol use, obesity and raised blood glucose. Joint action on mental health and NCDs is intended to accelerate progress in tackling these risk factors. Mental health and air pollution were therefore added to the comprehensive NCD response as part of the expanded 5-by-5 approach at the Third United Nations High-Level Meeting on NCDs in 2018 *(8)*. Reduction of the suicide mortality rate by one third between 2015 and 2030 is the only timebound outcome target of the Comprehensive Mental Health Action Plan 2013–2030 *(34)* and is aligned with SDG target 3.4.2 (on mortality from suicide). However, suicide represents only a small fraction of the overall burden of mental health conditions.

In the WHO European Region the age-standardized death rates for suicide and intentional self-harm exhibited a decline in the first decades of the 21st century, after a steep but short-lived rise in the first half of the 1990s following the dissolution of the Soviet Union and other communist States (Fig. 19). Rates were approximately four times higher among males than among females. In 2015 the rate was 10 per 100 000 (16.6 for males and 4.1 for females). In 2020 the WHO European Region reached suicide rates of 8.6 per 100 000 (14.2 for males and 3.5 for females). The Region was therefore on track to achieve the target of a one-third relative reduction between 2015 and 2030, with a relative advantage to the target line of 3.3%, or 1.2 years.

For many countries, especially small ones, year-to-year variation was considerable, as a consequence of small population size and the relatively low number of suicides. Nevertheless, of 49 countries with available suicide rates since 2015, 30 (61%) were on track to meet the target (Fig. A1.9). Furthermore, after 2010, between-country inequalities decreased significantly for both sexes, with the SII falling from 16.4 to 12.6. Changes for males and females were also statistically significant, decreasing from 30.0 to 22.3 for males and from 6.6 to 6.1 for females.

There was no obvious major increase in suicide rates among the general population during the COVID-19 pandemic. However, it is well documented that the mental health burden increased substantially during the pandemic, especially among younger people. In-depth analysis is needed to assess the situation among population subgroups, including vulnerable groups. Additional indicators may improve understanding of this burden. The full impact of COVID-19 on mental health remains to be quantified and may only become visible in the future *(35)*.

Fig. 19. Age-standardized death rate from suicide per 100 000 population, all ages, in the CIS, EU13 and EU14 (1990–2021 or last available year), including target line (2015–2030), by sex



Chapter 4. NCD risk factors



Most NCDs are caused by five modifiable risk factors: tobacco use, alcohol use, unhealthy diet, insufficient physical activity and air pollution. These risk factors lead to biological risk factors, the most common being overweight and obesity, high blood pressure, high blood glucose and high blood cholesterol. Taken together, these risk factors cause nearly two thirds of the NCD burden in the WHO European Region *(36)*. For these reasons, it is important to monitor not only NCD mortality, but also the levels of the main NCD risk factors and their related trends.

Tobacco use

Key messages

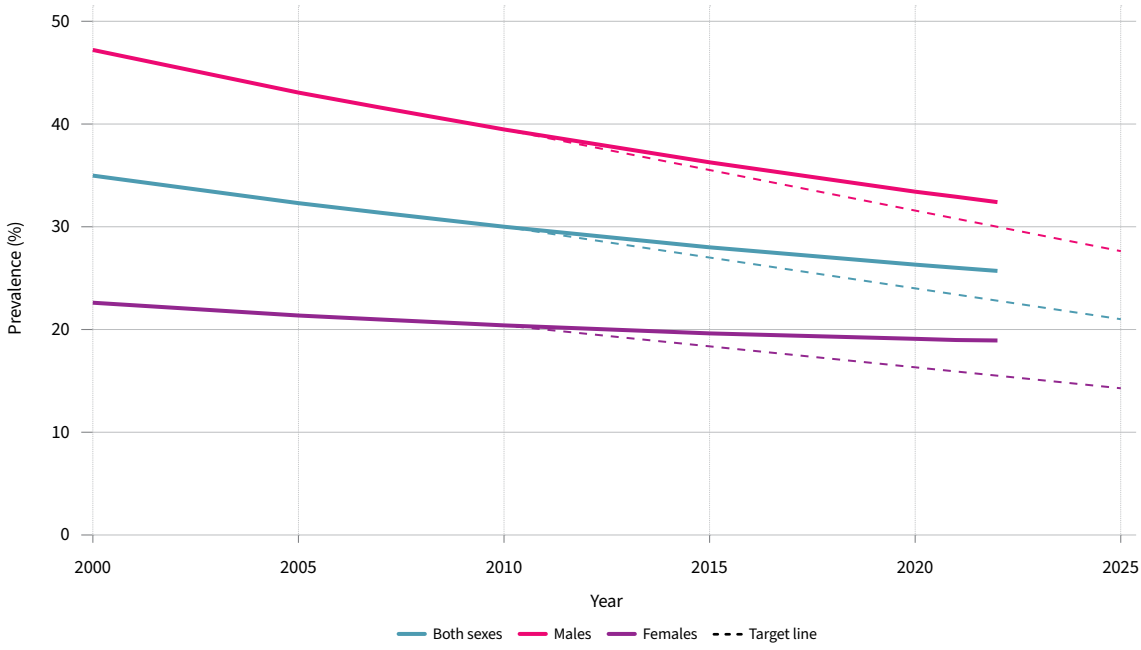
- In 2022, 25.3% of the population of the WHO European Region used tobacco, down 14.2% since 2010.
- The decline in the prevalence of tobacco use was insufficient to meet the GMF target of a 30% reduction between 2010 and 2025.
- Seven countries achieved the GMF target ahead of 2025, five were on track, and the prevalence was declining in a further 31 countries.
- Tobacco use was almost twice as high among men as among women (32% versus 18.5%); however, the rate of decline was 2.4 times slower among women than men and, in some countries, more women used tobacco than men.
- Prevalence of e-cigarette use among children and adolescents increased, with rates surpassing adult use in several countries.

Tobacco use, including both smoked and smokeless tobacco products, is one of the major modifiable behavioural risk factors for NCDs. The WHO European Region ranks among the highest globally for overall prevalence of tobacco use and holds the highest rate of tobacco use among females. Tobacco use causes over 8 million deaths each year, most of which are largely avoidable if well-known, cost-effective and evidence-based measures are applied at the population and individual levels. WHO has estimated that around 16% of all NCD deaths in the Region can be attributed to tobacco use (and could thus be eliminated by removing exposure in the population), with a significantly higher fraction among males (28%) than among females (7%) *(37)*. Tobacco use is associated with numerous health and disease consequences, ranging from impaired body function and tissue damage to cell carcinogenesis *(38)*.

The GMF target is a 30% reduction in tobacco use between 2010 and 2025. SDG target 3.a is to "[s]trengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate", using the indicator "age-standardized prevalence of current tobacco use among persons aged 15 years and older".

The prevalence of current tobacco use for both sexes declined between 2010 and 2022 from 29.5% to 25.3% (a 14.2% relative reduction, or 1.3% annually), with the prevalence for males declining to 32.0% (a 17.9% reduction, or 1.6% annually) and for females to 18.5% (a 7.5% reduction, or 0.6% annually) (Fig. 20). However, this was not sufficient to achieve the relevant targets, with a relative difference to the target line of 11.4% (or a delay of 4.8 years) for both sexes. The gap from the target line was larger for females (17.8%, or a delay of 7.6 years) than for males (7.4%, or a delay of 3.1 years).

Fig. 20. Age-standardized prevalence of current tobacco use in the population aged 15 and over in the WHO European Region (2000–2022), including target lines (2010–2025), by sex



In 2010 tobacco use prevalences for both sexes showed relatively little variation by country group, with levels highest in the EU13 at 33.4%, followed by the EU14 at 30.0% and by the CIS at 28.8% (Fig. 21). More pronounced differences were observed between the sexes, with levels four times higher among males than females in the CIS, 1.5 times higher in the EU13, and 1.3 times higher in the EU14. By 2022 tobacco use prevalence for both sexes had seen relative reductions of 13.8% in the EU13, 10.3% in the CIS and 14.1% in the EU14. However, these reductions were not fast enough to reach the target line, with gaps of 11.6% (a delay of 4.9 years) in the EU14, 15.3% (a delay of 6.5 years) in the CIS, and 11.9% (a delay of 5.0 years) in the EU13. Trends by sex show that neither males nor females in any of the country groups were on track to reach the target, with a slower reduction (and thus a growing gap to the target line) among females than among males. Particularly worrying was the increase in tobacco use among females in the CIS between 2010 and 2022, with current levels 33.1% higher than the target line, corresponding to a delay of 14.1 years. Overall, all regions experienced a flattening of the trend line – driven particularly by slow or even reversed progress in females in some countries – during the period 2018–2020.

Considering country-specific prevalence of current tobacco use and progress towards the 30% reduction targets between 2010 and 2025, the data show considerable variation, with prevalence rates for both sexes in 2022 ranging from 5.6% to 39.5% (9.3–55.9% for males, 0.1–39.1% for females) (Fig. A1.10).

Fig. 21. Age-standardized prevalence of current tobacco use in the population aged 15 and over in the CIS, EU13 and EU14 (2000–2022), including target lines (2010–2025), by sex



By 2022, 43 of 49 countries with available data exhibited decreasing trends in tobacco use. However, only seven countries had achieved the target for both sexes, while a further five were on track to do so. Of the remaining countries, seven were within two years of the target line, while 30 were off track by more than two years. Notably, tobacco point prevalence increased in six countries, driven by rising tobacco use among females. After 2010 between-country inequalities increased significantly for both sexes, with SII increasing from 21.3 to 24.9. Changes for males and females were not statistically significant.

Monitoring e-cigarette use among adults and adolescents is crucial to track prevalence and changes over time. In the WHO European Region 37 countries had data on adult e-cigarette use (2013–2022), while 44 countries reported adolescent use through national school-based surveys. Available data showed that the prevalence of current e-cigarette use in adults varied widely, ranging from 0.2% to 7.7%. The use of e-cigarettes among adolescents (aged 13–15) ranged from 0.7% to 23.3%. The prevalence of e-cigarette use among children and adolescents increased in recent years, with rates surpassing adult use in many countries *(39)*.

Alcohol use

Key messages

- In 2022 the average alcohol per capita consumption (APC) among adults (15 years and older) in the WHO European Region was 9.1 litres of pure alcohol, a 12.5% reduction compared to the 2010 level, with significant variation across countries, ranging from 0.7 to 17.1 litres.
- The WHO European Region was on track to achieve the revised target of a 20% reduction in APC between 2010 and 2030. Seven countries already had APC levels below 2030 target values in 2022.
- Reductions in APC were larger in the CIS than in EU countries.

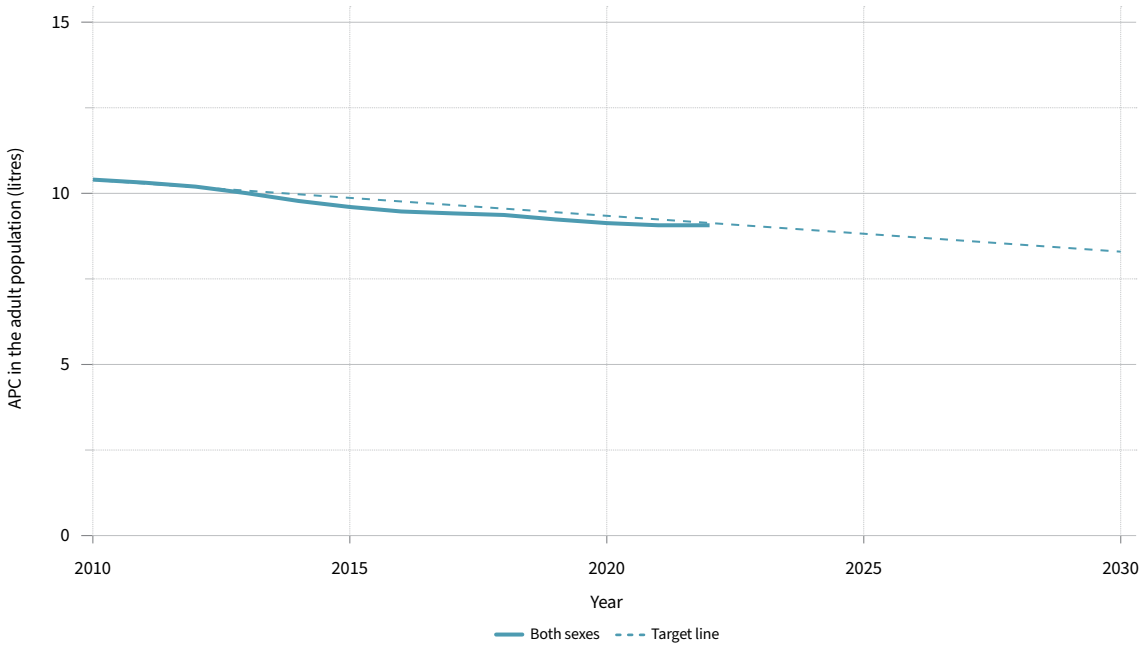
Alcohol consumption is another significant behavioural risk factor for NCDs and a critical public health challenge in the WHO European Region, which has the highest recorded levels of APC worldwide, the largest proportion of drinkers in the population, and the greatest contribution of alcohol to the overall burden of disease *(40)*. Alcohol is recognized as a cause of more than 200 diseases and injuries in the International Classification of Diseases, with at least 40 being entirely attributable to alcohol. The burden of alcohol-attributable mortality arises from two broad categories: chronic NCDs, including neurological disorders, cancers, CVDs and digestive diseases (for example, liver cirrhosis), and acute conditions, such as unintentional and intentional injuries (for example, injuries from violence and accidents) *(40)*. Furthermore, alcohol use contributes directly and indirectly to the prevalence and progression of communicable diseases through weakened immunity, risky behaviours and comorbidities. The causal relationship between alcohol and mental health is complex and bidirectional, meaning that alcohol use can contribute to mental health disorders, while mental health disorders can increase alcohol consumption and thus the risk of alcohol use disorders (AUDs). The WHO European Region has the highest global prevalence of AUDs – chronic conditions characterized by their persistent, relapsing nature and the need for long-term management. AUDs remain among the most stigmatized mental health conditions and are strongly comorbid with chronic NCDs.

Worldwide, 2.6 million deaths were attributable to alcohol consumption in 2019, representing 4.7% of all deaths in that year *(40)*. This proportion was much higher for the WHO European Region, where 8.8% of all deaths were caused by alcohol use, representing 800 000 deaths in 2019. Younger people are disproportionately affected by alcohol consumption, with more than a quarter (27.4%) of all alcohol-attributable deaths in 2019 occurring among people aged 30–34. Moreover, people with lower socioeconomic status are disproportionately affected by alcohol-related harms. The negative impacts of drinking are more severe for poorer individuals and their families compared to wealthier drinkers. Additionally, harms caused by a given level or pattern of drinking may be higher in a lower-income country than a higher-income one. Stark regional differences highlight a clear "harm per litre" gradient within the WHO European Region, with eastern European and central Asian countries experiencing greater harm despite similar or lower levels of alcohol consumption.

The revised GMF target is a relative 20% reduction in total (recorded and unrecorded) APC in the adult population (aged 15 years and over) between 2010 and 2030. In 2010 total APC in the WHO European

Region was 10.4 litres among adults; by 2022 the overall total APC had fallen to 9.1 litres for both sexes (Fig. 22). The WHO European Region has made steady progress toward this 20% alcohol reduction target. As of 2022, the Region was slightly ahead of schedule, by 0.5 years. While this demonstrates positive momentum, maintaining the current pace remains crucial to achieve the ultimate 2030 goal of 8.3 litres. Continued efforts will be needed to ensure the downward trend persists until the end of the decade.

Fig. 22. Total APC in the adult population (aged 15 and over) in the WHO European Region (2010–2022), and target line (2010–2030), both sexes



In 2010 the average adult APC was broadly similar across the three country groups. The highest consumption level was recorded in the EU13 (13.0 litres), followed by the EU14 (10.8 litres) and the CIS (10.4 litres) (Fig. 23). By 2022 adult APC had decreased in the CIS to 7.8 litres, surpassing the target line well in advance of the target date. In the EU14 APC for both sexes decreased to 10.25 litres, with a relative gap level to the target of 7.5% (corresponding to a delay of 6.8 years). In the EU13 the decrease was even slower, with APC for both sexes falling to 12.8 litres and a relative gap level to the target line of 10.6% (corresponding to a delay of 9.6 years).

In 2022 significant variation in total APC by country was observed (Fig. A1.11). Of the 51 countries with available data, 14 were on track to reach the target, of which seven had already reached the target for both sexes ahead of the 2030 deadline. Eight countries were off track to meet the target, with a gap of less than five years. Conversely, 29 countries faced delays of more than five years. Between-country inequalities did not change significantly between 2010 and 2022.

Fig. 23. Total APC in the adult population (aged 15 and over) in the CIS, EU13 and EU14 (2010–2022), and target line (2010–2030), both sexes



Physical inactivity

Key messages

- The prevalence of insufficient physical activity in the population of the WHO European Region remained constant at 25% between 2010 and 2022.
- The level of insufficient physical activity ranged significantly between countries, from 8.7% to 51.7%.
- By 2022, 17 countries, mostly from the EU14, had already achieved the GMF target of a 15% reduction by 2030.
- Rates of insufficient physical activity were higher among females than among males in 35 countries reporting data.

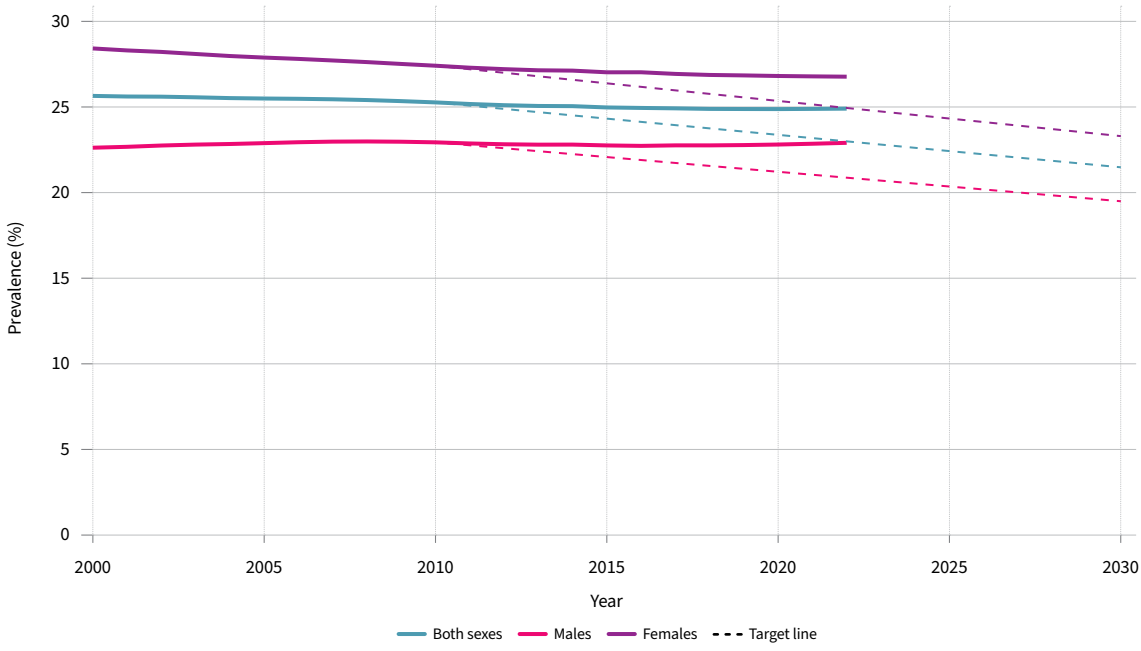
Regular physical activity has a positive impact on both physical and mental health across all age groups. Conversely, low physical activity increases the risk of several NCDs, including heart disease, stroke, breast and colon cancers, and diabetes, all of which can lead to avoidable and premature mortality. Additionally, physical activity helps to prevent hypertension, overweight and obesity. Engaging in regular physical activity can be beneficial at any age and is particularly important for healthy ageing and for managing chronic conditions.

The initial GMF target aimed for a relative reduction of 10% in insufficient physical activity by 2025, compared to 2010 levels. With the adoption of the WHO Global Action Plan on Physical Activity 2018–2030, the target was extended to a 15% reduction by 2030 *(41,42)*. Tracking low levels of physical activity at global, regional and national levels is crucial for evaluating the effectiveness of policies aimed at reducing inactivity.

The age-standardized prevalence of insufficient physical activity is determined by assessing those adults aged 18 and older who do not meet the WHO recommendations for physical activity: 150 minutes per week of moderate-intensity activity, 75 minutes per week of vigorous-intensity activity, or an equivalent combination of both.

In 2010 the prevalence of adults in the WHO European Region not meeting the WHO physical activity recommendations was 25.0% overall, with 22.8% among males and 27.1% among females (Fig. 24). The lack of progress resulted in a relative gap to the target line of 9.0%, or a shortfall of 11.1 years, for both sexes.

Fig. 24. Age-standardized prevalence of insufficient physical activity among adults aged 18 and over in the WHO European Region (2000–2022), and target lines (2010–2030), by sex



Analysis of data across different country groups in the WHO European Region reveals significant variation, in 2010, in the prevalence of adults not meeting the WHO recommendations for physical activity (Fig. 25). The highest prevalence of insufficient physical activity among adults was observed in the EU14 countries, with 29.0% of both sexes, followed by the EU13, with 25.4%. The CIS countries had the lowest prevalence of adults with insufficient physical activity at 15.7% for both sexes. It is notable that, in all three country groups, females had higher prevalence of insufficient physical activity than males, with the largest disparity observed in the EU14, where the difference was 5 percentage points.

Tracking physical inactivity over the years shows a decrease in the prevalence of inactivity in the EU14 countries. By 2022 the prevalence for both sexes had fallen to 22.8% (a relative reduction of 21.0%), 20.8% for males and 24.7% for females. The EU14 country group was therefore not only on track, but had already reached the global 2030 target of a 15% reduction by 2015. In contrast, data from 2022 for the EU13 indicate an increase in the prevalence of adults with insufficient physical activity to 32.0% for both sexes (a relative increase of 33.2%), 31.4% for males and 32.6% for females. Similarly, the CIS countries saw an increase in physically inactive adults, with prevalence rising to 21.4% (a relative increase of 36.2%), 20.4% for males and 22.2% for females. These data suggest mixed results: while the EU13 and the CIS still need to make efforts to reduce the prevalence of insufficient physical activity, the EU14 shows good levels of physical activity, in line with GMF targets.

Fig. 25. Age-standardized prevalence of insufficient physical activity among adults aged 18 and over in the EU13, EU14 and CIS (2000–2022), and target lines (2010–2030), by sex



Analysing country-specific estimates, the prevalence of insufficient physical activity among the adult population in the WHO European Region varied widely in 2022, ranging from 8.7% to 51.7% for both sexes (Fig. A1.12). Of the 52 countries with available data, 35 (67%) reported higher levels of physical inactivity among females than among males. Twenty-three countries had successfully reduced the prevalence of physical inactivity to meet or surpass the target line; and 17 of these countries had already reached the global 2030 target by 2022. Conversely, 25 countries had seen an increase in physical inactivity levels among their adult population over the same period.

Since 2010 between-country inequalities increased, but not significantly so, for both sexes, with SII increasing from 30.8 to 34.0. Changes for males and females were not statistically significant.

High blood pressure

Key messages

- Prevalence of raised blood pressure in the population aged 30–79 years in the WHO European Region was 27.2% in 2019, a decline of 14.2% from 2010; however, this was insufficient to be on track to meet the 2025 target of a 25% reduction.
- Only the EU14 country group was on track to achieve the target, while in the EU13 progress was slower among males than among females.
- One third of countries (31.4%) were on track to reach the target, and seven countries achieved the target ahead of the deadline.
- Between-country inequalities increased significantly, with SII rising from 21.2 to 26.3 between 2010 and 2019.

High blood pressure is perhaps the single most important risk factor for CVD; an estimated 18% of premature deaths due to CVD, in particular stroke and heart disease *(25)*, in the WHO European Region are attributable to high blood pressure. Many causes of high blood pressure, including behavioural, biological and health systems-related factors, can be addressed effectively through prevention and management in primary health care settings. The GMF target calls for a 25% relative reduction, in the population aged 18 and over, between 2010 and 2025, in the age-standardized prevalence of raised blood pressure, defined as systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg.

The prevalence of raised blood pressure in the population of the WHO European Region aged 30–79 years in 2010 was estimated to be 31.7% for both sexes; the prevalence was higher for males (36.1%) than for females (27.5%) (Fig. 26). By 2019 the prevalence for both sexes had dropped to 27.2%: a relative decrease of 14.2%, or a delay of 0.5 years, compared to the target line, with similar decreases for both males and females (−14.3% and −14.2%).

In 2010 the CIS country group showed the highest overall prevalence of high blood pressure at 40.0%, followed by the EU13 at 37.4% and the EU14 at 26.1% (Fig. 27). Differences between the sexes were considerable, with prevalences for males in the EU13 (41.2%), EU14 (58.4%) and CIS (18.9%) higher than for females. By 2019 trends showed that only the EU14 was on track to achieve the target, with a relative reduction of 21.1% (ahead of the target line by 4.1 years), with similar decreases for both males and females. Values decreased by 11.0% in the EU13 and by 8.0% in the CIS, with decreases in the EU13 higher among females than among males (13.5% and 9.6%, respectively).

In 2019 overall country-specific prevalence levels varied between 13.3% and 44.3%, with consistently higher levels for males (15.1–48.6%) than for females (10.5–42.6%) (Fig. A1.13). By 2019, 16 of the 51 countries with available data (31.4%) were on track to reach the target; of these, seven had achieved the target ahead of the deadline. Of the countries that were off track, 11 had delays of less than 2 years and 14 had delays of 2–5 years.

Since 2010 between-country inequalities had increased significantly for both sexes, with SII increasing from 26.2 to 30.0. Changes for males and females were statistically significant, rising from 27.0 to 31.1 for males and from 28.0 to 30.7 for females.

Fig. 26. Age-standardized prevalence of raised blood pressure in the population aged 30–79 in the WHO European Region (1990–2019), and target lines (2010–2025), by sex

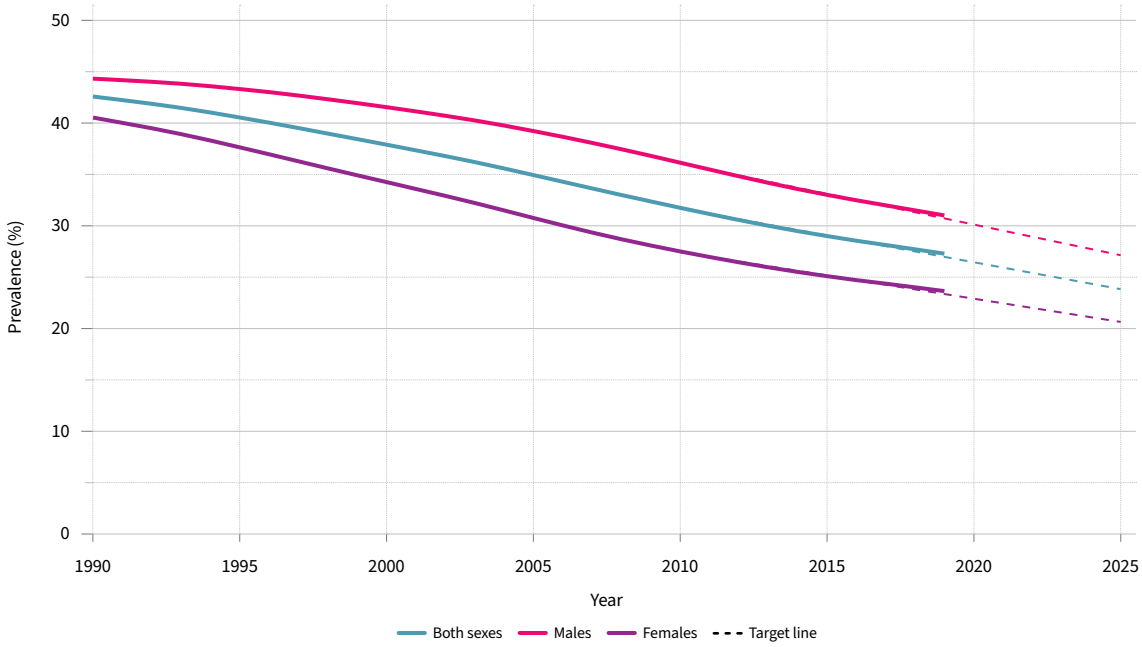
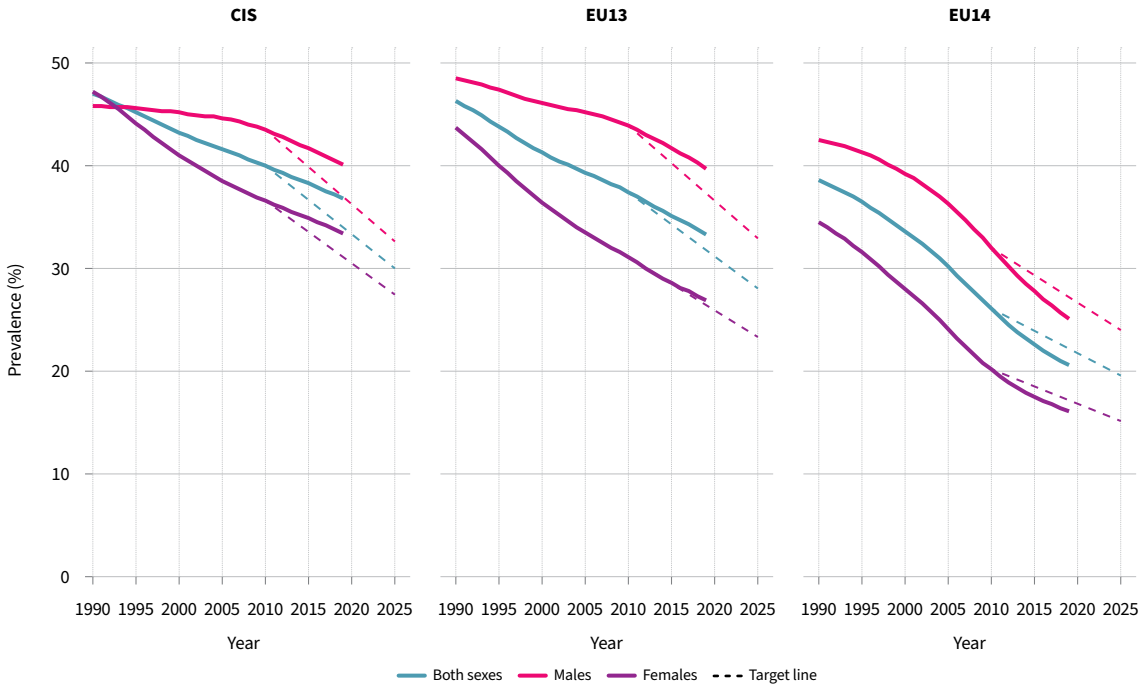


Fig. 27. Age-standardized prevalence of raised blood pressure in the population aged 30–79 in the CIS, EU13 and EU14 (1990–2019), and target lines (2010–2025), by sex



In 2019 overall country-specific prevalence levels varied between 21.9% and 49.2%, with consistently higher levels for males (26.4–55.9%) than for females (17.5–46.9%) (Fig. A1.13). By 2019 only four of the 51 countries with available data (8%) were on track to reach the target. Of the countries that were off track, eight had delays of less than 2 years and 13 had delays of 2–5 years.

Since 2010 between-country inequalities had increased significantly for both sexes, with SII increasing from 21.2 to 26.3. Changes for males and females were statistically significant, rising from 22.3 to 26.0 for males and from 23.7 to 28.5 for females.

Overweight and obesity

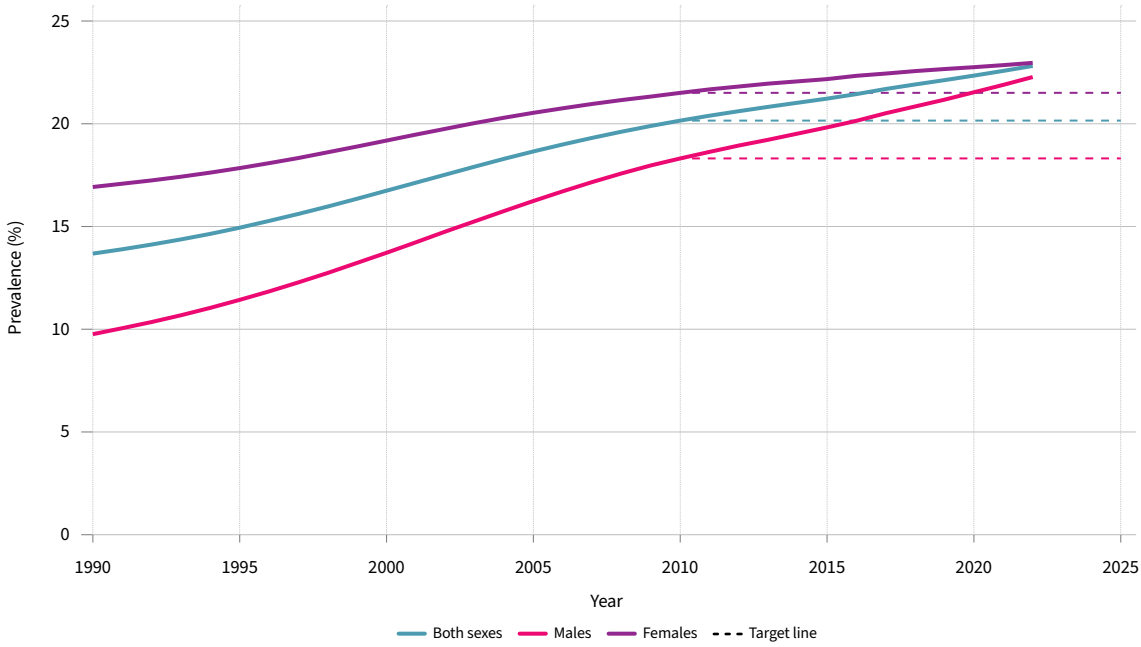
Key messages

- New estimates confirmed increases in obesity levels in most countries of the WHO European Region, as well as across the Region as a whole, with prevalence rising faster among males than among females.
- The WHO European Region was not on course to meet the GMF target of halting the rise in obesity.
- For the first time two countries – France and Spain – were halting the rise in obesity prevalence for both sexes, as well as for males and females individually, contributing to a flattening of the EU14 curve.
- Between-country inequalities in overweight and obesity increased significantly between 2010 and 2022, with the SII rising from 13.1 to 19.2.

Overweight and obesity are the leading cause of disability in the WHO European Region and cause 10% of premature deaths *(36,43)*. Over recent decades the prevalence of overweight and obesity has risen at an alarming rate, leading to a heightened risk for a number of NCDs, including CVDs, diabetes, several cancers and mental health disorders.

To achieve the GMF targets, countries have been urged to halt the rise of the age-standardized prevalence of overweight and obesity, defined as body mass index ≥ 25 kg/m^2 for overweight and ≥ 30 kg/m^2 for obesity, for population groups over 18 years of age. Previous estimates showed strong increases in all countries of the world, without any signs of flattening of the curve. The benchmark for measuring progress as part of the GMF is age-standardized prevalence of obesity, with levels in the WHO European Region in 2010 of 19.9% for both sexes, 18.4% for males and 21.2% for females (Fig. 28). By 2022 the prevalence of obesity in the Region for both sexes had reached 22.6%, with values of 22.3% for males and 22.7% for females. Although in 2010 the age-standardized prevalence of obesity was higher among females, by 2022 a relative increase of 21.2% had been observed in the prevalence for males, which thus approached the rates observed among females (which had increased by 7.1% in the same period). The observed trends reveal that, at the regional level, the age-standardized prevalence of obesity in the adult population was behind the target line for both sexes, as well as for males and females individually. The relative difference to the target line was 11.9% for both sexes, with males having a more pronounced relative gap of 17.5% to the target, compared to 6.6% for females.

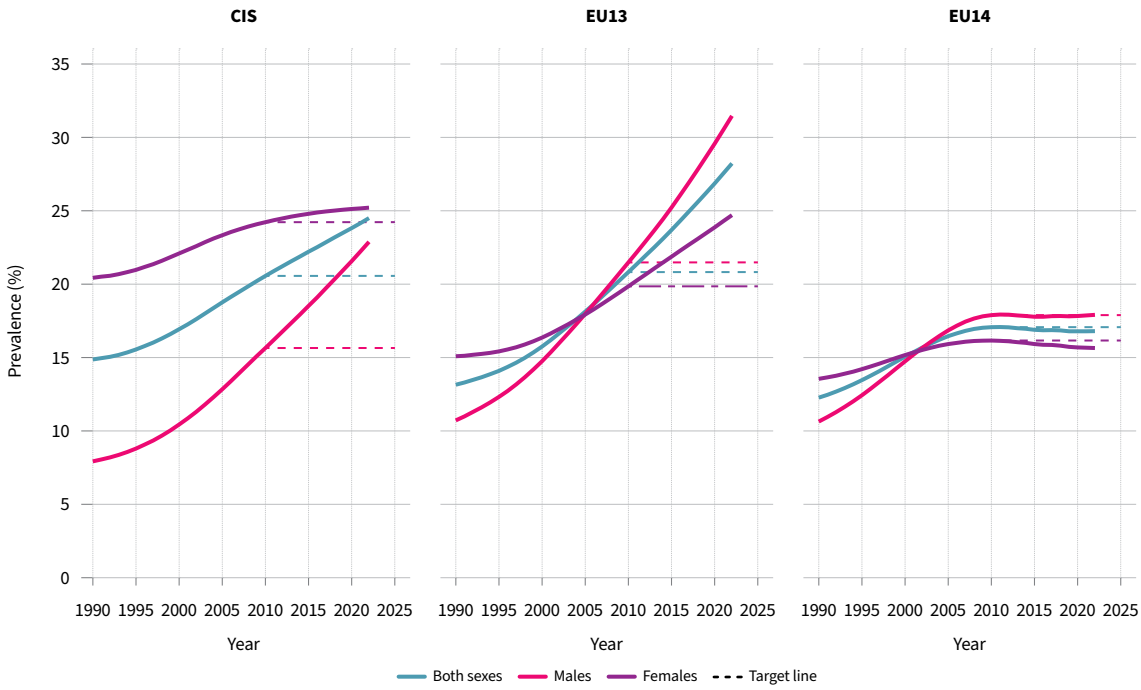
Fig. 28. Age-standardized prevalence of obesity in the population aged 18 and over in the WHO European Region (1990–2022), and target lines (2010–2025), by sex



Analysing the trends of obesity rates across different country groups reveals that the overall prevalence in 2022 varied significantly: from 16.8% in the EU14 to 24.5% in the CIS and 28.2% in the EU13 (Fig. 29). In both the EU13 and the EU14 the prevalence of obesity among males surpassed that among females. Since 2010 obesity rates among males in the EU13 had increased to 31.4% (a relative increase of 46.4%), with nearly one in three males in this group affected. A similarly rapid increase of obesity rates among males was observed in CIS countries to 22.8% – a relative increase of 46.1%. In contrast, the EU14 group of countries managed to level off the rise in obesity prevalence for both sexes and for females, with prevalence levels of 16.8% and 15.6%, respectively.

The country-specific analysis of obesity prevalence for both sexes revealed a range from 9.7% to 34.7% in 2022 (Fig. A1.14). Many countries in the WHO European Region had experienced a particular increase in obesity prevalence among males since 2010, with the highest observed value being 37.1% in 2022. Since 2010 a total of seven countries in the Region had prevalences of obesity among males that exceeded 30%. On a positive note, many countries had recently seen a reduction in the rate of year-to-year increases in obesity prevalence. Obesity estimates for France and Spain showed statistically significant differences between 2010 and 2022 (with non-overlapping confidence intervals), indicating that the target of halting the rise had been successfully met. There were, however, marked differences in achievement between sexes, as 10 countries had either stabilized or reduced the obesity prevalence among females, compared to only two among males.

Fig. 29. Age-standardized prevalence of obesity in the population aged 18 and over in the CIS, EU13 and EU14 (1990–2022), and target lines (2010–2025), by sex



Countries in the WHO European Region have excellent data on childhood obesity, thanks to a surveillance system – the largest of its kind in the world – specifically aimed at gathering data in this area (Box 1).

Box 1. The WHO European Childhood Obesity Surveillance Initiative

Following the recommendations of the WHO European Ministerial Conference on Counteracting Obesity, held in Istanbul, Türkiye, in 2006 *(44)*, the WHO Regional Office for Europe, along with 13 Member States (Belgium (Flemish Region), Bulgaria, Cyprus, Czechia, Ireland, Italy, Latvia, Lithuania, Malta, Norway, Portugal, Slovenia and Sweden), established the WHO European Childhood Obesity Surveillance Initiative (COSI). This initiative was established to address the need for a standardized, Europewide surveillance system that could inform obesity policy across the WHO European Region *(45)*.

COSI aims to measure trends in overweight and obesity in children aged 6.0–9.9 years and to make intercountry comparisons within the Region through routine and standardized measurement of children's body weight, height and related lifestyle behaviours. Since its inception, six rounds of data collection have been implemented, and the participation in COSI has grown from 13 countries in 2007 to 47 countries in 2024, making it the largest childhood obesity surveillance initiative of its kind globally. Over the course of six data collection rounds, anthropometric data from more than 1.7 million children have been gathered.

Data are collected based on a common protocol established by the WHO Regional Office for Europe and Member States in 2007, with minor adjustments made in subsequent rounds *(46–49)*. The protocol aims to standardize data collection conditions as much as possible, while still allowing participating countries some flexibility to adapt the system to their national context.

Box 1 (contd)

COSI collects data from children aged 6.0–9.9 years, with countries able to select one or more specific age groups. Most participating countries have opted for nationally representative samples of children attending primary school, while a few have included entire populations from certain school grades or age groups. Trained examiners measure children's body weight and height using standardized procedures, and the data are used to classify weight status based on body mass index according to WHO-recommended growth references for school-age children and adolescents *(50,51)*. In addition to anthropometric measurements, information on dietary habits, physical activity, sedentary behaviours, family background and school environments has been gathered in several countries through the COSI family form, completed by parents or caregivers, and the COSI school form, filled in by school staff *(52,53)*.

The latest round of data collection, conducted between 2022 and 2024, involved 37 countries and measured approximately 470 000 children *(54)*. Findings from this round show considerable variability across the Region, with the prevalence of overweight (including obesity) in children aged 7–9 years ranging from 9% to 42% and obesity ranging from 3% to 20%. Overall, 25% of children living in the countries that participated in this round were found to be affected by overweight (including obesity) and 11% by obesity. These figures from COSI round 6 are the first post-COVID-19 estimates, showing that childhood obesity trends remained largely unchanged during the pandemic. However, obesity prevalence increased in four countries and decreased in one. Preliminary results indicate an increase in overweight and obesity prevalence values in some countries compared to the fifth round. The findings from the first five rounds are documented elsewhere *(45,55–57)*.

Since its inception in 2006, collaboration among countries in the WHO European Region, in close partnership with the WHO Regional Office and other partners, has been highly effective in generating reliable, valid data on children's weight status and related factors across the Region. These data have been used in various ways to inform and drive policy progress, ranging from raising public awareness through media collaboration to engaging with policy-makers and leveraging opportunities such as the EU presidency to prioritize childhood obesity on political agendas *(58)*.

COSI data play a vital role in monitoring trends and guiding policy actions, with the goal of halting the rise in obesity and achieving SDG target 3.4, which aims to reduce premature mortality from NCDs by one third. These data can help to inform the actions required today to build a future generation resilient to NCDs.

Diabetes

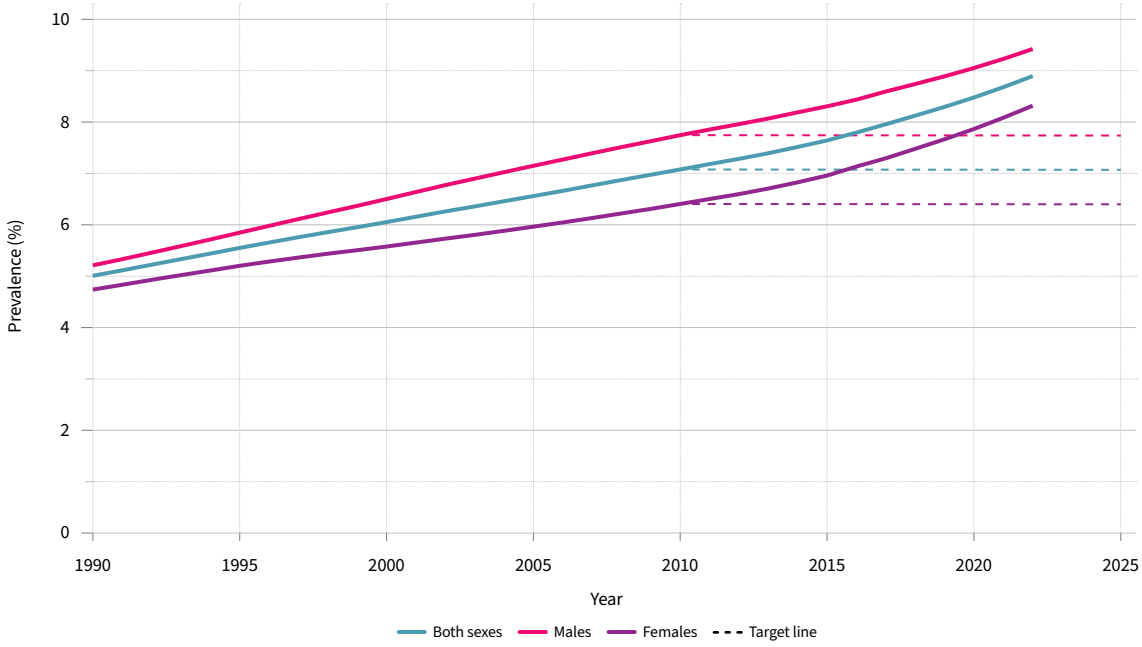
Key messages

- The age-standardized prevalence of diabetes continued to rise, reaching 8.7% in 2022; the target of halting the rise in diabetes prevalence between 2010 and 2025 was not on course to be met.
- Between 2010 and 2022 diabetes prevalence increased by 26.1%, with a greater rise observed in females than in males.
- France and Spain successfully met the target of halting the rise in diabetes prevalence for both sexes, contributing to flattening the curve for the EU14 country group.
- Between-country inequalities increased significantly for both sexes between 2010 and 2022, with the SII rising from 7.6 to 11.2.

Diabetes is a major cause of mortality and morbidity and significantly increases the risk of CVD and stroke, which are major causes of death in people living with diabetes. Additionally, diabetes-related conditions such as neuropathy, retinopathy and amputations have a severe impact on quality of life, leading to chronic disability and long-term health-care needs. It is estimated that 7.6% of premature deaths from NCDs are attributable to raised blood glucose *(3)*. The GMF has set a target of halting the rise of diabetes between 2010 and 2025 (that is, maintaining prevalence at or below 2010 levels).

The prevalence of diabetes in the WHO European Region has been rising for decades, from 4.9% for both sexes in 1990 (5.2% for males and 4.6% for females), to 6.9% in 2010 (7.7% for males and 6.2% for females) and to 8.7% in 2022 (9.3% for males and 8.1% for females) (Fig. 30). Between 2010 and 2022 the prevalence of diabetes increased by 26.1%, with greater increases among females than males (30.6% versus 20.8%), resulting in a larger relative gap to the target line for females (23.5%) than for males (17.2%).

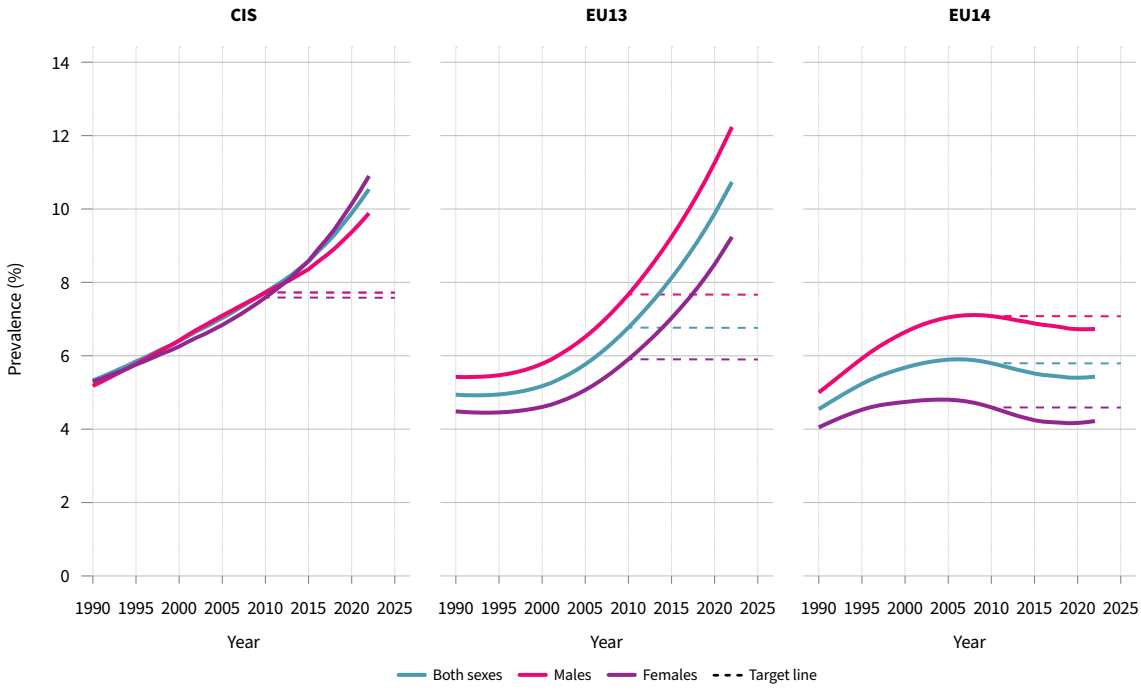
Fig. 30. Age-standardized prevalence of diabetes in the population aged 18 and over in the WHO European Region (1990–2022), and target lines (2010–2025), by sex



In 1990 the estimated prevalence of diabetes showed minimal variation between country groups and between sexes within country groups (Fig. 31). The highest prevalence was observed in the CIS with 5.3% (males 5.2%, females 5.3%), followed by the EU13 with a rate of 4.9% (males 5.4%, females 4.5%) and by the EU14 with a rate of 4.5% (males 5.0%, females 4.1%). By 2022 the prevalence of diabetes in the CIS and EU13 had increased steadily and significantly, reaching rates of 10.5% (9.9% males, 10.9% females) and 10.7% (12.2% males, 9.2% females), respectively. The peak of prevalence in the EU14 was reached in 2008, followed by a period of stabilization, settling at a rate of 5.4% (males 6.7%, females 4.2%) in 2022. While the relative increase between 1990 and 2022 in the EU14 was moderate at 19% (35% for males and 4% for females), the increases in prevalence in the EU13 and CIS were significantly larger, more than

doubling in the EU13 to 117% (125% for males and 106% for females) and almost doubling in the CIS to 98% (91% for males and 106% for females). By 2022 the EU14 had been able to flatten the curve, while levels were increasing fast in the CIS and EU13, with substantial differences between data and the target line of 26.7% in the CIS (males 21.9%, females 30.4%) and 37.0% in the EU13 (males 37.3%, females 36.1%).

Fig. 31. Age-standardized prevalence of diabetes in the population aged 18 and over in the CIS, EU13 and EU14 (1990–2022), and target lines (2010–2025), by sex



Considering the prevalence of diabetes at the country level, the lack of progress towards the target between 2010 and 2025 is a cause for concern (Fig. A1.15). In 2022 the age-standardized prevalence of diabetes ranged from 2.3% to 19.2% for both sexes (2.7–16.8% for males, 1.8–21.4% for females). A total of nine countries (out of 51 reporting) were able to achieve point estimate prevalences of diabetes below the target line for both sexes by 2022. However, only France and Spain had non-overlapping confidence intervals, indicating that they alone had been able to halt the rise between 2010 and 2022. Among the 42 countries with increasing prevalence, there was considerable discrepancy in the extent to which the relative level exceeded the target line, with figures ranging from 0.4% to 54.1%.

Since 2010 between-country inequalities increased significantly for both sexes, with the SII increasing from 7.6 to 11.2. Changes for males and females were also statistically significant, rising from 6.8 to 10.2 for males and from 8.7 to 12.6 for females.

The diabetes prevalence observed across the WHO European Region shows mixed results. Developments within the Region were not uniform; some countries were able to flatten the curve, while France and Spain managed to halt the rise of diabetes. Nevertheless, a majority of countries continued to see strong increases.

Air pollution

Key messages

- The level of air pollution from particulate matter with diameter under 2.5 µm ($PM_{2.5}$) decreased in the WHO European Region in the decade after 2010, although no country reached the WHO Air Quality Guidelines recommended level of 5 µg/m³.
- In 2019 the EU14 country group achieved the lowest concentration level of $PM_{2.5}$ in the Region of 10.9 µg/m³.
- Countries with the highest levels of ambient air pollution also tend to have lower use of clean fuel for cooking and heating, as well as weak smokefree legislation in public places, creating a triple burden of air pollution on NCDs and other conditions.

Air pollution is a significant modifiable environmental risk factor, causing an estimated 715 000 deaths in the WHO European Region in 2019 *(59)*, 80% of which were caused by ambient air pollution and 20% by indoor air pollution. The great majority of all air pollution deaths (94%) were caused by NCDs, including ischaemic heart disease, stroke, CRDs and lung cancer. As part of the 5-by-5 approach for NCDs adopted during the United Nations Third High-Level Meeting on NCDs in 2018 *(8)*, air pollution was included as a risk factor for NCDs. There are no timebound targets for air pollution, so progress is assessed by comparing WHO estimates of ambient air pollution to the WHO Air Quality Guidelines *(60)*, which specify target annual levels for exposure to $PM_{2.5}$ of 5 µg/m³, as well as interim targets of 10, 15, 25 and 35 µg/m³.

Between 2010 and 2019 air pollution from $PM_{2.5}$ decreased by 2.5% annually in the WHO European Region, with levels reaching 14.9 µg/m³ in 2019, thus achieving the interim target of 15 µg/m³ (Fig. 32). Differences in levels between country groups persisted, with the levels lowest in the EU14 at 10.9 µg/m³, followed by the EU13 at 15.8 µg/m³ and the CIS at 18.6 µg/m³ (Fig. 33). Annualized rates of decline after 2010 were comparable in the EU14 and EU13 (3.6% and 3.5%, respectively), but slower in the CIS (1.9%).

At the country level, reductions were observed in all countries, with an almost tenfold difference between the highest and lowest levels of concentration in both 2010 and 2019, and rates of decline ranging from 0.2% to 4.0% annually (Fig. A1.16). The Air Quality Guidelines target of 5 µg/m³ was not reached in any country. Three countries had levels above 35 µg/m³; five had levels at 25–35 µg/m³; 12 at 15–25 µg/m³; 17 at 10–15 µg/m³; and 16 at 5–10 µg/m³.

Fig. 32. Annual concentration of $PM_{2.5}$ in the WHO European Region (2010–2019)

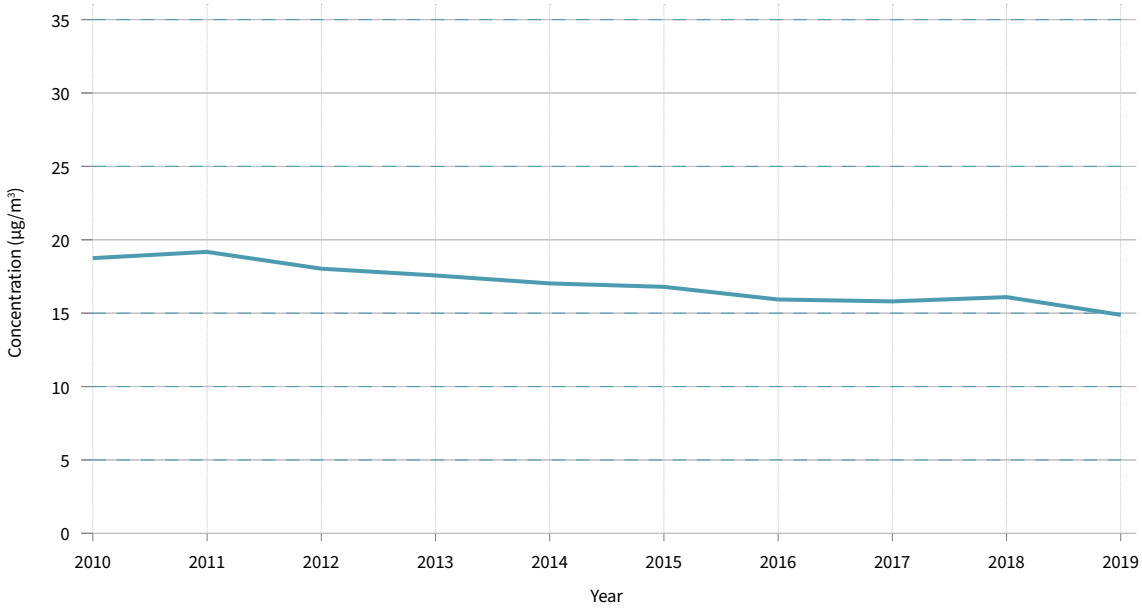
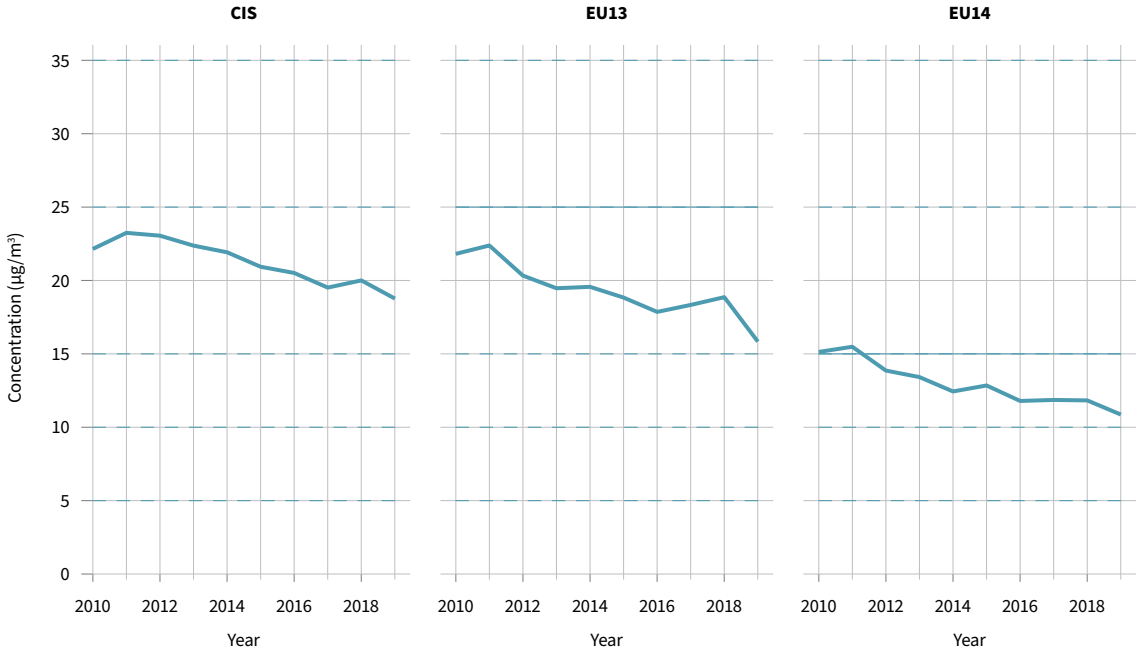


Fig. 33. Annual concentration of $PM_{2.5}$ in the CIS, EU13 and EU14 (2010–2019)



Countries with the highest concentration of ambient air pollution also tend to be the countries with the lowest use of clean energy sources for cooking and heating in households, as well as the lowest levels of implementation of smokefree policies in public spaces, thus creating the triple burden of air pollution on NCDs (Fig. 34).

Since 2010 inequalities between countries decreased, although insignificantly, with the SII decreasing from 34.0 to 28.3.

Fig. 34. Ambient air pollution and reliance on use of clean fuels for cooking (2019), by country and country group



Chapter 5. Policy response to NCDs and trends since 2021



Detailed data on the achievement of all PIs by country in 2021 and 2023 are given in Annex 3. In both years all 53 Member States of the WHO European Region responded to the NCD Country Capacity Survey *(16,61)*, demonstrating their strong commitment to the fight against NCDs.

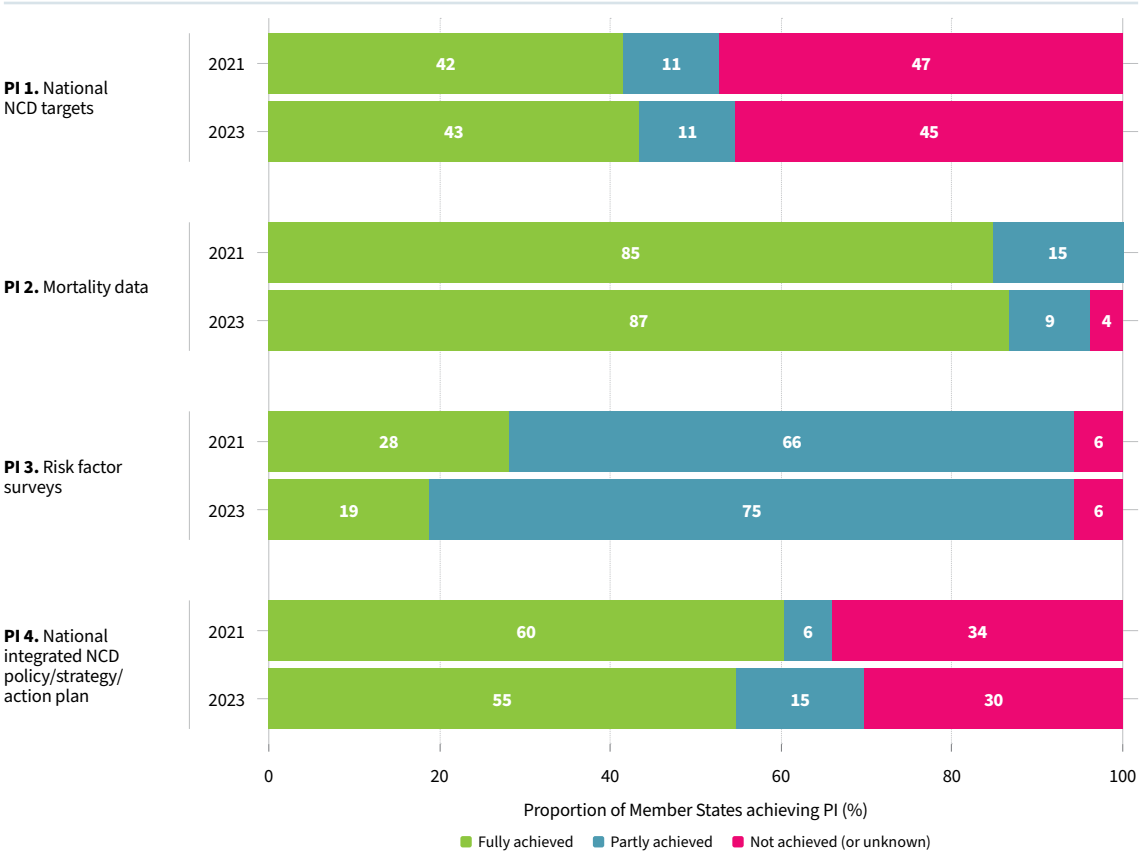
Policy initiatives are not equally effective across all issues, countries and time, and they must adapt to national contexts. PIs are therefore indicative, and they do not necessarily imply that policy action along the initiatives selected would be called for in the specific context of each country.

PI achievement by policy area

PIs related to surveillance and governance (PIs 1–4)

Levels of adoption for PIs 1–4, in the areas of surveillance and governance, were similar in 2021 and 2023 (Fig. 35). The proportion of countries that had set timebound national targets and indicators aligned with WHO guidance (PI 1), which is characterized by the inclusion of an NCD mortality indicator and either a risk factor or a health system indicator (or both), was similar in 2021 (42%) and 2023 (43%), indicating little progress. Comparable levels for full or at least partial achievement, characterized by the inclusion of less than two areas or targets that are not timebound, were observed in 2021 (53%) and 2023 (54%), also indicating little change over the two-year period. From this it can be inferred that 45% of countries had not set any NCD targets as of 2023, leaving substantial room for potential action.

Fig. 35. PIs related to governance and surveillance in 53 countries of the WHO European Region (2021 and 2023), by level of achievement



The proportion of countries with functioning systems for generating reliable cause-specific mortality data (PI 2) increased marginally from 85% in 2021 to 87% in 2023. This indicates that most countries have reached full implementation, which is characterized by timely and highly usable data. Notably, all EU Member States had fully achieved this indicator as a consequence of EU regulations on timely cause-of-death data reporting *(62)*. While this high level of implementation indicates generally strong civil registration and vital statistics systems in the Region, improvements in data quality and timeliness are still needed, as evidenced by the premature mortality analysis and data included in Annex 3.

The proportion of countries that had implemented NCD surveys (PI 3) such as WHO STEPS (STEPwise approach to NCD risk factor surveillance) *(63)* decreased for full achievement (characterized by inclusion of seven major NCD risk factors and objective measurement of weight, height, blood pressure and blood sugar in a survey in the last five years) from 28% to 19%, while the proportion of countries that had at least partial achievement (characterized by inclusion of at least three risk factors in a survey in the last 10 years) remained unchanged at 94%. As detailed in Annex 3 and previous assessments of the situation regarding NCD surveillance in the Region *(64)*, many EU countries and countries in south-eastern Europe do not implement NCD surveys at the recommended level. This is concerning, as such surveys are crucial for tracking progress towards GMF targets; quantifying detection, treatment and control gaps for NCDs such as hypertension, diabetes and obesity; and measuring UHC and planning health services. The EU has established regulations for tracking behavioural risk factors using the European Health Interview Survey *(65,66)*; these do not cover health examination surveys.

The proportion of countries that had fully reached PI 4 – having operational multisectoral national NCD strategies – declined slightly between 2021 and 2023, from 60% to 55% (full achievement being characterized by the multisectoral nature of the strategy and the inclusion of the four main risk factors and diseases). Collaborative efforts among United Nations agencies and other international partners within the United Nations Development Assistance Framework *(67)* can be instrumental in stimulating and enhancing progress towards this indicator. Therefore, it is important to systematically consider including NCDs in the United Nations framework.

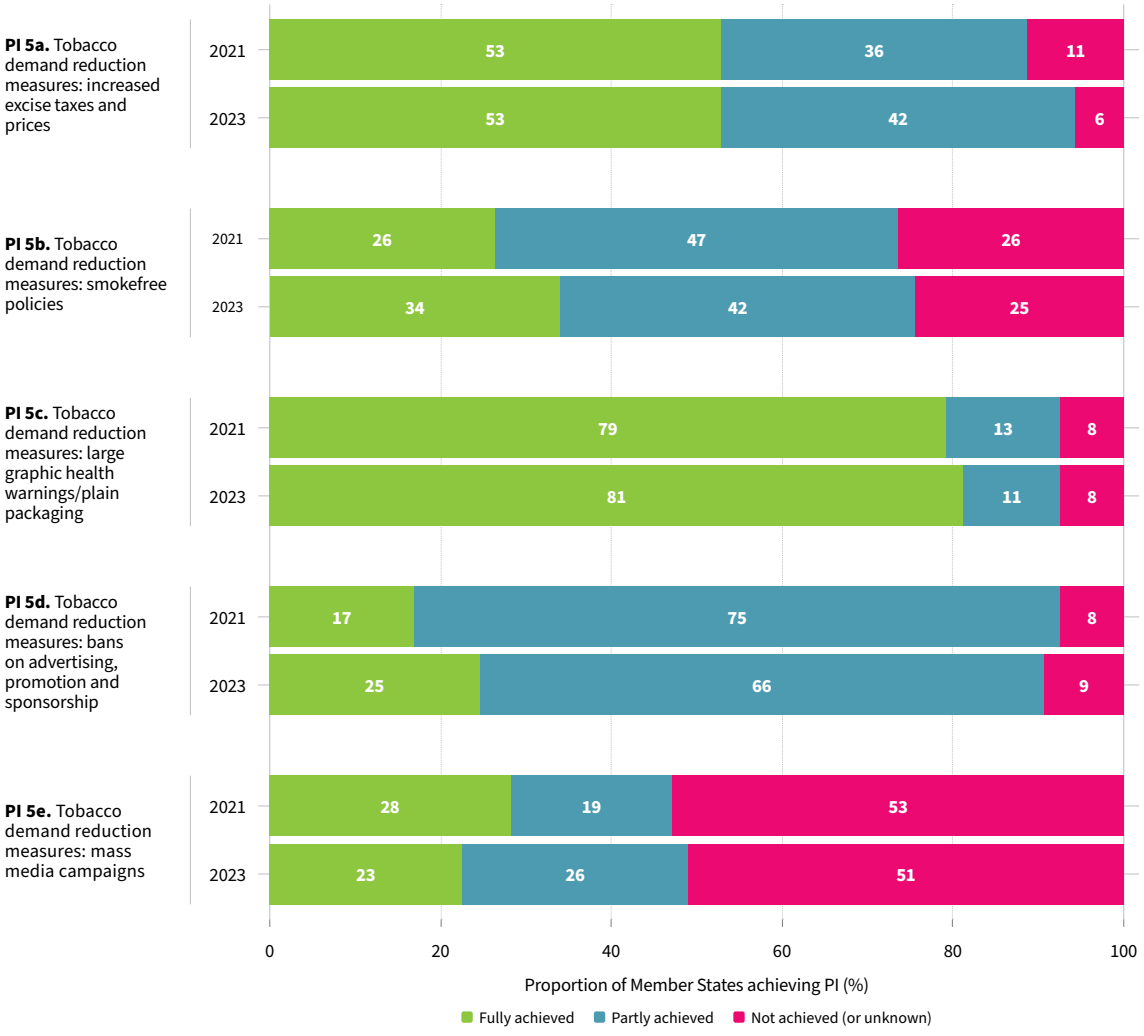
PIs related to major behavioural NCD risk factors (PIs 5–8)

An overview of PIs focusing on tobacco control is presented in Fig. 36. These five indicators (PIs 5a–e) assess the adoption of key tobacco control measures, including the reduction of exposure to tobacco smoke; reducing affordability and access to tobacco products; creating smokefree environments; banning advertising, promotion and sponsorship of tobacco products; and increasing awareness through education campaigns about the harms of tobacco use and secondhand smoke.

Improvements in full achievement were observed for smokefree environments (PI 5b), which increased from 26% to 34% between 2021 and 2023, and tobacco advertising bans (PI 5d), which increased from 17% to 25% in the same period. Full adoption of tobacco taxation (PI 5a) remained unchanged, with 53% of countries adopting tobacco excise taxes at the highest level (characterized by countries having total

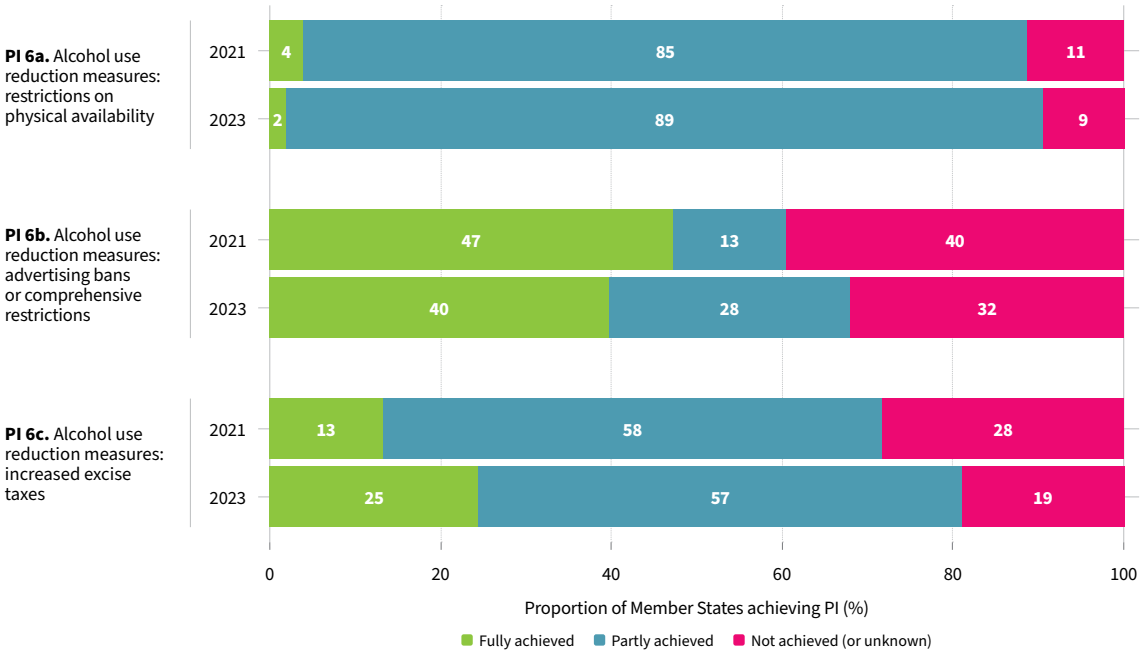
taxes set at a level that accounts for more than 75% of the retail price of tobacco products), while partial achievement increased by 6 percentage points from 36% to 42%. PI 5c, which concerns informing people of the dangers of tobacco and tobacco smoke through health warnings and mass media campaigns, exhibited the highest achievement rate, with 81% of countries achieving full compliance in 2023. EU tobacco product regulations have significantly contributed to this achievement *(68)*. In contrast, anti-tobacco mass media campaigns (PI 5e) saw a decline, with only 23% of countries fully implementing this indicator (characterized by having a campaign that includes at least seven out of eight recommended characteristics, including being aired on television and/or radio) in 2023, compared to 28% in 2021. It is concerning that over half (51%) of countries did not adopt this policy in 2023.

Fig. 36. PIs of measures to control tobacco use in 53 countries of the WHO European Region (2021 and 2023), by level of achievement



Target indicators on policy measures to control alcohol consumption involve three areas: regulations on its availability (PI 6a); restrictions and bans on its advertising and promotion (PI 6b); and pricing policies, including excise taxation (PI 6c) (Fig. 37). Of the three areas, restrictions and bans on advertising and promotion (PI 6b) had the highest adoption level (characterized by advertising restrictions on beer, wine and spirits through all channels and the existence of a detection system for infringements on marketing) in 40% of countries. Paradoxically, this indicator also showed the highest level of non-adoption (32% of countries in 2023). Full adoption of regulations on alcohol availability (2% of countries) remained at a very low level, although a clear majority of countries had partly adopted these measures. Adoption of fiscal policies demonstrated significant increase, with full adoption rates increasing from 13% in 2021 to 25% in 2023.

Fig. 37. PIs related to alcohol policies in 53 countries of the WHO European Region (2021 and 2023), by level of achievement



Six PIs focus on nutrition policies (Fig. 38 and Fig. 39). This category has undergone significant revisions, including the addition of three new indicators and updated criteria for marketing recommendations to children, which now require mandatory policies for full achievement. Previously used diet-related indicators for salt, saturated fats and trans-fatty acids have been discontinued. While direct comparisons with previous years are not possible for most indicators as a result of these changes, the shift in criteria for marketing policies allows for contextual analysis.

Fig. 38. PIs related to nutrition in 53 countries of the WHO European Region (2023), by level of achievement

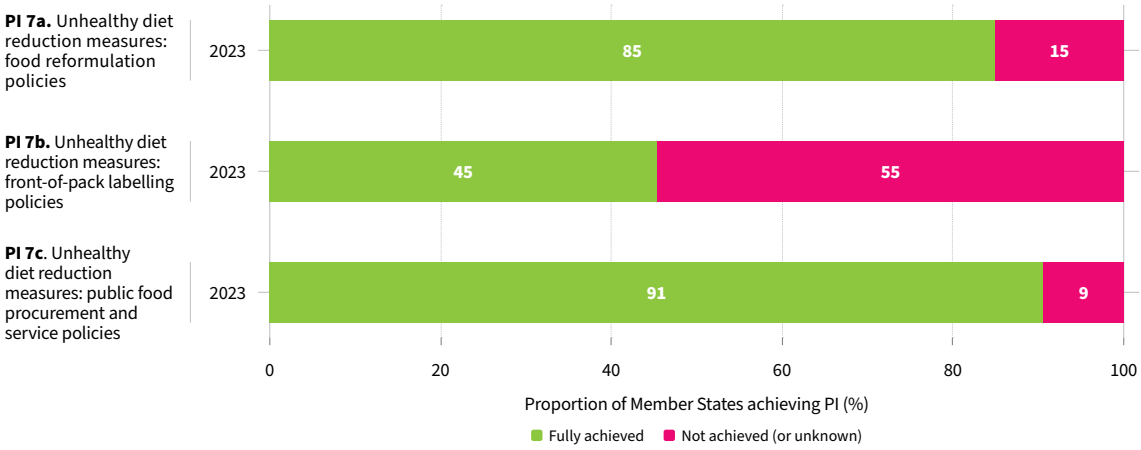
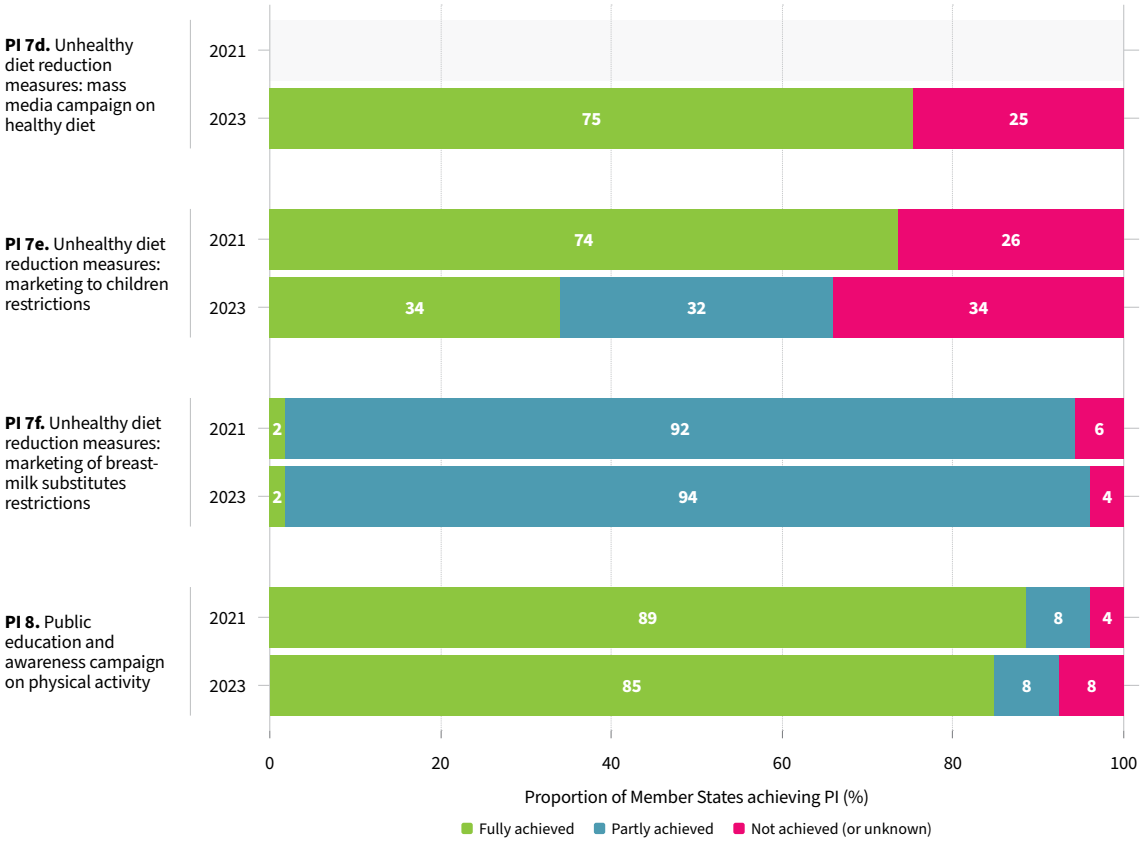


Fig. 39. PIs related to nutrition and physical activity in 53 countries of the WHO European Region (2021 and 2023), by level of achievement



The adoption of reformulated policies for healthier food and beverage products (for example, elimination of trans-fatty acids and/or reduction of saturated fats, free sugars and/or sodium) (PI 7a) stood at 85%

in 2023. Policies related to front-of-pack labelling (new PI 7b) were fully reached in 45% of countries. The highest level of adoption – at 91% – was reached for the new PI 7c, which relates to public food procurement and service policies for healthy diets (for example, reducing the intake of free sugars, sodium and unhealthy fats, and increasing the consumption of legumes, wholegrains, fruits and vegetables). PI 7d (behaviour change communication and mass media campaign for healthy diets) was also widely adopted, with a rate of 75% in the Region.

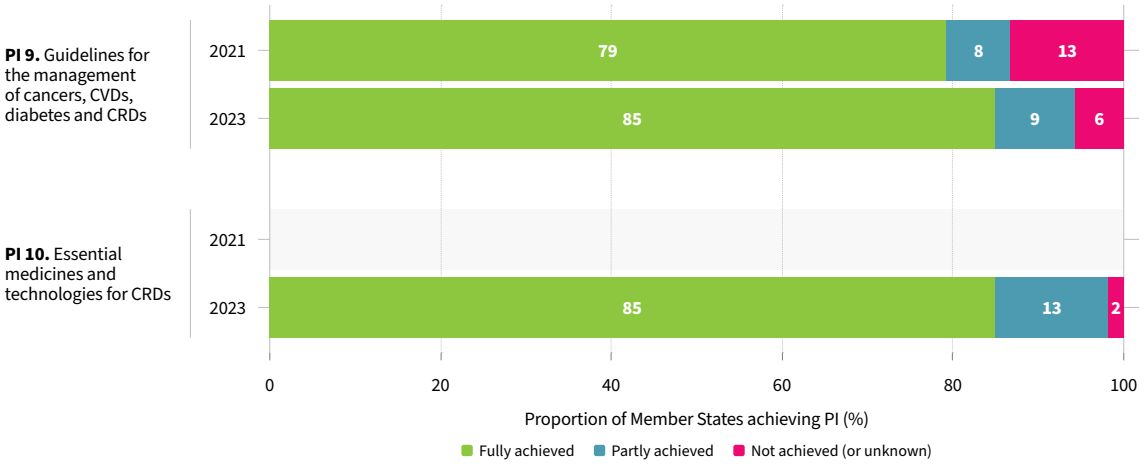
There was a decline in adopting policies to restrict the marketing of unhealthy foods and nonalcoholic beverages to children, with full adoption in only 34% of countries (PI 7e) in 2023, compared to 74% in 2021. This decrease is attributable to a change in indicator criteria, which now require mandatory policies for full achievement instead of the previous voluntary option. The apparent decline is driven by the new mandatory requirements, not a reduction in policy effort. There was no change in the adoption of legislation related to the International Code of Marketing of Breast-milk Substitutes (PI 7f) *(69)*. Despite the Code's adoption in 1981, only 2% of countries had fully adopted it, while partial adoption had increased slightly to 94%.

The proportion of countries fully reaching PI 8, calling for public awareness programmes on physical activity, declined by 4 percentage points to 85% in 2023 (Fig. 39). It is probable that widespread participation in the European Week of Sports prevented a further decline in this indicator.

PIs related to NCD management (PIs 9 and 10)

Between 2021 and 2023 there was an increase in the adoption of NCD management guidelines (PI 9). Eighty-five per cent of countries fully reached PI 9 (characterized by the existence of guidelines for all four major NCDs) in 2023, with a further 9% partly reaching it (characterized by the existence of guidelines for at least two major NCDs) (Fig. 40). Additionally, the newly introduced PI 10, measuring the availability of CRD-related drugs and tests (namely, steroid inhaler, bronchodilator inhaler and peak flow measurement), showed strong results, as 85% of countries fully reached this indicator (characterized by general availability of two medicines and one technology in the public sector), with a further 13% partly reaching it.

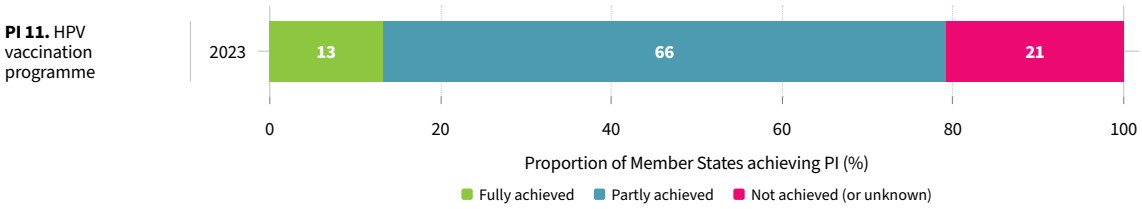
Fig. 40. PIs related to NCD management in 53 countries of the WHO European Region (2021 and 2023), by level of achievement



PI related to vaccination against human papillomavirus programme (PI 11)

A new PI 11 has been introduced to assess inclusion of the human papillomavirus (HPV) vaccine in the national vaccine schedule and vaccination coverage (Fig. 41). Full achievement of PI 11 requires HPV vaccination (1–2 doses of vaccine for 9–14-year-old girls), inclusion in the national immunization programme, and coverage of at least 90%. Partial achievement indicates that HPV vaccination is included in the national programme with coverage of 10–90%. This indicator is considered to be not reached if either (i) HPV vaccination is absent from the national programme or (ii) HPV is included in the national programme but coverage remains below 10%. In 2023 only 13% of countries had fully reached the indicator, while the majority (66%) had partly done so. Notably, 21% of countries had not reached PI 11 to any degree.

Fig. 41. PI related to HPV vaccination in 9–14-year-old girls in 53 countries of the WHO European Region (2023), by level of achievement



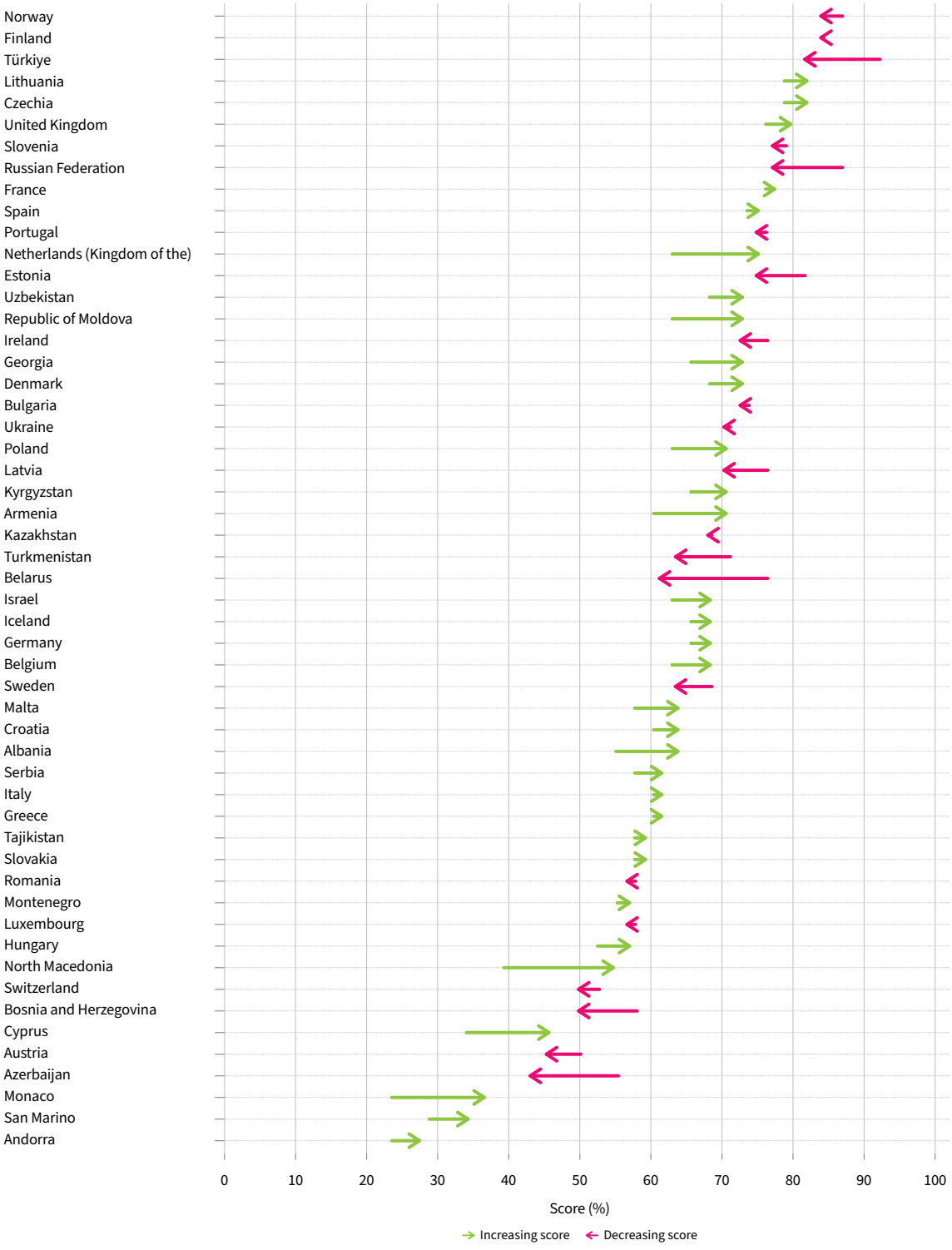
Progress by country

On average, countries had fully reached 49% of PIs by 2023, and 32% had partly done so. This indicates that, after 2021, there was a 1 percentage point increase in full achievement, while partial achievement remained unchanged.

Reaching of PIs and changes between 2021 and 2023 by country are given in Fig. 42. A total of 32 countries (60.4%) showed an increase in their score; 21 (39.6%) saw a decline in their score.[7] North Macedonia saw the most significant change with a 15.1% increase in PI score, followed by Monaco (12.7%). Netherlands (Kingdom of the) (11.8%), Cyprus (11.2%), Armenia (9.9%) and the Republic of Moldova (9.6%) also demonstrated substantial increases. In 2023, 45 countries (84.9%) achieved a PI score exceeding 50%, while a smaller group of five countries (9.4%) surpassed the 80% mark. The top 10 countries by score were Norway, Finland, Türkiye, Lithuania, Czechia, the United Kingdom, Slovenia, the Russian Federation, France and Spain. All these countries demonstrated scores above 70%. Most of the countries showing low reaching of PIs were small countries, countries in south-eastern Europe or CIS countries.

7 The PI score is calculated as follows: for each indicator, a value of 1 is assigned if fully achieved and 0.5 if partly achieved. The average PI score is derived by summing these values across all indicators and dividing by the total number of indicators.

Fig. 42. PI score achieved by countries in 2021 and 2023, and change in score over this period



Comments on PI trends

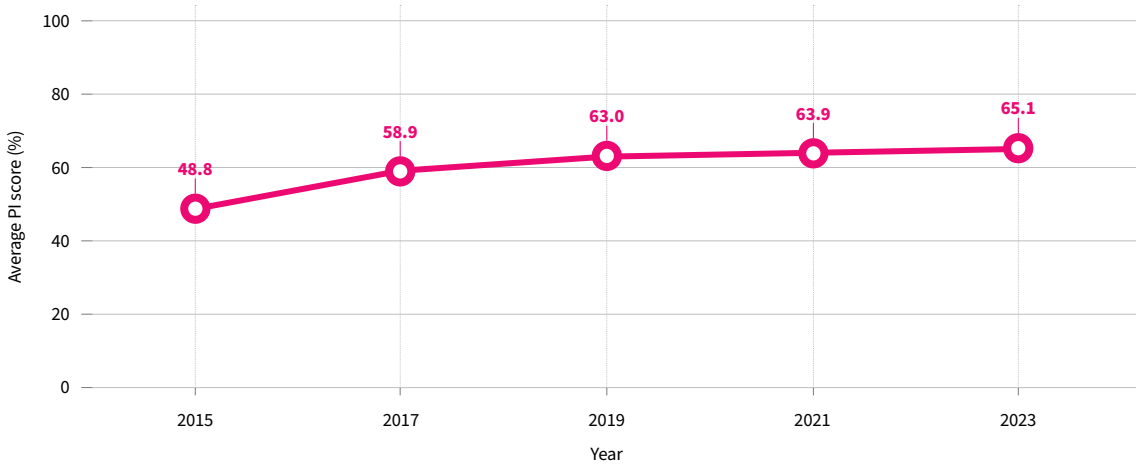
As mentioned, PIs underwent significant changes in 2023, which poses challenges in comparing data over time. Given that there was almost no change between 2021 and 2023, there are still significant opportunities to consider policy responses to NCDs at the country level. The partial reaching of PIs remained high. It is essential to emphasize that the existence of policy is just the first step. Effective adoption of policies, including enforcement and monitoring, is crucial if desired outcomes are to be achieved.

In this regard, economic and political unions such as the EU and the Eurasian Economic Union can significantly influence NCD policy adoption and implementation. These unions have demonstrated positive impacts in areas such as cause-of-death data, tobacco control, physical activity campaigns and NCD management.

The level of policy adoption varies widely across different NCD areas, with alcohol policies lagging behind. Advancing PIs requires varying degrees of effort, and indicator criteria often lack consistency.

Long-term trends in reaching PIs show significant changes. After the adoption of PIs following the 2014 United Nations High-Level Meeting on NCDs, the average PI score rose sharply between 2015 and 2017 (Fig. 43). However, the increase in 2019, after the 2018 High-Level Meeting, was smaller, at only 4 percentage points. Following the onset of the COVID-19 pandemic in 2020, levels largely stagnated, with only marginal improvements by 2023. Despite this overall plateauing, some differences by area are notable: between 2019 and 2023 the adoption of multisectoral action plans and the implementation of health examination surveys declined, while guidelines for managing common NCDs in primary care saw significant improvements.

Fig. 43. Average PI score in the WHO European Region (2015–2023)



Chapter 6. Discussion and conclusion



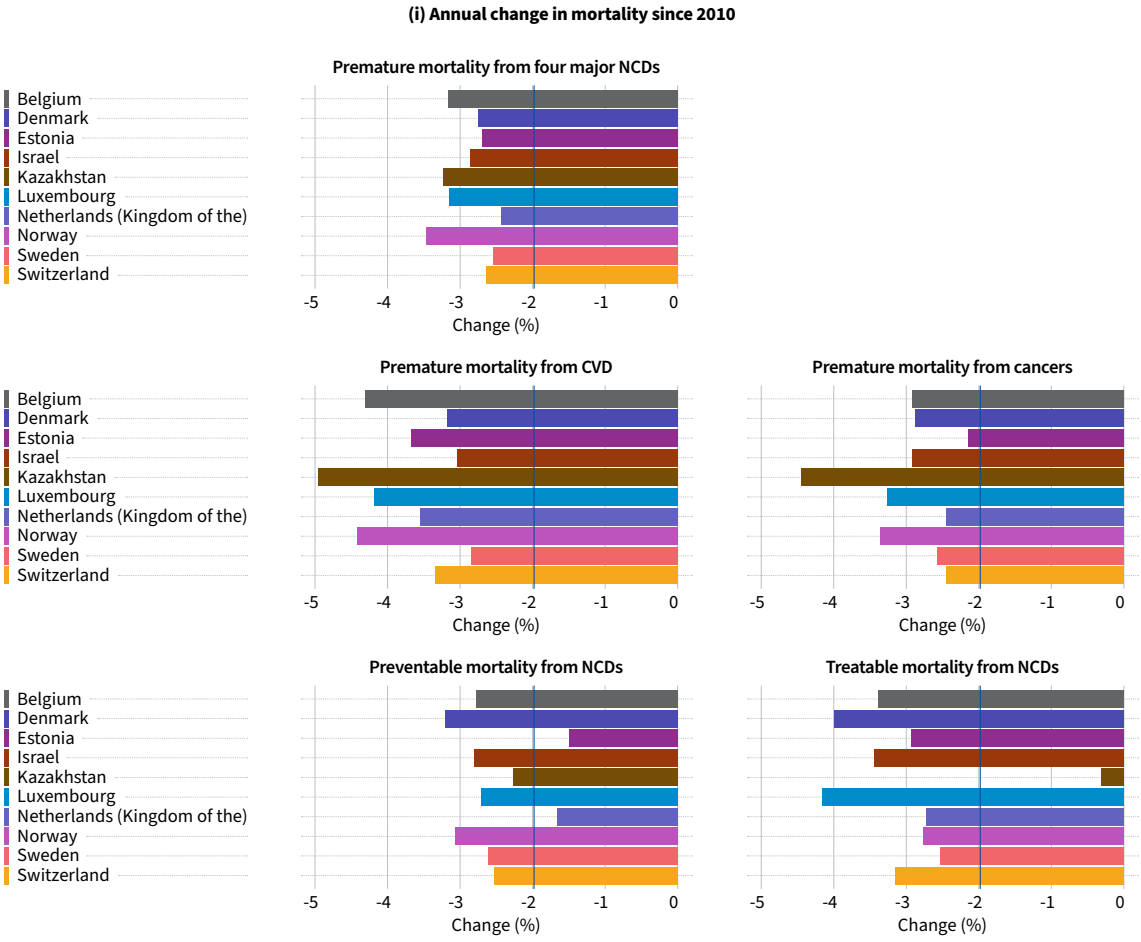
Lessons from leading countries

There is reason to be hopeful and there are lessons to be learned from the 10 countries that have achieved the EPW target of a 25% reduction in premature mortality from NCDs between 2010 and 2025 ahead of the deadline (Fig. 44) *(10)*. To achieve this target, an annual reduction of at least 2% is required. Of these 10 countries, four are also on track to achieve the ambitious SDG target of a one-third reduction in premature mortality from NCDs between 2015 and 2030.

Notably, these 10 countries shared the following:

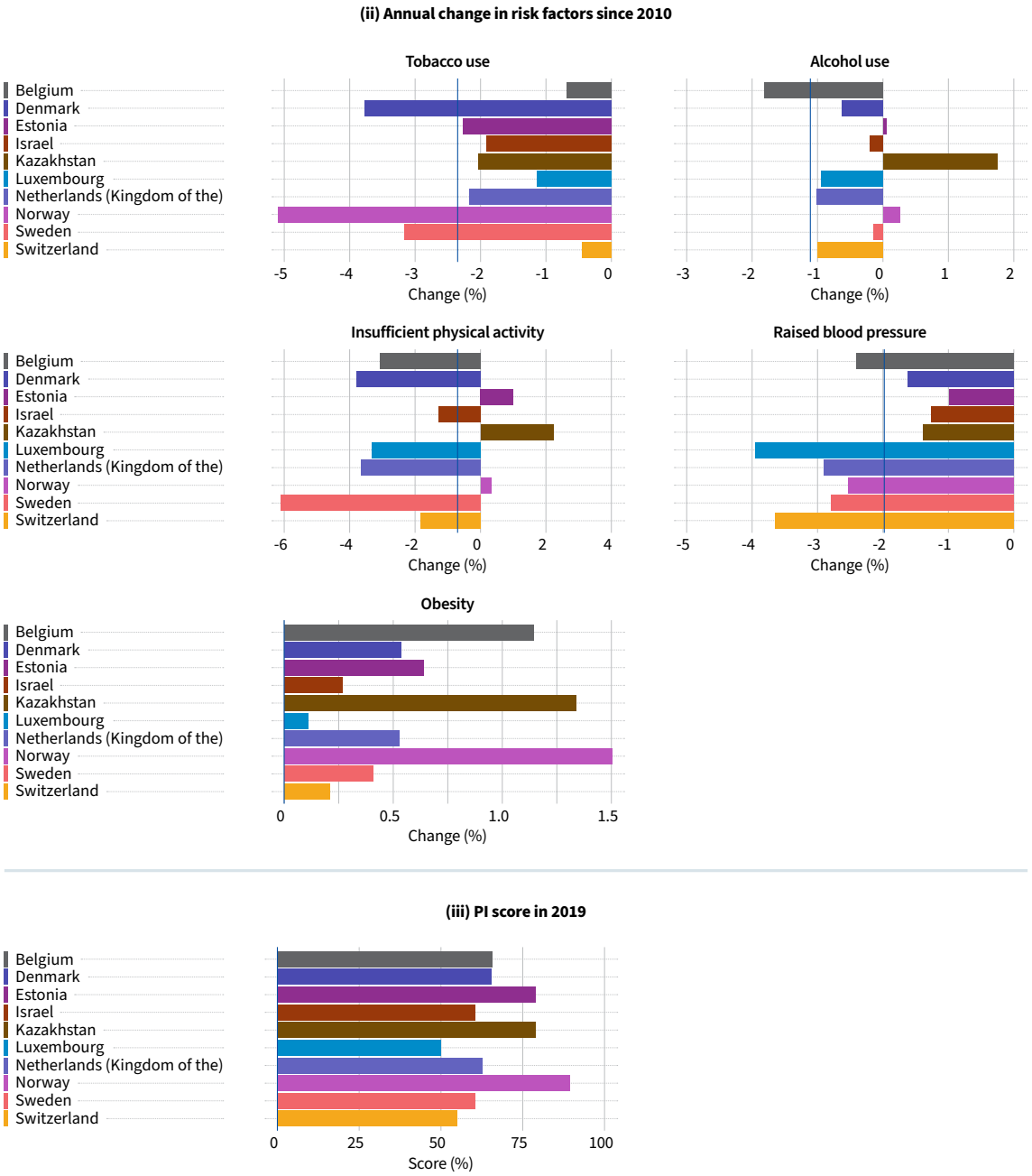
- they implemented comprehensive packages of WHO best buys and other recommended policies *(17,18)*, as indicated by high PI scores;
- they decreased prevalence of multiple risk factors and strengthened health systems response to NCDs, as indicated by a reduction or slower rise in risk factor levels and substantial reductions in mortality from both preventable and treatable NCDs (most by more than 2% per year); and
- they substantially reduced premature mortality from both CVD and cancers (most by more than 2% per year).

Fig. 44. Performance of 10 countries achieving EPW target ahead of the 2025 deadline: (i) annual reduction in premature, preventable and treatable mortality from NCDs (since 2010); (ii) annual reduction in selected risk factors (since 2010); and (iii) PI score (2019)



Note: the blue vertical line on each chart indicates the annual reduction required to meet the EPW/GMF target.

Fig. 44 (contd)



It is encouraging to see that countries from all corners of the WHO European Region are succeeding in achieving this target of a 2% annual reduction. Many of the 10 countries already had relatively low levels of mortality in 2010, which shows that it is possible to achieve ambitious targets even with a relatively low baseline level of premature mortality when cancers are the main cause of such mortality.

Towards 2030 and beyond

Moving forward, a dual-track approach is required both to accelerate collective action to deliver public health gains by 2030 (RACE to the Finish) and simultaneously to advance the key generational shifts required to achieve sustainably healthier environments and communities (Vision 2050). These two approaches underpin the WHO Regional Office for Europe's dual-track strategy on NCDs *(70)*.

Looking beyond 2025

With key frameworks (EPW, GMF and EAP) having expired in 2025, it is important to revisit the targets for mortality, risk factors and policies to ensure accountability and reporting of progress beyond 2025. In light of the unanimous adoption of the Second European Programme of Work 2026–2030 (EPW2) *(71)*, this is an opportune moment to consider new NCD-related targets for 2030 and beyond. In accordance with the initial considerations in developing the GMF, it is proposed to set ambitious but achievable targets based on current trajectories *(72)*. However, given the substantial gap between the most recent data and the target line, it appears that the quantifications initially chosen for risk factors in the GMF – which were based on past trajectories of a small number of best-performing countries – are too ambitious *(72)*.

A more comprehensive analysis of possible indicators and quantification of timebound targets is beyond the scope of this report. However, considering the results of the best-performing tertile of countries in the WHO European Region since 2010, and provided that there is strong political commitment to addressing NCDs and mental health and well-being by a majority of countries and civil society accompanied by increased investment, the timebound targets for risk factors shown in Table 1 could be considered for 2030 within EPW2, with 2019 pre-pandemic levels as baseline. For prevalence of obesity and diabetes, this approach would result in an increased target, which does not align with public health principles. Therefore, no increase is proposed for those two indicators, recognizing that the proposed target is much more ambitious than for other indicators. New targets are not proposed for alcohol use and insufficient physical activity, as targets are already available for 2030. The updated road map for an enhanced global response to the adverse health effects of air pollution (2025–2030), adopted at the 78th World Health Assembly in May 2025, enables the health sector to take a leading role in raising awareness of the impacts of air pollution on health and of opportunities for public health and sets a voluntary target of a 50% reduction in the population-attributable fraction of mortality from anthropogenic sources of air pollution by 2040, relative to 2015 baseline values.

Table 1. Annual changes for top tertile of best-performing countries and proposed targets for the WHO European Region (2019–2030)

	Annual change for tertile of best-performing countries (%)	Proposed target 2019–2030 (rounded) (%)
Raised blood pressure	−1.71	−17
Tobacco use	−2.11	−21
Obesity	0.82	No increase
Diabetes	1.35	No increase

The current level of premature mortality from four major NCDs in the WHO European Region is 15%. At this level, cancers start replacing CVD as the leading cause of premature death. As reductions in mortality from cancers have been slower than from CVD, this implies that it may be more difficult to sustain the current pace of reduction in the future when the share of cancer deaths becomes larger than the share of CVD deaths, especially in the longer term.

For EPW2, the current EAP target of a one-third reduction in premature mortality from four major NCDs between 2010 and 2030 is proposed. Although the Region is not currently on track to achieve this target, the lag to the target line is relatively small at 0.7 years.

Moving beyond targets focused on reduction of levels of premature mortality, the simultaneous reduction of between-country inequalities – so-called upward convergence – should be considered as a principle and goal for a renewed set of WHO European Region NCD targets. Inequalities within countries can be monitored using existing survey data and linked data for civil registration and vital statistics – additional data are not required *(73)*.

Improving reliability, quality and timelines for data is essential to increase precision and usefulness of NCD-related estimates of mortality, morbidity and risk factor trends. To this end, the following steps are needed: (i) increased investment in health examination surveys (only 19% of countries have implemented surveys for all major biological risk factors in the last five years); (ii) improved quality of cause-of-death data, especially in the 13% of countries with low-quality data; and (iii) increased use of data from health services, especially electronic health records, to monitor clinical outcome and quality of care.

WHO European Region policy context and implications

PIs are based on the WHO NCD best buys – interventions with cost-effectiveness ratios of 100 international dollars or less per healthy life year gained in low-income and lower-middle-income countries *(17,18)*.[8] Of over 90 interventions considered and 22 overarching/enabling policy actions, only 28 met this criterion and are consequently considered best buys and included as PIs.

This has important consequences. First, interventions without evidence of sufficient cost-effectiveness in low- and middle-income countries are not included in the WHO best buys and consequently in the established PIs. Second, cost-effectiveness in high-income or upper-middle-income countries is not taken into consideration. In the WHO European Region, only three countries are classified as low-income or lower-middle-income countries, with 69% of countries classified as high-income countries. Therefore, there are additional interventions that would be assessed as very cost-effective in high-income and upper-middle-income countries and should therefore be considered in the WHO European Region. Third, a considerable number of interventions, especially newer interventions, have not yet been assessed for cost-effectiveness.

The suite of recommended WHO European Region policy options for prevention and treatment of NCDs should therefore go beyond the existing PIs. Consideration should be given, as appropriate,

8 The international dollar is a hypothetical unit of currency that has the same purchasing power parity that the US dollar had in the United States at a given point in time.

to additional indicators for coverage and effectiveness of interventions for the management of treatable NCDs such as acute CVD events, hypertension, diabetes and some cancers, while taking into account new developments and emerging threats related to NCDs, such as novel tobacco and nicotine products *(74,75)* and digital marketing of unhealthy commodities *(76)*. Given the significant differences in levels and trajectories of premature mortality and risk factors between men and women, a gender-sensitive approach should also be considered *(77–79)*.

Lastly, PIs lack a measure of policy enforcement. Policy enforcement varies widely between countries and, without it, policies are ineffective in achieving the desired target *(80)*. It is therefore proposed that a set of NCD policy scores should be developed for the WHO European Region; these should encompass the aforementioned elements as far as possible, and there should be periodic reporting to increase accountability.

RACE to the Finish: accelerating progress towards 2030

The time left to achieve the NCD-related SDGs is growing short, and extra efforts and innovation are required. In the last five years of the SDG era, it is imperative that countries accelerate implementation of interventions that can move the whole European Region forward by 2030.

Furthermore, it is necessary to harness and institutionalize innovation for NCD prevention and control. There are many good-practice examples in the area of innovation in the WHO European Region *(81)*, and the Strategy for Harnessing Innovation for Public Health in the WHO European Region 2025–2030 provides a comprehensive strategic framework and contributes to the creation of an innovation ecosystem across the Region *(82)*.

Vision 2050: shaping a more NCD-resilient future

As these efforts accelerate progress towards 2030, work must also be undertaken in parallel to allow more fundamental, long-term, generational shifts that will make the WHO European Region more resilient to NCDs, carbon-neutral, safe, at peace and food-secure. Powerful global megatrends – demographic shifts, climate change, technological disruption, urbanization and globalization – are transforming our lives, impacting public health and putting increased pressures on health systems. This context requires that substantial attention should be given to tackling the commercial factors of NCDs and their impact on the NCD epidemic; dealing with NCDs in emergencies and humanitarian settings; and addressing the linkages between NCDs and the climate crisis.

Post pandemic, countries cannot deal with health issues in isolation. NCDs are deeply interconnected with the rising global megatrends, requiring an integrated policy response *(71)*. Climate change and environmental factors exacerbate NCD risks through air pollution, heat stress and unsustainable food systems, necessitating green and health-conscious policies. At the same time, drivers of NCD risk factors and the health sector also contribute to the climate crisis: it has been estimated that food systems are responsible for 26% of greenhouse gas emissions *(83)* and health-care systems for an additional 4–5% *(84)*. Demographic shifts demand stronger NCD prevention and control across the life-course to ensure that lives lived longer are lived in good health, and this in turn can reduce strain on health and social care

systems. For example, up to 45% of dementia cases can be prevented or delayed through prevention of NCD risk factors *(85)*. As mentioned before, healthier populations will increase resilience and health security. Further, emergency preparedness must plan for and take account of the care of people living with NCDs, as disruptions in care for NCDs and mental health conditions increase morbidity and mortality during pandemics and disasters. Addressing NCDs and mental health conditions holistically will enhance resilience, sustainability and population well-being.

Many United Nations agencies and supranational organizations, including the EU, the Organisation for Economic Co-operation and Development, the CIS and the Eurasian Economic Union, play an important role in the response to NCDs, galvanizing action to tackle NCDs, especially through prevention. The current EU Commission's focus on strengthening comprehensive NCD prevention policies across the life-course and its determination to tackle CVD in addition to cancers are exemplary steps in this direction *(86,87)*. The comprehensive work undertaken in this regard by two EU-funded joint actions, JA PreventNCD (Joint Action Prevent Non-Communicable Diseases) *(88)* and JACARDI (Joint Action on CARdiovascular diseases and DIabetes) *(89)*, working closely with the WHO Regional Office for Europe, represents a major step forward in shaping innovative practices. In alignment with EU priorities, tackling NCDs will play a key role in improving competitiveness by increasing human capital and decreasing cost *(90,91)*.

Conclusion

This report gives a sobering update of NCD trends in the WHO European Region, with mixed results among countries. Although the WHO European Region as a whole has to improve further their prevention efforts to achieve the agreed targets, some progress has been made, giving grounds for hope.

Fig. 45. Overview of findings

	Mortality			Risk factors						
	Premature NCD mortality		Self-harm	Alcohol use	Tobacco	Physical activity	Obesity	Raised blood pressure	Diabetes	Air pollution
	EPW	SDG								
On target/on track	No	No	Yes	Yes	No	No	No	No	No	No timebound target
Trend	Down	Down	Down	Down	Down	No change	Up	Down	Up	Down
Regional delay (years) or % from baseline	0.7	2.1	-1.2	-0.5	4.8	11.1	13.4%	0.5	26.1%	Not applicable
Countries on track	26/51	22/49	30/49	14/54	12/49	23/52	3/51 (two statistically significant)	16/51	9/51 (two statistically significant)	No country meeting AQG
Inequalities	Decreased	Decreased	Decreased	No change	Increased	No change	Increased	Increased	Increased	Decreased

Note: AQG: Air Quality Guidelines

Most importantly, 10 countries have achieved a 25% reduction in premature mortality from NCDs since 2010, ahead of the 2025 deadline. These countries demonstrate that, with strong leadership, achieving ambitious targets is possible: if concerted action is taken to step up both prevention and control of NCDs, and if action is taken to address both cancers and CVD, by implementing comprehensive evidence-informed policies to reduce multiple risk factors across the life-course and strengthen the health systems response to NCDs. While primary health care is the cornerstone of health systems, strengthening the health systems response to NCDs across the full continuum of care is vital: from prevention and health promotion, through primary, secondary and tertiary care, to rehabilitation and palliative services, while remaining ever vigilant to ensure person-centred care.

Collective effort is required to create an upward convergence in NCD outcomes, reducing the burden and reducing inequalities *(73)*. To succeed in this, the commercial and digital factors affecting NCDs and the social and environmental determinants of NCDs must be addressed *(92–98)*. This requires a multisectoral whole-of-society and whole-of-government approach, and civil society needs to be strengthened and actively involved through a co-creation process. Responding to the complex needs of individuals and systems requires comprehensive and integrated approaches that put people at the centre of the process.

Strengthening NCD prevention and control is also a prerequisite for achieving UHC. NCDs and mental health issues are the main cause of ill health, and disaggregation of the UHC service coverage index shows that the NCD subindex has both the lowest values and the lowest rates of improvement *(99)*. In addition, catastrophic health spending is driven by out-of-pocket payments for outpatient medicines and medical products, mostly for NCDs, other chronic diseases and dental care. Therefore, to achieve UHC, NCD prevention and control measures must be strengthened. Decisive action is needed in order to reduce avoidable mortality and disability.

There is an opportunity to learn from the permacrisis and to craft a WHO European Region response to NCDs that takes into account the rising megatrends. The adoption of EPW2 offers a unique opportunity to strengthen the WHO European Region's response to NCDs – to include action on climate change, demographic shifts and commercial factors affecting health, while putting the right to health and health equity at the core of the NCD response. Tackling NCDs and the drivers of ill health, living and ageing in good physical and mental health, addressing climate change, devising the health systems of the future and maximizing health security have been identified as the priorities for action in EPW2. Achieving progress towards these priorities and our common goals will require collective action, innovation, renewed political will and increased implementation of effective policies. This report provides valuable insights that will help countries and stakeholders to reflect and learn both from the past and from one another to inform actions.

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Annexes



Annex 1. Supplementary figures illustrating country-specific data

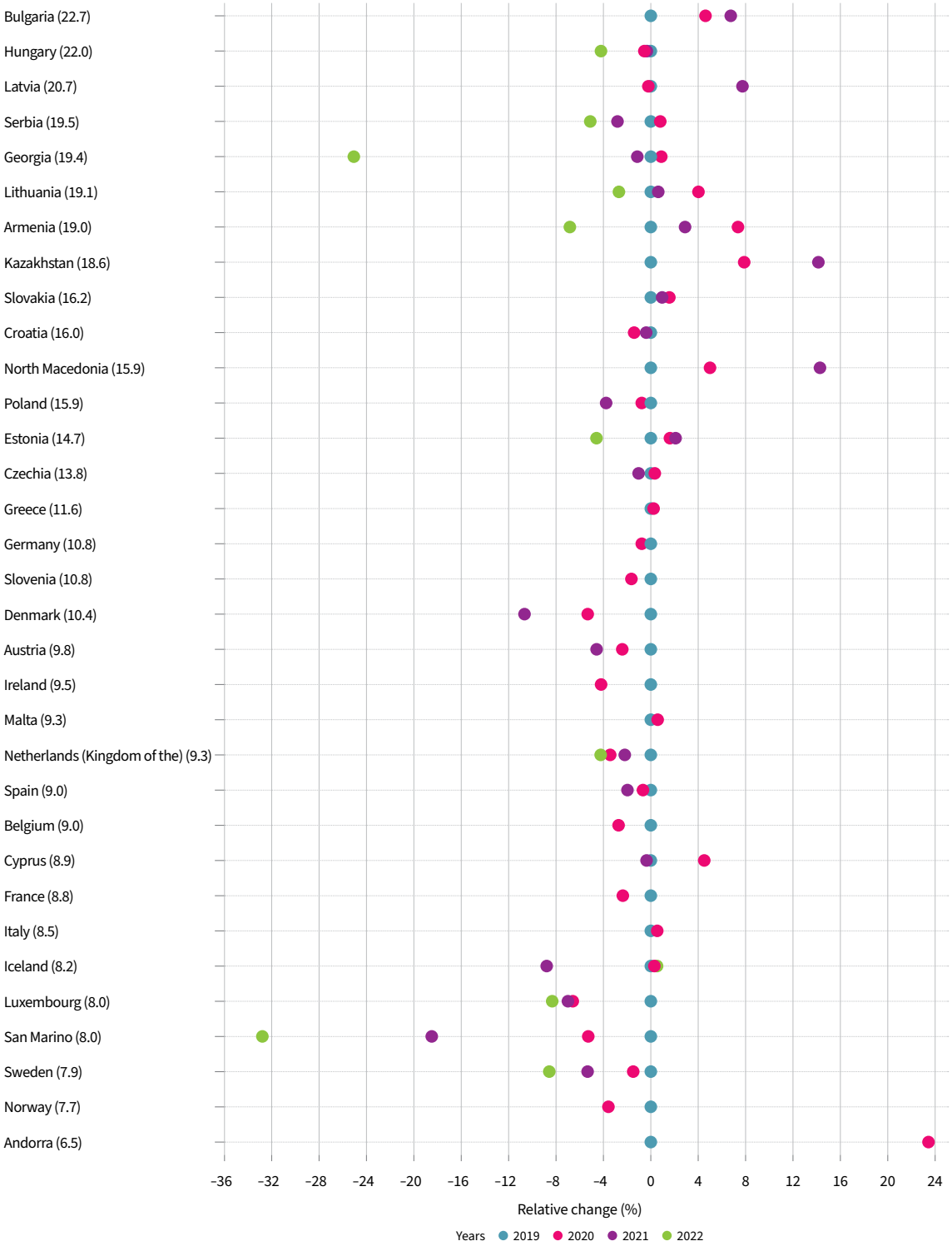
This annex presents supplementary country-specific figures on premature, preventable and treatable mortality from noncommunicable diseases (NCDs) (Figs A1.1–A1.7), the cost of productivity loss due to avoidable mortality from NCDs (Fig. A1.8), mortality from suicide and self-harm (Fig. A1.9), and NCD risk factors (Figs A1.10–A1.16).

Fig. A1.1. Country-specific unconditional probability of dying between ages 30–69 from four main NCDs (1990–2021 or last available year), including premature mortality targets (2010–2030), by sex



Note: EAP: European Action Plan; EPW: European Programme of Work 2020–2025; GAP: Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020.

Fig. A1.2. Relative change in premature mortality from four major NCDs (2019–2022), by country[a]

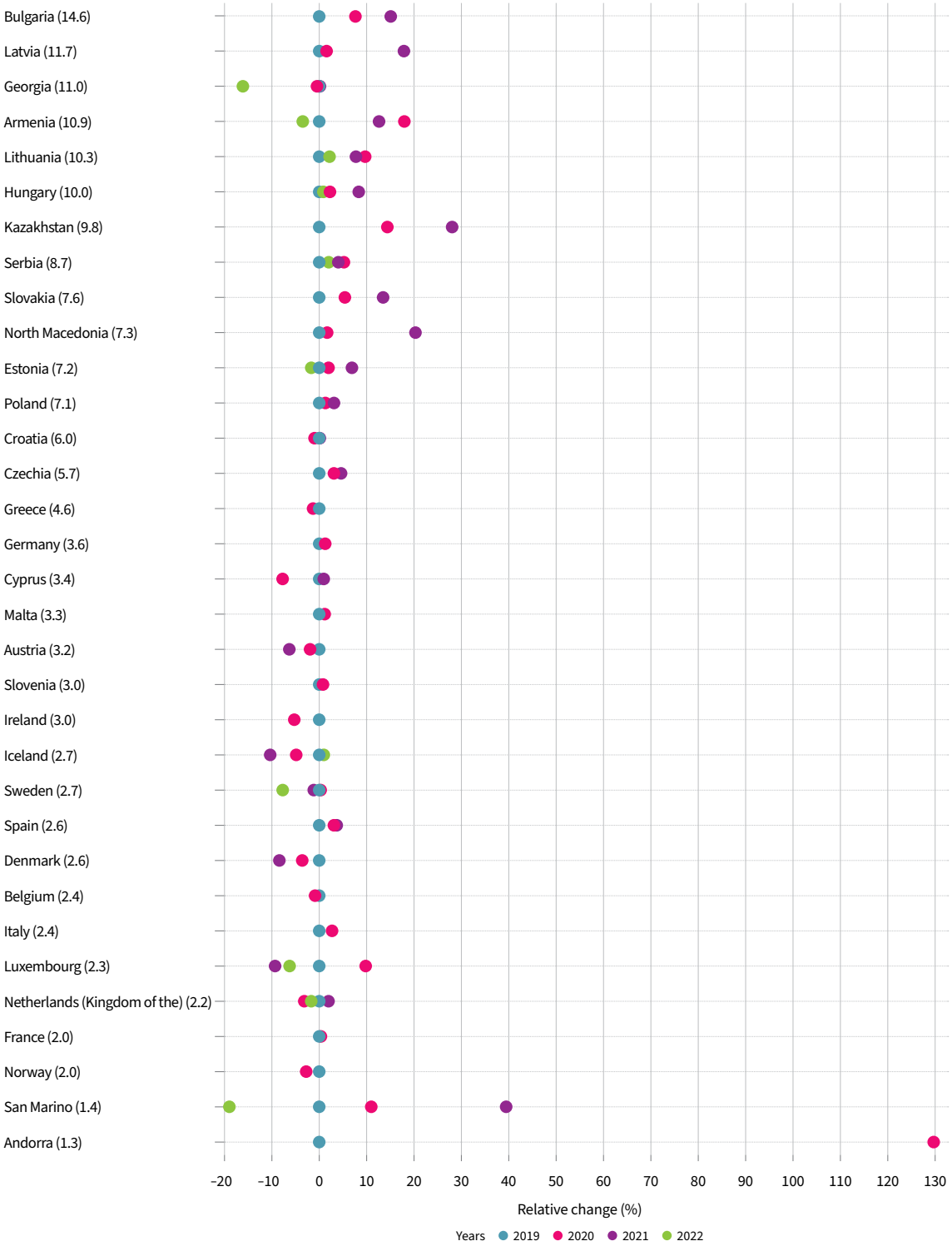


[a] Countries are ranked by level of premature mortality in 2019; values (in percentage points) are given in brackets after the country name.

Fig. A1.3. Country-specific trends in unconditional probability of dying between ages 30–69 from cardiovascular diseases, cancers, chronic respiratory diseases and diabetes (1990–2022)



Fig. A1.4. Relative change in premature mortality from cardiovascular diseases (2019–2022), by country[a]



[a] Countries are ranked by level of premature mortality due to cardiovascular diseases in 2019; values (in percentage points) are given in brackets after the country name.

Fig. A1.5. Country-specific preventable mortality from NCDs (2000–2022), by sex

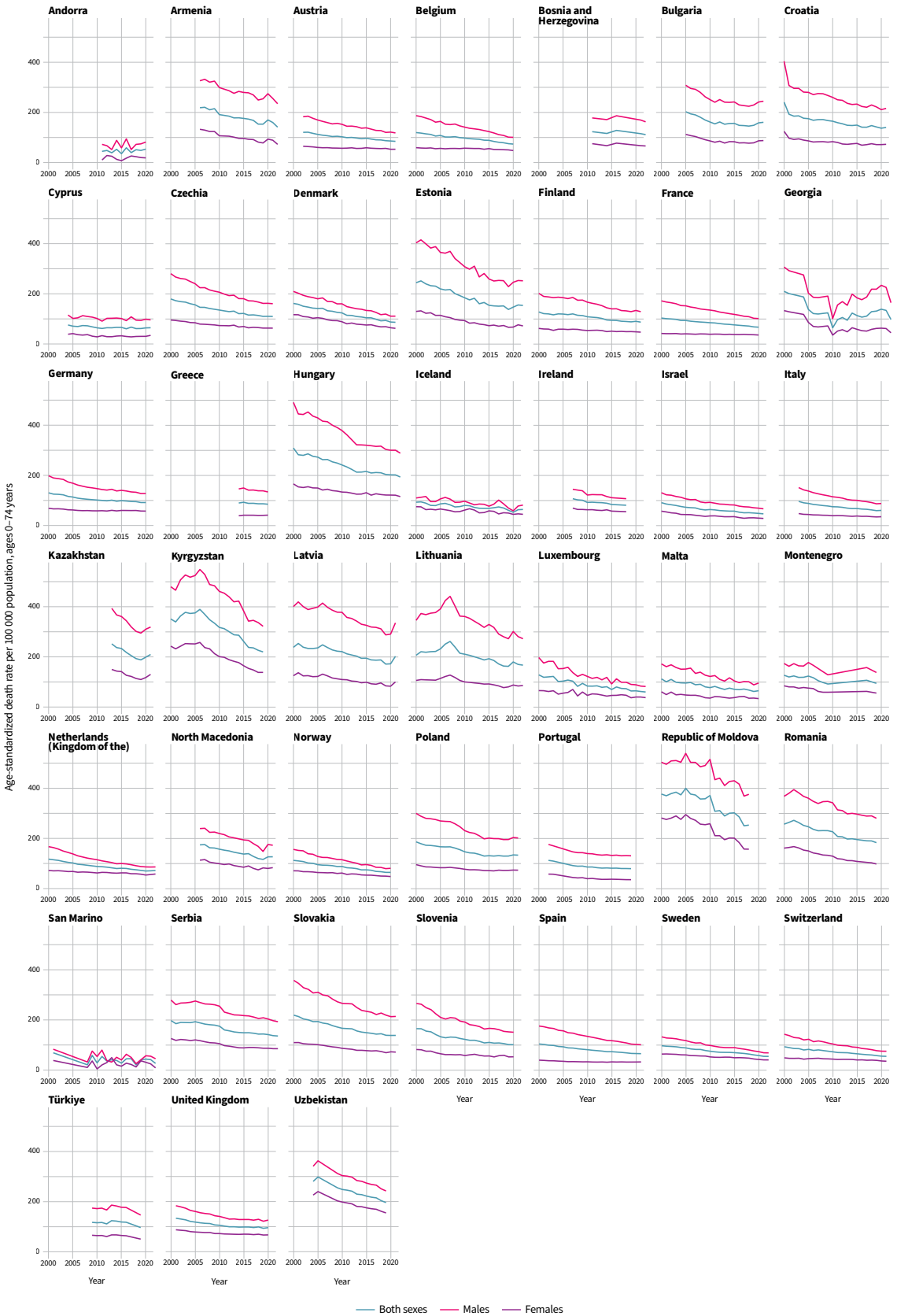


Fig. A1.6. Country-specific treatable mortality from NCDs (2000–2022), by sex

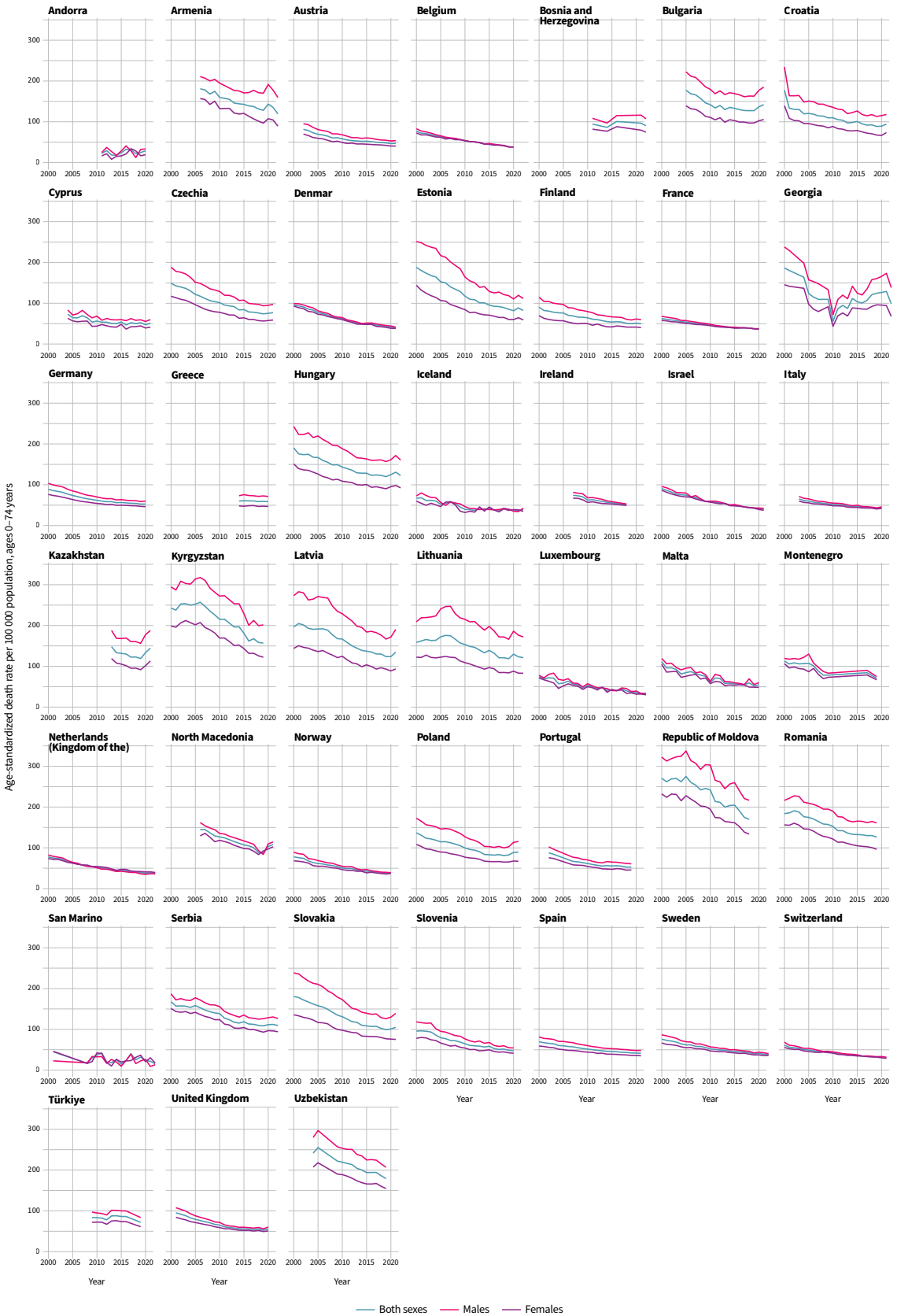
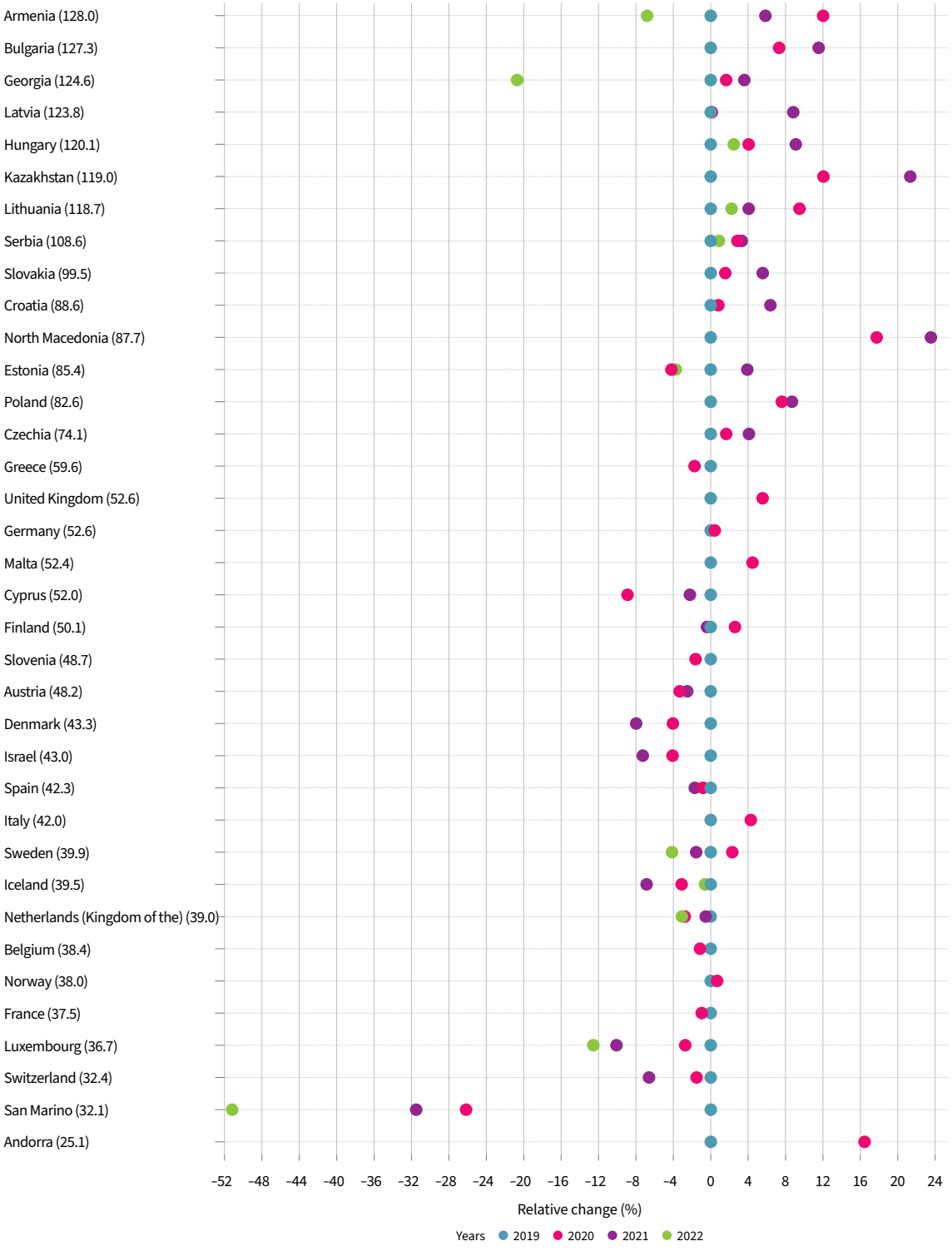


Fig. A1.7. Relative change in treatable mortality from NCDs (2019–2022), by country[a]



[a] Countries are ranked by level of treatable mortality in 2019; values (in percentage points) are given in brackets after the country name.

Fig. A1.8. Cost of productivity loss as a share of gross domestic product per capita in the WHO European Region, by country, latest available year

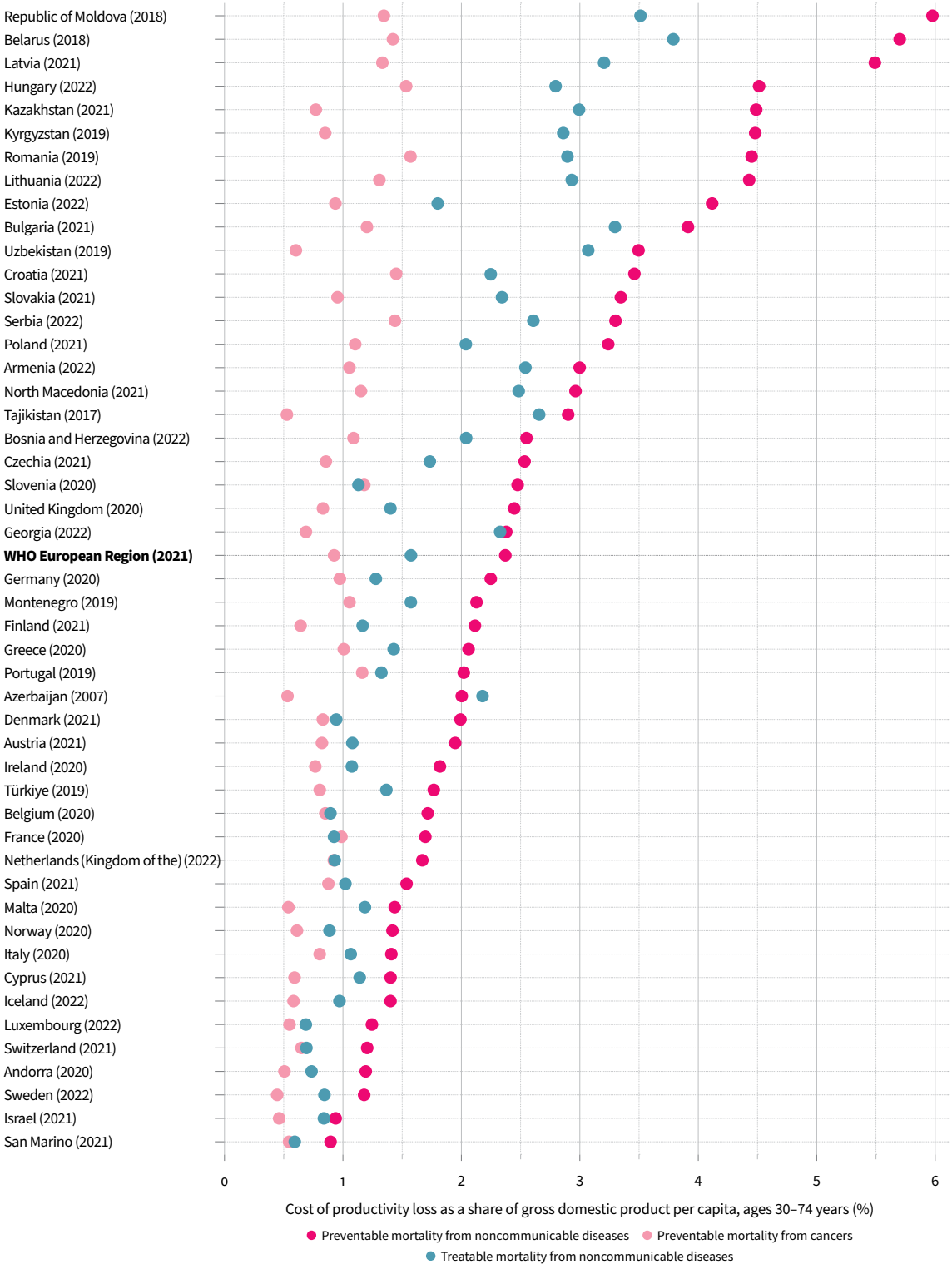


Fig. A1.9. Country-specific age-standardized death rates from suicide and intentional self-harm per 100 000, all ages (1990–2021 or last available year), including target line (2015–2030)



Fig. A1.10. Country-specific age-standardized prevalence of current tobacco use in the population aged 15 and over (2000–2022), including target lines (2010–2025), by sex



Fig. A1.11. Country-specific total alcohol per capita consumption in the adult population (aged 15 and over) (2010–2022), and target line (2010–2030), both sexes



Fig. A1.12. Country-specific age-standardized prevalence of insufficient physical activity among adults aged 18 and over in the WHO European Region (2000–2022), and target lines (2010–2030), by sex

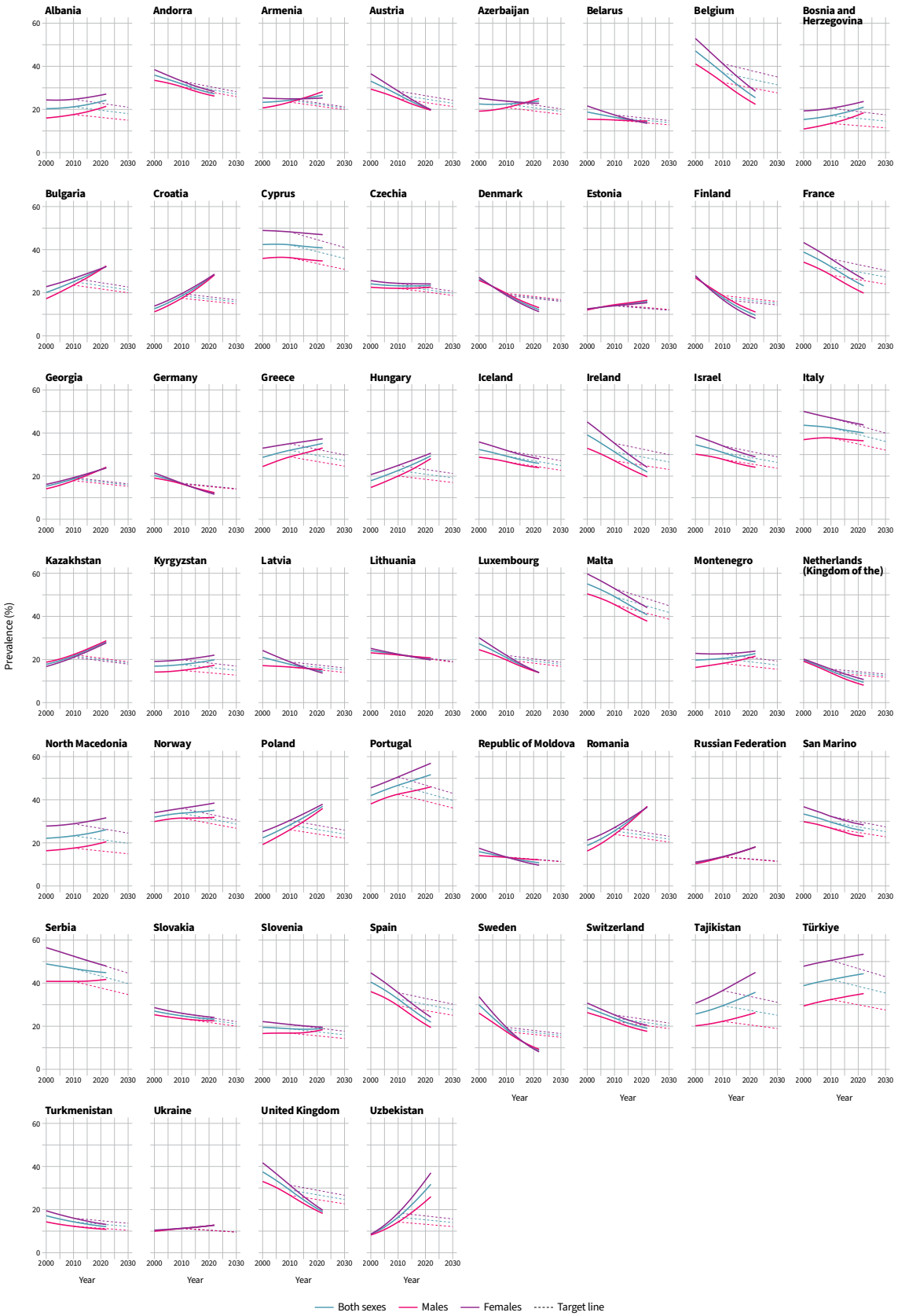


Fig. A1.13. Country-specific age-standardized prevalence of raised blood pressure in the population aged 30–79 (1990–2019), and target lines (2010–2025), by sex

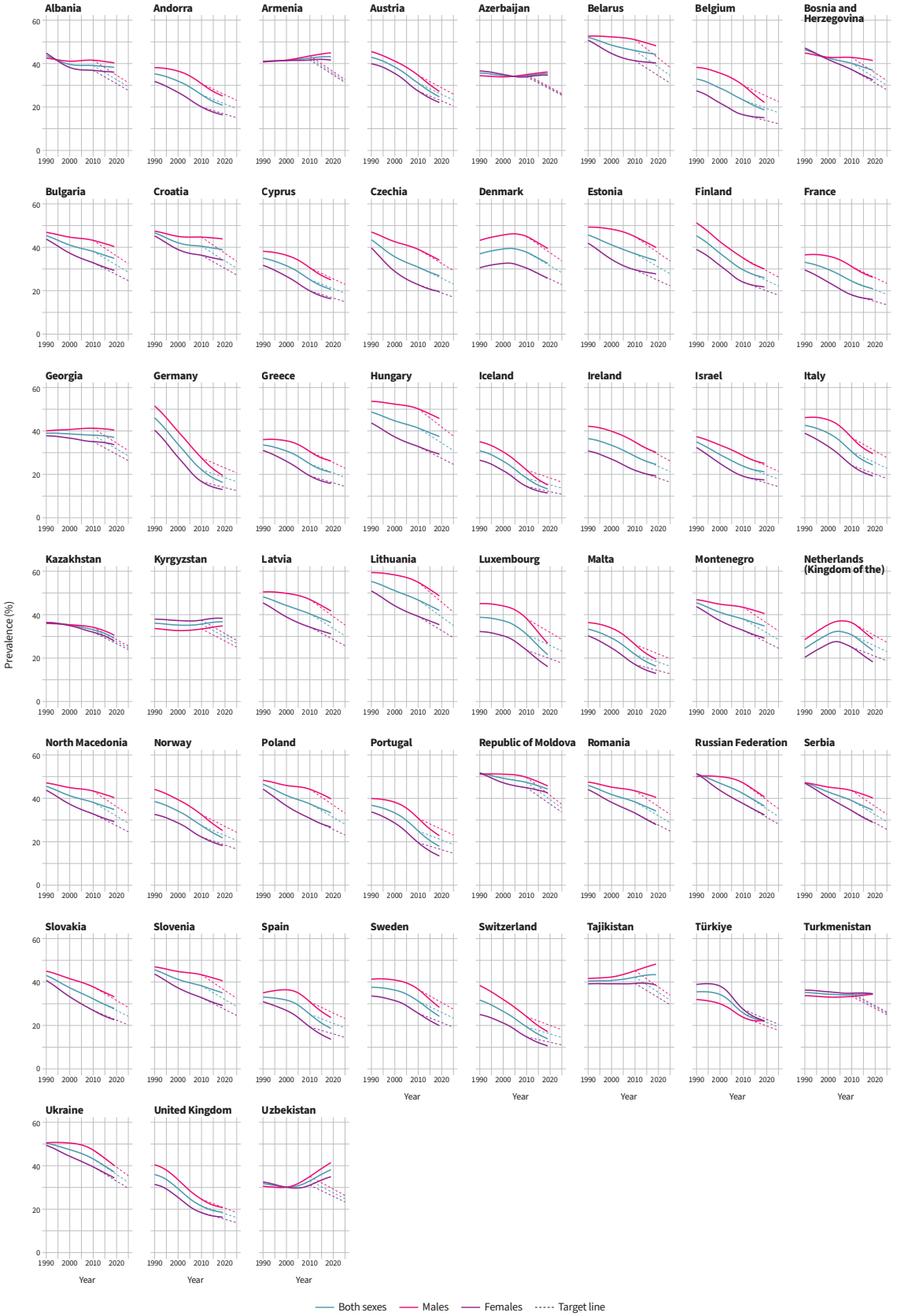


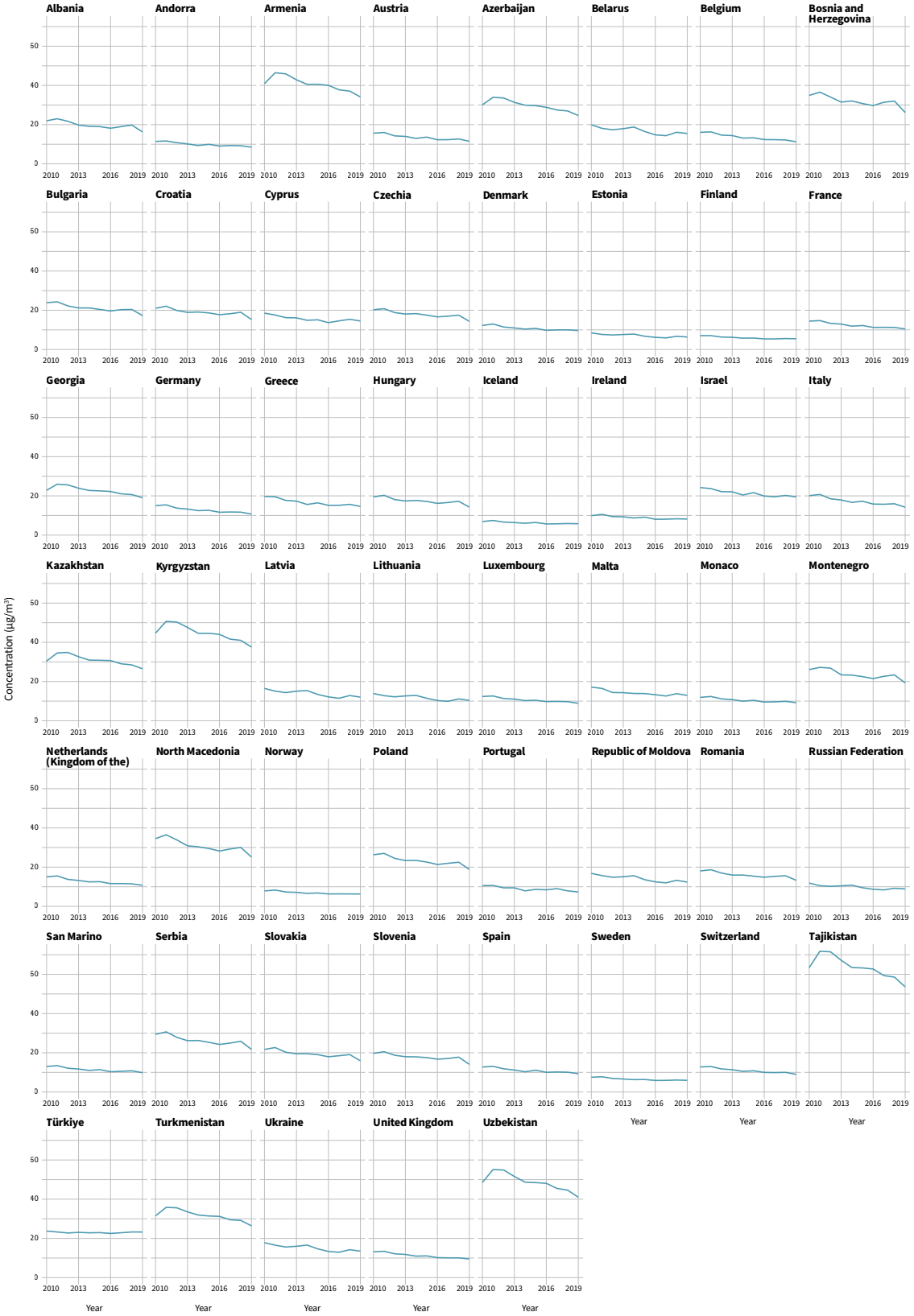
Fig. A1.14. Country-specific age-standardized prevalence of obesity in the population aged 18 and over (1990–2022), and target lines (2010–2022), by sex



Fig. A1.15. Country-specific age-standardized prevalence of diabetes in the population aged 18 and over (1990–2022), and target lines (2010–2025), by sex



Fig. A1.16. Annual concentration of particulate matter with diameter under 2.5 µm ($PM_{2.5}$), by country (2010–2019)



Annex 2. Methodology: indicators and analytical approach

Outcome indicators

The first group of indicators used in the report is a selection of noncommunicable disease (NCD)-related outcome indicators that are defined in the Sustainable Development Goal (SDG) framework *(1)* and the Global Monitoring Framework (GMF) *(2)*. These usually have timebound, quantifiable targets. They include outcome indicators of premature NCD mortality, which are calculated using official cause-of-death and population data reported to WHO *(3)*. These indicators also include the prevalence of key NCD-related behavioural and biological risk factors, which are estimated by WHO in consultation with Member States following agreed practices and are then disseminated through the Global Health Observatory *(4)*.

In accordance with the 5-by-5 approach for NCDs adopted in 2018,[1] this report includes progress towards endorsed goals in the areas of mental health, using suicide mortality as headline indicator, and air pollution. This expansion underlines the growing recognition of mental health and environmental determinants as critical components of the global NCD agenda.

These indicators are supplemented with additional relevant outcome indicators for preventable and treatable mortality from NCDs and, more narrowly, preventable mortality from cancers. This is a new set of indicators developed by the WHO Regional Office for Europe that uses an internationally accepted list of causes of death derived by Eurostat and the Organisation for Economic Co-operation and Development (OECD), but which includes only NCD-related causes of death. Timebound, quantifiable targets have not yet been established for these indicators.

Progress monitor indicators (PIs)

The second group of indicators consists of 22 PIs. These are process indicators for country adoption of recommended NCD policies and capacities in key areas of surveillance and governance, demand reduction measures for tobacco control, alcohol use and unhealthy diets, improvement of physical activity awareness, NCD management in health systems, and cancer prevention. The initial 19 PIs were agreed at the Second High-Level Meeting of the United Nations General Assembly in 2014 *(6)*. These indicators were revised following release of the updated WHO best buys in 2023 *(7)*. The revisions included removal of several diet-related indicators, modification of one indicator, and introduction of four others. Indicators were also added for essential medicines and technologies for chronic respiratory diseases (CRDs) and human papillomavirus (HPV) vaccination. Data for PIs are collected and collated every second year, primarily through the NCD Country Capacity Survey *(8)*. Exceptions are: (i) indicators on tobacco, which are collected as part of WHO global tobacco reporting *(9)*; (ii) indicators on alcohol, which are collected through the Global Survey on Progress on SDG health target 3.5 *(10)*; (iii) mortality, which is calculated from the latest mortality data received from countries; and (iv) breast-milk substitutes, which are retrieved from the report *Marketing of breast-milk substitutes: national adoption of the International Code, status report 2024 (11)*.

1 The 5-by-5 approach focuses on five key disease groups: cardiovascular diseases, cancers, CRDs, diabetes and mental disorders; and five major risk factors: tobacco use, alcohol use, unhealthy diet, physical inactivity and air pollution. The approach was adopted at the United Nations Third High-Level Meeting on NCDs in 2018 *(5)*.

Achievement of PIs by country is additionally disseminated through dedicated publications *(12–15)*, which contain detailed metadata including criteria on full and partial indicator achievement. Most PIs can be either fully or partly achieved. The PI score was calculated by assigning one point for each fully achieved indicator and 0.5 points for each partly achieved indicator. An average PI score was calculated for each country, ranging from 0% to 100%, and a score was calculated for the WHO European Region as the average of country scores for each year.

Indicators used in the assessment are given in Table A2.1, organized according to framework, type of indicator and source. Also included are GMF targets for 2025, and where revised, for 2030; pertinent SDG targets for 2030; their quantification level; yearly rate of change needed to reach the target in the respective timeframe; and sources.

Table A2.1. Indicators used in the report and agreed target quantification, by framework, type of indicator and source

Framework and category	Indicator and target quantification (2010 baseline, unless otherwise stated)	Minimum yearly rate of change needed to reach target	Source
Outcome indicators (GMF and SDG)			
NCD-related mortality			
Premature mortality	Unconditional probability of dying between ages 30–69 from four main NCD causes – CVD, cancers, CRD and diabetes. GMF *(2)* and EPW *(16)* targets are 25% reduction between 2010 and 2025. Those are aligned with the EAP target, which then calls for a reduction by one third between 2010 and 2030 *(17)*. SDG target 3.4.1 calls for its reduction by one third between 2015 and 2030 *(1)* (time period of 15 years).	1.98% for 2010 baseline (EPW, EAP and GMF) or 2.63% for 2015 baseline (SDG)	Calculations based on *(3)*
Mortality from suicide	Age-standardized mortality rate from suicide. Comprehensive Mental Health Action Plan 2013–2030 has a target of one third reduction in rate of suicide between 2015 and 2030, aligned with SDGs *(18)*. EPW target is 15% reduction.	2.63%	Calculations based on *(3)*
NCD-related risk factors			
Alcohol consumption	Total (recorded and unrecorded) alcohol consumption per capita among persons aged 15 years and older within a calendar year (in litres (L) of pure alcohol). Initial GMF and EPW targets have been increased from 10% reduction by 2025 to 20% between 2010 and 2030 *(2)*. This is also SDG indicator 3.5.2 *(1)*. Data for years 2021 and 2022 are preliminary and shown only for groups of countries.	1.11%	*(4)*
Tobacco use	Age-standardized prevalence of current tobacco use among the population aged 15 years and older. GMF target is 30% reduction by 2025 *(2)*. This is also EPW and SDG indicator 3.a.1 *(1)*.	2.35%	*(4)*

Note: CVD: cardiovascular disease; EAP: European Action Plan; EPW: European Programme of Work.

Table A2.1 (contd)

Framework and category	Indicator and target quantification (2010 baseline, unless otherwise stated)	Minimum yearly rate of change needed to reach target	Source
Insufficient physical activity	Age-standardized prevalence of insufficient physical activity among the population aged 15 and older. Initial GMF target was 10% reduction between 2010 and 2025 *(2)*; this has been revised to 15% between 2010 and 2030 *(19,20)*.	0.7%	*(4)*
Raised blood pressure	Age-standardized prevalence of raised blood pressure among persons aged 18 and over (defined as systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg). GMF target is 25% reduction by 2025 *(2)*. This is also an EPW indicator. Data for persons aged 30–79 are used instead of ages 18 and over as more up-to-date data are available (up to 2019).	1.98%	*(4)*
Obesity	Age-standardized prevalence of obesity in persons aged 18 and over (defined as body mass index ≥ 30 kg/m^2). GMF target is no increase in obesity by 2025 *(2).* This is also an EPW indicator.	0%	*(4)*
Diabetes	Age-standardized prevalence of diabetes in persons aged 18 and over. GMF target is no increase in diabetes by 2025 *(2).*	0%	*(4)*
Air pollution	Ambient air pollution.		*(4)*
PIs			
Surveillance and governance	1. Set timebound NCD targets and indicators according to WHO guidance 2. Availability of a functional system for generating reliable cause-specific mortality data on a routine basis 3. STEPS (STEPwise approach to NCD risk factor surveillance) survey or a comprehensive health examination survey every five years 4. Having an operational multisectoral national strategy/action plan that integrates the major NCDs and their shared risk factors		*(13–15)*
Risk factors – tobacco	5a. Reduce affordability of tobacco products by increasing tobacco excise taxes 5b. Create by law completely smokefree environments in all indoor workplaces, public places and public transport 5c. Warn people of the dangers of tobacco and tobacco smoke through effective health warnings and mass media campaigns 5d. Ban all forms of tobacco advertising, promotion and sponsorship 5e. Implement mass media campaigns that educate the public about the harms of smoking/tobacco use and secondhand smoke		*(13–15)*

Table A2.1 (contd)

Framework and category	Indicator and target quantification (2010 baseline, unless otherwise stated)	Source
Risk factors – alcohol	6a. Regulations over commercial and public availability of alcohol 6b. Comprehensive restrictions or bans on alcohol advertising and promotions 6c. Pricing policies such as excise tax increases on alcoholic beverages	*(13–15)*
Risk factors – unhealthy diet	7a. Reformulation of policies for healthier food and beverage products (e.g. elimination of trans-fatty acids and/or reduction of saturated fats, free sugars and/or sodium) 7b. Front-of-pack labelling as part of comprehensive nutrition labelling policies for facilitating consumers' understanding and choice of food for healthy diets 7c. Public food procurement and service policies for healthy diets (e.g. to reduce the intake of free sugars, sodium and unhealthy fats, and to increase the consumption of legumes, wholegrains, fruits and vegetables) 7d. Behaviour change communication and mass media campaign for healthy diets (e.g. to reduce the intake of energy, free sugars, sodium and unhealthy fats, and to increase the consumption of legumes, wholegrains, fruits and vegetables) 7e. WHO set of recommendations on marketing of foods and nonalcoholic beverages to children 7f. Legislation/regulations fully implementing the International Code of Marketing of Breast-milk Substitutes	*(13–15)*
Risk factors – physical activity	8. Implement at least one recent national public awareness programme on physical activity	*(13–15)*
NCD management	9. Evidence-based national guidelines/protocols/standards for the management of major NCDs through a primary care approach, recognized/approved by government or competent authorities	*(13–15)*
Health system NCD resource delivery	10. Essential medicines and technologies for CRDs	*(21)*
Cancer prevention	11. HPV vaccination programme	*(21)*

Analytical approach

Avoidable (preventable and treatable) mortality from NCDs

Avoidable mortality refers to deaths that could have been avoided through timely and effective health-care interventions, including prevention, early detection and appropriate treatment. It is widely used as an indicator of the quality and accessibility of health-care systems *(22–26)*.

Avoidable mortality from NCDs, which can be further disaggregated into preventable and treatable mortality, is assessed by new indicators developed by the WHO Regional Office for Europe and disseminated for the first time in this report. They build on previously developed, widely used and internationally agreed indicators of preventable and treatable causes of death, which were endorsed by Eurostat (and hence by European Union (EU) Member States) and by the OECD *(23)*. The reported indicators are a subset of the agreed Eurostat/OECD list, where causes of death are limited to NCD causes (International Classification of Diseases, 10th revision (ICD-10), chapters II–XIV) and standardized to the WHO Standard European population with age limits 0–74 years. They can be used as indicators of effectiveness of NCD prevention and treatment policies and systems, respectively. Preventable mortality from cancers is a subset of preventable mortality from NCDs, where the cause of death is one of the cancers (ICD-10 chapter II).

If a death from an NCD (for instance, cervical cancer) can be both prevented and averted through the health system, it is reported under preventable causes, as the disease can be prevented in the first place. Notable exceptions are causes where there is no strong evidence that either prevention or treatment predominates, in which case a 50%–50% allocation is used (examples include diabetes mellitus; aortic aneurysm; hypertensive, ischaemic heart and cerebrovascular diseases; and other atherosclerosis).

As most deaths from cardiovascular disease (CVD) are included in avoidable deaths and are evenly split between preventable and treatable causes, the share of preventable deaths from CVDs is very close to 50% by definition. For this reason, preventable mortality from CVDs – in contrast to preventable mortality from cancers – is not calculated. However, if it is of interest, it can be calculated as 50% of CVD deaths.

Avoidable mortality indicators can only be reliably calculated if the cause-of-death data submitted to WHO are at the level of individual ICD-10 codes. This calculation is not possible if an earlier version of ICD (ICD-8 or 9) or aggregated lists, such as the Mortality Tabulation List, are used. Therefore, the calculation of these indicators was not possible for Albania, the Russian Federation, Turkmenistan and Ukraine.

Cost of productivity loss

To quantify the economic impact of preventable and treatable mortality from NCDs, cost of productivity loss (CPL) was calculated for the age group 30–74 years *(27,28)*. CPL was calculated by multiplying years of potential life lost (YPLL) *(29)* by cause between the ages of 30 and 74 by gross domestic product (GDP) per capita in US dollars. Cumulative gains in the number of deaths and CPL averted were calculated for three scenarios at the level of the WHO European Region: (i) observed changes in avoidable mortality from NCDs between 2010 and last year with available data (2020) to show gains achieved under EAP; (ii) observed changes in premature mortality from four major NCDs between 2015 and last year with available data (2021) to show gains in the SDG era; and (iii) hypothetical reduction of one third in premature mortality from four major NCDs between 2015 and 2030 to show potential gains if SDG target 3.4.1 were achieved.

In these calculations, population was held constant with the value observed in the baseline year (to adjust for population change) and GDP was held constant in 2015 US$ (to adjust for inflation). YPLL was calculated using official cause-of-death and population data reported to WHO *(3)*, while GDP data were obtained from the World Bank *(30)*. Four groups of causes of death were selected for the analysis: (i) preventable mortality from NCDs; (ii) preventable cancer mortality; (iii) treatable mortality from NCDs; and (iv) premature mortality from four major NCDs.

The following indicators were calculated for each Member State to provide an overview of the economic burden associated with NCDs:

- absolute CPL in US dollars
- proportion of CPL compared to GDP per capita in US dollars.

Calculation of avoidable mortality from NCDs was not possible for Albania, the Russian Federation, Turkmenistan and Ukraine. In these cases, YPLL was approximated using data from countries with similar levels of CVD and cancer mortality; CPL was then calculated using the approximated YPLL and reported GDP for the four countries.

Country groups

Regional averages of mortality and risk factor indicators tend to mask the heterogeneity that exists across the 53 Member States of the WHO European Region. Therefore, to facilitate comparisons, countries were also grouped following the WHO European Health for All database system *(31)*:

- Countries that were part of the EU prior to 2004 (EU14): Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, fItaly, Luxembourg, Netherlands (Kingdom of the), Portugal, Spain and Sweden.
- Countries that became members of the EU after 2004 (EU13): Bulgaria, Croatia, Cyprus, Czechia, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia.
- Members and associate members of the Commonwealth of Independent States (CIS): Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Republic of Moldova (suspended participation), Russian Federation, Tajikistan, Turkmenistan (associate member) and Uzbekistan.

Following the same methodological approach as in the Health for All database system, population-weighted averages were calculated for the WHO European Region and country groups, if data for any given year were available for at least half the countries.

Progress towards timebound targets

In accordance with the European Action Plan (EAP) *(17)* and WHO Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020 *(32)*, the year 2010 serves as the baseline for premature mortality and risk factor assessment. To assess progress towards the targets, the following analytical approach was chosen:

(i) available data were plotted as a line chart;

(ii) the target line – starting at the value of available data in baseline year (2010 for GMF and EAP, 2015 for SDG) and interpolated to the value needed to reach target in end year (2025 for most GMF and EPW indicators, and 2030 for premature mortality), as specified in Table A2.1 – was then added to the plot;

(iii) the minimum average yearly rate of change needed to reach the target was calculated (values per indicator are given in Table A2.1); and

(iv) the distance between the latest available data point and the target line was calculated and compared to the minimum yearly rate of change required to reach the target (step 3 above).

Current progress was assessed by measuring the distance or difference between the latest available data value and the target line. If the latest available data are *lower* than the target line, this indicates that the country or country group is on track to reach the target. If the latest available data are *higher* than the target value, this indicates that the country or country group is not on track to reach the target. The ratio of the distance between the latest observed value and the target value to the yearly rate of change needed to reach the target was used to quantify time lag in years. This analytical approach made it possible not only to assess if a country or country group was on track to reach the target, but also to quantify by how much a country or country group was either off track or ahead of target, according to the latest available data.

For PIs, the approach adopted in WHO's *Monitoring noncommunicable disease commitments in Europe (33)* was used. Briefly, regional assessment included the percentage of countries fully, partly or not at all achieving specific indicators. Country progress was assessed by level of achievement of individual indicators and summarized according to percentage of indicators partly or fully met by country. Detailed criteria of full and partial achievement for all PIs are given in WHO's NCD progress monitors *(13–15)*. It should be noted that criteria for selected PIs changed between 2017 and 2019, and then again between 2021 and 2023, to reflect updating of the WHO best buys *(7,34)*, limiting comparability over time.

Assessment of inequalities

Inequalities between countries were systematically assessed using a modified slope index of inequality (SII) approach. SII is an absolute measure of inequality for cross-sectional data that represents the difference in predicted values of an indicator between the minimal and maximal rank. SII was calculated using the following approach (Fig. A2.1):

(i) Indicator values were sorted in increasing order and plotted on the *y*-axis.

(ii) For each value, normalized rank was calculated by dividing the country rank of the indicator value by the total number of countries (*n*), resulting in *x* values between 0 and 1, which are then plotted on the *x*-axis.

(iii) A linear regression model $y(x)$ was fitted using indicator values on the *y*-axis, with normalized ranks on the *x*-axis.

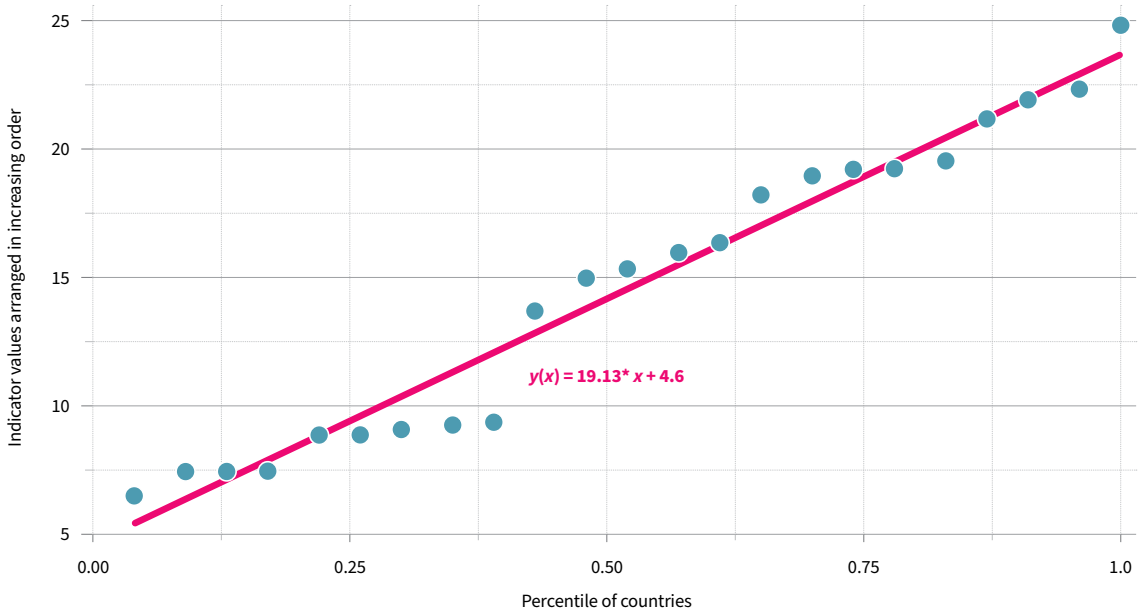
(iv) SII was calculated as the difference between predicted values for *y*-values of 1 and 0; $SII = y(1) - y(0)$, where $y(0)$ is the predicted value for the (hypothetical) country with the lowest value of the health indicator (rank 0), and $y(1)$ is the predicted value for the country with the highest value of the health indicator (rank *n*). In the example in Fig. A2.1, SII is 19.13.

If there is no inequality between countries and all have the same value for the indicator, the SII equals 0. Higher absolute values of SII indicate greater inequality and represent the absolute difference between countries with the lowest and highest indicator values. Since SII considers all data points, it is less affected by outliers, which may arise from small numbers in either the numerator or the denominator.

Systematic assessment of inequalities was performed by calculating and comparing SII in baseline and last available year for all countries with available data. In accordance with Table A2.1, the baseline year was either 2010 or 2015. For changes occurring during the coronavirus pandemic, inequalities were assessed by comparing SII in years 2019 and 2021.

Welch's *t*-test was used to compare the slopes between two regression models – for example, at different points in time (e.g. baseline and last available year). Results with a *p*-value of less than 0.05 were considered statistically significant.

Fig. A2.1. Example of an SII calculation



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Annex 3. Latest available data on selected noncommunicable disease indicators

Tables A3.1–13, showing the latest available information on a selection of noncommunicable diseases (NCDs), include data drawn from the European Programme of Work (EPW), Global Monitoring Framework (GMF) and Sustainable Development Goal (SDG) frameworks, and basic demographic and socioeconomic data *(1–3)*.

Table A3.1. Demographic and socioeconomic context; avoidable premature mortality

	Demographic and socioeconomic context				Avoidable premature mortality		
	Mid-year population (000s)	GNI in PPP$ per capita	Annual growth rate of GNI (%)	Unemployment rate, % of total labour force	Age-standardized death rates of preventable and treatable NCDs between exact age 0 and 74		
					Both sexes	Males	Females
Country	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**
Albania	2 903.70[d]	19 496.21	10.18[b]	11.08[a]	–	–	–
Andorra	82.32[c]	67 841.33	–	–	86.83[c]	121.62[c]	49.25[c]
Armenia	2 969.25	20 445.04	11.39	8.38[a]	260.78	394.66	162.50
Austria	8 951.52[b]	70 975.72	-0.05	5.27[a]	131.68[b]	172.31[b]	93.90[b]
Azerbaijan	9 868.45[d]	22 512.28	–	5.64[a]	–	–	–
Belarus	9 483.50[d]	28 394.31	-3.96	3.47[a]	386.97[d]	631.25[d]	211.32[d]
Belgium	11 538.62[c]	68 253.33	-0.86	5.54[a]	111.79[c]	139.05[c]	85.90[c]
Bosnia and Herzegovina	3 433.89	20 950.20	6.12	11.83[a]	201.90	270.41	141.10
Bulgaria	6 877.74[b]	35 469.87	11.42	4.18[a]	302.75[b]	430.01[b]	193.42[b]
Croatia	3 878.98[b]	42 171.18	7.00	6.28[a]	234.42[b]	334.12[b]	146.55[b]
Cyprus	904.70[b]	53 785.75	5.09	6.43[a]	116.37[b]	157.84[b]	76.90[b]
Czechia	10 759.52	51 695.17	-2.69	2.56[a]	187.54[b]	258.48[b]	122.88[b]
Denmark	5 850.08[b]	77 953.68	3.20	4.83[a]	126.81[b]	153.08[b]	101.37[b]
Estonia	1 331.80	48 168.40	-1.99	6.66[a]	236.68	365.30	132.55
Finland	5 541.02[b]	62 823.04	0.10	6.97[a]	137.65[b]	189.15[b]	88.50[b]
France	67 473.65[c]	57 594.03	0.28	7.08[a]	104.59[c]	139.62[c]	72.87[c]
Georgia	3 688.65	22 063.44	9.60	11.75[a]	197.00	303.91	113.26
Germany	83 160.87[c]	66 616.02	-1.10	3.01[a]	144.43[c]	187.60[c]	103.78[c]
Greece	10 698.59[c]	38 922.47	5.31	10.81[a]	143.89[c]	205.76[c]	88.91[c]
Hungary	9 689.01	43 659.45	0.03	4.09[a]	316.98	449.89	208.32
Iceland	376.25	71 840.13	–	3.05[a]	104.97	126.08	83.17
Ireland	5 029.88[c]	133 822.76	3.18	4.45[a]	132.75[d]	160.66[d]	105.44[d]
Israel	9 557.51	52 133.61	5.24	3.35[a]	86.77[b]	109.58[b]	66.39[b]
Italy	59 438.86[c]	55 442.08	0.45	7.66[a]	104.50[c]	134.03[c]	77.45[c]
Kazakhstan	19 002.82[b]	36 619.57	0.46	4.66[a]	353.98[b]	506.82[b]	243.31[b]
Kyrgyzstan	6 456.52[d]	6 413.39	–	4.04[a]	377.52[d]	524.06[d]	261.29[d]
Latvia	1 879.38	41 624.66	3.38	6.47[a]	337.86[b]	527.39[b]	194.45[b]
Lithuania	2 831.64	50 968.94	-5.14	6.53[a]	289.15	445.15	169.72
Luxembourg	653.10	146 457.02	-3.55	5.29[a]	93.41	117.34	69.18
Malta	514.56[c]	58 546.92	4.48	2.60[a]	120.43[c]	157.44[c]	83.80[c]
Monaco	37.31[c]	–	–	–	–	–	–
Montenegro	622.03[d]	28 324.57	6.60	14.39[a]	166.93[d]	214.80[d]	125.49[d]
Netherlands (Kingdom of the)	17 695.17	74 541.80	-0.30	3.52[a]	109.72	122.24	97.49
North Macedonia	1 836.71[b]	21 304.46	2.56	13.15[a]	235.75[b]	287.88[b]	187.03[b]
Norway	5 408.32[b]	121 259.24	15.68[b]	3.50[a]	103.22[c]	120.50[c]	85.84[c]
Poland	37 737.21[b]	46 609.61	8.66	2.80[a]	223.32[b]	318.08[b]	141.04[b]
Portugal	10 276.62[d]	44 484.30	3.84	6.47[a]	132.67[d]	192.07[d]	81.90[d]
Republic of Moldova	3 545.12[d]	16 301.72	-4.39	1.55[a]	423.71[d]	593.22[d]	291.43[d]
Romania	19 375.83[d]	43 239.64	3.82	5.62[a]	310.19[d]	442.44[d]	194.79[d]
Russian Federation	146 764.66[d]	40 813.23	-1.92	3.16[a]	–	–	–
San Marino	33.42	65 717.89[b]	8.24[b]	–	44.83	63.78	26.45
Serbia	6 664.45	25 061.85	4.01	7.84[a]	245.83	320.15	180.18
Slovakia	5 434.71[b]	41 013.39	-0.82	5.83[a]	243.89[b]	353.84[b]	147.62[b]
Slovenia	2 100.13[c]	51 281.86	-1.03	3.52[a]	150.09[c]	206.61[c]	95.38[c]
Spain	47 331.30[b]	48 685.50	2.11	12.14[a]	107.41[b]	149.81[b]	68.26[b]
Sweden	10 486.94	68 178.03	0.91	7.74[a]	93.31	109.69	77.05
Switzerland	8 670.30[b]	90 746.45	2.61	3.84[a]	85.69[b]	107.42[b]	64.87[b]
Tajikistan	8 646.98[d]	4 614.41	8.04[b]	6.90[a]	370.51[d]	416.54[d]	325.34[d]
Türkiye	82 579.44[d]	38 355.15	–	9.64[a]	168.64[d]	230.15[d]	111.88[d]
Turkmenistan	5 438.67[d]	17 100.09[d]	–	4.10[a]	–	–	–
Ukraine	41 208.21[b]	16 003.12	-8.68	9.83[b]	–	–	–
United Kingdom	67 078.53[c]	57 460.51	11.28[b]	4.36[a]	151.54[c]	186.63[c]	118.08[c]
Uzbekistan	33 580.39[d]	9 042.32	–	4.33[a]	375.32[d]	449.32[d]	309.52[d]
WHO European Region	916 557.85[d]	46 879.06	1.41	5.84[a]	180.34[c]	240.65[c]	127.40[c]

Note: GNI: gross national income; PPP$: purchasing power parity dollar; "–": no data available.
[a] 2023; [b] 2021; [c] 2020; [d] 2014–2019.

Table A3.2. Treatable and preventable premature mortality; preventable premature cancer mortality

	Treatable premature mortality			Preventable premature mortality			Preventable premature cancer mortality		
	Age-standardized death rates of treatable NCDs between exact age 0 and 74			Age-standardized death rates of preventable NCDs between exact age 0 and 74			Age-standardized death rates of preventable cancers between exact age 0 and 74		
	Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females
Country	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**
Albania	–	–	–	–	–	–	–	–	–
Andorra	29.18[c]	33.90[c]	19.86[c]	53.60[c]	81.78[c]	18.69[c]	26.84[c]	41.95[c]	10.42[c]
Armenia	119.26	159.44	89.38	141.22	234.68	72.63	48.54	85.29	22.22
Austria	46.95[b]	53.87[b]	40.48[b]	84.65[b]	118.26[b]	53.12[b]	36.99[b]	48.95[b]	25.97[b]
Azerbaijan	–	–	–	–	–	–	–	–	–
Belarus	164.94[d]	246.99[d]	107.25[d]	221.94[d]	384.11[d]	103.88[d]	53.96[d]	104.56[d]	17.70[d]
Belgium	37.97[c]	38.20[c]	37.78[c]	73.74[c]	100.71[c]	47.94[c]	37.79[c]	51.24[c]	25.06[c]
Bosnia and Herzegovina	90.23	107.45	74.61	111.46	162.50	66.19	46.21	69.25	26.49
Bulgaria	142.00[b]	185.05[b]	105.51[b]	160.60[b]	244.73[b]	87.75[b]	48.10[b]	74.86[b]	25.43[b]
Croatia	94.21[b]	117.92[b]	73.51[b]	140.04[b]	215.98[b]	72.81[b]	58.83[b]	87.63[b]	33.76[b]
Cyprus	50.89[b]	59.97[b]	41.51[b]	64.74[b]	96.06[b]	34.31[b]	29.16[b]	43.72[b]	15.30[b]
Czechia	77.16[b]	97.23[b]	59.03[b]	110.26[b]	161.03[b]	63.64[b]	40.29[b]	57.82[b]	24.61[b]
Denmark	39.85[b]	41.46[b]	38.23[b]	86.89[b]	111.44[b]	62.89[b]	38.81[b]	46.39[b]	31.53[b]
Estonia	82.26	111.65	59.28	154.12	252.41	72.48	41.63	68.61	21.03
Finland	49.91[b]	59.72[b]	40.65[b]	87.59[b]	129.29[b]	47.58[b]	29.14[b]	41.10[b]	18.01[b]
France	37.13[c]	37.79[c]	36.65[c]	67.45[c]	101.80[c]	36.18[c]	40.46[c]	59.93[c]	22.87[c]
Georgia	98.82	138.50	67.80	98.01	165.01	45.13	26.43	47.58	10.12
Germany	52.85[c]	59.89[c]	46.36[c]	91.57[c]	127.68[c]	57.41[c]	40.57[c]	54.55[c]	27.52[c]
Greece	58.55[c]	71.39[c]	47.00[c]	85.30[c]	134.23[c]	41.75[c]	44.25[c]	70.26[c]	21.45[c]
Hungary	123.03	160.81	92.56	193.86	288.91	115.70	68.69	96.97	46.13
Iceland	39.31	42.67	34.96	64.37	81.84	45.05	30.27	35.27	25.16
Ireland	51.32[d]	53.05[d]	49.47[d]	81.26[d]	107.31[d]	55.58[d]	39.49[d]	50.53[d]	28.68[d]
Israel	39.83[b]	42.44[b]	37.55[b]	46.85[b]	66.96[b]	28.65[b]	23.29[b]	32.42[b]	15.15[b]
Italy	43.84[c]	45.87[c]	42.07[c]	60.65[c]	88.12[c]	35.34[c]	34.54[c]	49.61[c]	20.76[c]
Kazakhstan	144.44[b]	187.73[b]	113.07[b]	209.51[b]	319.00[b]	130.12[b]	34.81[b]	58.14[b]	18.43[b]
Kyrgyzstan	157.22[d]	201.56[d]	122.41[d]	220.15[d]	322.43[d]	138.54[d]	44.03[d]	66.27[d]	27.06[d]
Latvia	134.72[b]	190.52[b]	93.57[b]	202.78[b]	336.06[b]	100.55[b]	54.48[b]	94.52[b]	25.49[b]
Lithuania	121.33	172.09	83.00	167.43	272.79	86.25	51.45	87.79	24.32
Luxembourg	32.13	33.77	30.17	60.41	82.42	37.88	27.22	35.76	18.67
Malta	54.69[c]	60.13[c]	48.39[c]	65.37[c]	96.00[c]	33.96[c]	26.10[c]	39.85[c]	12.65[c]
Monaco	–	–	–	–	–	–	–	–	–
Montenegro	70.77[d]	74.98[d]	67.01[d]	94.85[d]	138.18[d]	56.04[d]	46.73[d]	67.81[d]	28.52[d]
Netherlands (Kingdom of the)	37.77	36.05	39.50	71.91	86.13	57.93	40.51	47.18	34.01
North Macedonia	108.38[b]	114.37[b]	102.63[b]	127.09[b]	173.16[b]	83.74[b]	47.77[b]	71.73[b]	25.81[b]
Norway	38.23[c]	39.15[c]	37.31[c]	64.87[c]	81.14[c]	48.35[c]	30.11[c]	35.20[c]	25.08[c]
Poland	89.72[b]	115.88[b]	67.26[b]	133.57[b]	202.15[b]	73.72[b]	50.88[b]	73.67[b]	31.70[b]
Portugal	52.85[d]	60.87[d]	45.93[d]	79.78[d]	131.00[d]	35.79[d]	45.32[d]	75.08[d]	19.89[d]
Republic of Moldova	169.98[d]	216.69[d]	133.69[d]	253.49[d]	376.22[d]	157.48[d]	55.16[d]	99.46[d]	21.30[d]
Romania	126.64[d]	161.61[d]	96.45[d]	183.49[d]	280.75[d]	98.24[d]	63.57[d]	102.24[d]	30.26[d]
Russian Federation	–	–	–	–	–	–	–	–	–
San Marino	15.66	13.51	17.58	26.62	45.17	8.87	24.66	41.05	8.87
Serbia	109.53	126.75	94.29	136.23	193.27	85.67	57.91	81.05	37.90
Slovakia	105.02[b]	139.19[b]	75.44[b]	138.67[b]	214.30[b]	72.07[b]	43.48[b]	67.09[b]	23.45[b]
Slovenia	47.94[c]	54.55[c]	41.52[c]	101.81[c]	151.30[c]	53.36[c]	50.90[c]	74.23[c]	28.62[c]
Spain	41.55[b]	48.35[b]	35.30[b]	65.84[b]	101.42[b]	32.89[b]	38.80[b]	59.02[b]	20.26[b]
Sweden	38.23	40.53	35.88	55.03	68.97	40.93	22.27	25.27	19.31
Switzerland	30.30[b]	31.68[b]	29.05[b]	55.24[b]	75.51[b]	35.73[b]	30.66[b]	40.75[b]	21.05[b]
Tajikistan	178.28[d]	195.40[d]	161.33[d]	192.10[d]	220.96[d]	163.86[d]	27.08[d]	33.20[d]	21.09[d]
Türkiye	71.87[d]	83.54[d]	61.10[d]	96.77[d]	146.59[d]	50.76[d]	40.78[d]	68.34[d]	15.34[d]
Turkmenistan	–	–	–	–	–	–	–	–	–
Ukraine	–	–	–	–	–	–	–	–	–
United Kingdom	55.56[c]	60.42[c]	50.96[c]	95.97[c]	126.19[c]	67.10[c]	38.24[c]	47.67[c]	29.35[c]
Uzbekistan	179.33[d]	207.00[d]	154.85[d]	195.96[d]	242.27[d]	154.62[d]	28.58[d]	36.89[d]	21.34[d]
WHO European Region	73.80[c]	87.00[c]	62.55[c]	106.50[c]	153.56[c]	64.75[c]	41.04[c]	60.17[c]	24.15[c]

Note: "–": no data available.
[a] 2023; [b] 2021; [c] 2020; [d] 2014–2019.

Table A3.3. Premature mortality from four major NCDs, together and individually

	Premature mortality											
	Unconditional probability of dying (in %) between exact ages 30 and 69 years from:											
	Percentage of deaths before age 70 years	Four major NCDs			CVD			Cancer			CRD	Diabetes
		Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females		
Country	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**
Albania	–	–	–	–	–	–	–	–	–	–	–	–
Andorra	32.70[c]	8.00[c]	10.96[c]	4.69[c]	3.01[c]	4.40[c]	1.47[c]	4.66[c]	6.53[c]	2.58[c]	0.39[c]	0.13[c]
Armenia	37.58	17.70	25.43	11.36	10.49	16.70	5.47	7.40	9.59	5.76	0.24	0.46
Austria	21.33[b]	9.36[b]	11.79[b]	7.00[b]	2.97[b]	4.42[b]	1.58[b]	5.65[b]	6.43[b]	4.91[b]	0.55[b]	0.44[b]
Azerbaijan	–	–	–	–	–	–	–	–	–	–	–	–
Belarus	39.47[d]	23.97[d]	36.07[d]	13.59[d]	16.19[d]	25.79[d]	8.27[d]	8.79[d]	12.96[d]	5.62[d]	0.40[d]	0.13[d]
Belgium	20.07[c]	8.77[c]	10.63[c]	6.95[c]	2.42[c]	3.48[c]	1.38[c]	5.75[c]	6.49[c]	5.03[c]	0.63[c]	0.18[c]
Bosnia and Herzegovina	30.87	15.16	19.63	10.93	7.30	10.34	4.43	7.24	8.71	5.94	0.34	1.00
Bulgaria	30.74[b]	24.20[b]	32.08[b]	16.45[b]	16.85[b]	23.63[b]	10.27[b]	7.94[b]	9.87[b]	6.26[b]	0.40[b]	0.57[b]
Croatia	24.78[b]	15.97[b]	21.38[b]	10.78[b]	6.02[b]	9.17[b]	3.05[b]	8.95[b]	11.14[b]	6.97[b]	0.52[b]	1.28[b]
Cyprus	22.39[b]	8.86[b]	11.30[b]	6.45[b]	3.41[b]	5.18[b]	1.68[b]	4.87[b]	5.42[b]	4.34[b]	0.17[b]	0.64[b]
Czechia	26.35[b]	13.69[b]	17.98[b]	9.48[b]	5.97[b]	8.88[b]	3.13[b]	7.01[b]	8.32[b]	5.79[b]	0.62[b]	0.68[b]
Denmark	20.54[b]	9.25[b]	10.75[b]	7.76[b]	2.35[b]	3.32[b]	1.39[b]	5.94[b]	6.39[b]	5.51[b]	0.86[b]	0.34[b]
Estonia	26.89	13.99	20.51	8.35	7.05	11.81	2.98	6.72	8.87	4.99	0.29	0.51
Finland	20.37[b]	9.26[b]	12.00[b]	6.55[b]	3.84[b]	5.86[b]	1.85[b]	5.12[b]	5.85[b]	4.42[b]	0.29[b]	0.25[b]
France	21.29[c]	8.63[c]	11.11[c]	6.30[c]	2.05[c]	3.11[c]	1.07[c]	6.29[c]	7.68[c]	5.02[c]	0.22[c]	0.23[c]
Georgia	34.21	14.56	21.67	8.38	9.27	14.81	4.49	4.78	6.46	3.44	0.33	0.78
Germany	20.81[c]	10.77[c]	13.51[c]	8.08[c]	3.62[c]	5.34[c]	1.94[c]	6.44[c]	7.40[c]	5.53[c]	0.70[c]	0.35[c]
Greece	18.65[c]	11.58[c]	15.85[c]	7.59[c]	4.50[c]	7.06[c]	2.13[c]	6.88[c]	8.71[c]	5.23[c]	0.23[c]	0.35[c]
Hungary	31.57	21.07	28.04	14.73	10.12	15.14	5.64	10.18	12.52	8.23	1.48	0.75
Iceland	22.33	8.21	9.34	7.06	2.74	4.07	1.36	5.20	4.94	5.47	0.39	0.07
Ireland	25.77[d]	9.06[c]	10.74[c]	7.38[c]	2.81[c]	4.13[c]	1.50[c]	5.84[c]	6.24[c]	5.45[c]	0.45[c]	0.17[c]
Israel	24.47[b]	6.94[b]	8.64[b]	5.36[b]	1.75[b]	2.67[b]	0.90[b]	4.45[b]	4.98[b]	3.98[b]	0.31[b]	0.55[b]
Italy	15.37[c]	8.51[c]	10.55[c]	6.57[c]	2.42[c]	3.59[c]	1.32[c]	5.69[c]	6.45[c]	4.98[c]	0.21[c]	0.37[c]
Kazakhstan	51.13[b]	21.18[b]	28.72[b]	14.88[b]	12.49[b]	18.24[b]	7.72[b]	5.42[b]	6.80[b]	4.43[b]	2.92[b]	1.88[b]
Kyrgyzstan	60.14[d]	21.91[d]	29.00[d]	15.71[d]	15.41[d]	21.68[d]	9.96[d]	6.04[d]	7.24[d]	5.14[d]	0.93[d]	0.81[d]
Latvia	31.14[b]	22.34[b]	32.76[b]	13.16[b]	13.83[b]	21.97[b]	6.79[b]	8.79[b]	12.21[b]	6.19[b]	0.41[b]	0.78[b]
Lithuania	30.03	18.60	26.91	11.36	10.55	16.91	5.12	8.28	10.92	6.20	0.32	0.46
Luxembourg	23.48	7.33	8.96	5.65	2.11	3.06	1.14	4.67	5.31	4.01	0.56	0.14
Malta	21.76[c]	9.35[c]	11.49[c]	7.13[c]	3.35[c]	4.82[c]	1.82[c]	5.42[c]	5.95[c]	4.90[c]	0.31[c]	0.52[c]
Monaco	–	–	–	–	–	–	–	–	–	–	–	–
Montenegro	34.11[d]	12.77[d]	16.47[d]	9.24[d]	4.21[d]	6.18[d]	2.33[d]	7.32[d]	8.51[d]	6.25[d]	0.51[d]	1.24[d]
Netherlands (Kingdom of the)	20.53	8.89	9.80	7.98	2.13	2.86	1.40	6.06	6.31	5.83	0.64	0.25
North Macedonia	34.70[b]	18.22[b]	22.42[b]	14.01[b]	8.72[b]	11.47[b]	6.02[b]	8.17[b]	9.92[b]	6.49[b]	0.62[b]	1.81[b]
Norway	19.92[c]	7.43[c]	8.55[c]	6.28[c]	1.96[c]	2.88[c]	1.03[c]	4.89[c]	5.09[c]	4.70[c]	0.49[c]	0.23[c]
Poland	33.41[b]	15.33[b]	20.61[b]	10.42[b]	7.28[b]	11.23[b]	3.64[b]	7.85[b]	9.42[b]	6.48[b]	0.32[b]	0.58[b]
Portugal	20.77[d]	10.45[d]	14.61[d]	6.68[d]	3.08[d]	4.81[d]	1.55[d]	7.08[d]	9.52[d]	4.92[d]	0.24[d]	0.32[d]
Republic of Moldova	49.15[d]	24.18[d]	33.39[d]	16.24[d]	15.46[d]	21.84[d]	10.15[d]	9.29[d]	13.35[d]	6.08[d]	0.54[d]	0.58[d]
Romania	34.09[d]	20.43[d]	28.06[d]	13.03[d]	11.13[d]	16.38[d]	6.18[d]	9.48[d]	12.53[d]	6.76[d]	0.71[d]	0.37[d]
Russian Federation	44.97[d]	22.86[d]	33.19[d]	14.37[d]	14.57[d]	22.80[d]	7.92[d]	8.41[d]	11.66[d]	6.10[d]	0.60[d]	0.81[d]
San Marino	14.07	5.35	7.41	3.25	1.13	0.86	1.40	4.27	6.61	1.88	0.00	0.00
Serbia	28.36	18.51	23.14	14.14	8.90	12.35	5.65	9.24	10.58	8.07	0.68	0.77
Slovakia	34.81[b]	16.35[b]	22.33[b]	10.63[b]	8.63[b]	13.09[b]	4.40[b]	7.69[b]	9.64[b]	5.96[b]	0.43[b]	0.40[b]
Slovenia	21.66[c]	10.59[c]	13.84[c]	7.30[c]	3.05[c]	4.57[c]	1.52[c]	7.32[c]	9.08[c]	5.60[c]	0.22[c]	0.27[c]
Spain	20.11[b]	8.86[b]	11.83[b]	5.99[b]	2.68[b]	4.08[b]	1.33[b]	5.93[b]	7.46[b]	4.49[b]	0.26[b]	0.19[b]
Sweden	16.28	7.18	8.25	6.10	2.45	3.49	1.39	4.32	4.35	4.30	0.27	0.28
Switzerland	18.78[b]	6.86[b]	8.46[b]	5.29[b]	1.86[b]	2.77[b]	0.95[b]	4.69[b]	5.36[b]	4.05[b]	0.29[b]	0.14[b]
Tajikistan	57.43[d]	23.12[d]	26.30[d]	20.00[d]	17.13[d]	20.38[d]	13.94[d]	3.76[d]	3.88[d]	3.66[d]	0.62[d]	3.00[d]
Türkiye	37.53[d]	12.54[d]	16.79[d]	8.29[d]	5.93[d]	8.03[d]	3.87[d]	5.56[d]	7.59[d]	3.60[d]	0.88[d]	0.67[d]
Turkmenistan	69.60[d]	26.93[d]	32.99[d]	21.59[d]	21.40[d]	27.33[d]	16.18[d]	5.28[d]	6.02[d]	4.71[d]	0.28[d]	1.57[d]
Ukraine	39.46[d]	24.56[d]	35.47[d]	15.44[d]	17.40[d]	26.61[d]	9.85[d]	8.13[d]	11.20[d]	5.90[d]	0.36[d]	0.23[d]
United Kingdom	22.30[d]	10.46[d]	12.34[d]	8.63[d]	3.45[d]	4.87[d]	2.07[d]	6.25[d]	6.74[d]	5.79[d]	0.87[d]	0.21[d]
Uzbekistan	59.62[d]	22.21[d]	26.52[d]	18.14[d]	16.72[d]	21.14[d]	12.53[d]	4.36[d]	4.54[d]	4.23[d]	0.37[d]	1.96[d]
WHO European Region	31.72[b]	14.97[b]	19.92[b]	10.43[b]	7.81[b]	11.39[b]	4.58[b]	6.78[b]	8.45[b]	5.38[b]	0.57[b]	0.56[b]

Note: CRD: chronic respiratory disease; CVD: cardiovascular disease; "–": no data available.
[a] 2023; [b] 2021; c 2020; [d] 2014–2019.

Table A3.4. Behavioural risk factors: tobacco and alcohol use; insufficient physical activity

	Behavioural risk factors							
	Alcohol use				Age-standardized prevalence of current tobacco use among people aged 15 years and over (WHO estimates) (%)			Prevalence of insufficient physical activity among adults (%)
	Total alcohol consumption (litres per capita aged 15 years or more)	Age-standardized prevalence of heavy episodic drinking in the past 30 days (%)						
		Both sexes	Males	Females	Both sexes	Males	Females	
Country	**2022**	**2020**	**2020**	**2020**	**2022**	**2022**	**2022**	**2022**
Albania	4.97	9.27	14.30	4.35	21.90	37.80	6.00	24.28
Andorra	11.06	43.33	55.96	29.49	36.30	34.80	37.90	27.21
Armenia	4.30	26.89	37.94	17.45	24.90	48.20	1.50	26.58
Austria	11.85	34.63	46.44	22.70	24.90	25.80	24.00	19.76
Azerbaijan	2.32	4.73	7.89	2.06	19.60	39.00	0.10	23.92
Belarus	11.40	28.06	39.35	17.45	30.10	46.30	13.90	14.02
Belgium	8.74	31.37	43.00	19.50	26.70	29.00	24.50	25.41
Bosnia and Herzegovina	6.33	10.67	16.39	5.34	36.20	41.60	30.90	21.07
Bulgaria	11.54	22.89	32.59	12.98	39.50	40.30	38.70	32.28
Croatia	10.85	29.69	40.79	17.78	37.00	36.70	37.30	28.45
Cyprus	5.21	18.65	27.30	9.99	35.60	47.20	23.90	40.83
Czechia	13.68	39.46	51.72	26.62	29.90	33.40	26.50	23.37
Denmark	9.97	34.46	46.42	22.13	16.20	16.40	16.10	12.14
Estonia	10.49	29.67	40.48	18.49	28.30	33.80	22.80	15.94
Finland	9.51	40.00	52.55	26.74	22.30	26.10	18.50	9.58
France	11.20	31.04	42.83	19.58	34.60	35.50	33.70	23.18
Georgia	15.54	27.08	38.28	16.50	31.80	55.90	7.60	24.02
Germany	11.24	34.36	45.96	22.43	21.30	23.20	19.30	11.98
Greece	6.98	26.23	37.19	14.96	32.80	35.00	30.60	35.20
Hungary	11.25	36.80	49.18	24.11	32.20	36.30	28.10	29.41
Iceland	8.21	42.68	55.28	28.56	9.40	9.30	9.40	25.92
Ireland	10.55	45.77	58.31	33.56	19.30	21.50	17.00	21.92
Israel	3.12	14.56	21.61	7.64	20.40	27.00	13.80	26.56
Italy	8.33	30.01	41.68	17.92	22.40	25.70	19.10	40.09
Kazakhstan	5.37	7.95	12.80	3.87	22.20	37.40	7.00	28.23
Kyrgyzstan	3.92	5.52	9.20	2.44	27.30	51.30	3.30	19.87
Latvia	14.73	31.07	42.28	20.09	33.90	46.60	21.10	14.49
Lithuania	12.18	30.84	41.89	19.73	31.40	41.10	21.60	20.23
Luxembourg	10.80	48.05	59.88	35.41	23.00	24.40	21.60	13.92
Malta	6.20	40.66	52.98	26.13	24.70	26.30	23.20	40.71
Monaco	–	–	–	–	–	–	–	–
Montenegro	8.01	26.90	42.40	11.40	32.00	30.90	33.20	22.75
Netherlands (Kingdom of the)	8.70	31.69	43.41	19.68	21.30	23.50	19.00	9.41
North Macedonia	5.76	9.60	14.66	4.81	–	–	–	26.10
Norway	7.48	33.35	45.17	20.75	14.20	14.90	13.50	35.12
Poland	11.92	38.46	50.97	25.82	23.60	27.10	20.10	36.97
Portugal	11.22	41.65	55.16	28.66	25.60	30.50	20.70	51.65
Republic of Moldova	14.13	27.44	38.40	16.70	29.70	52.40	7.00	10.77
Romania	17.06	42.12	54.64	29.88	30.00	38.60	21.50	36.76
Russian Federation	10.51	19.96	31.02	9.31	29.20	41.10	17.40	18.11
San Marino	–	–	–	–	–	–	–	25.66
Serbia	9.03	32.90	50.00	15.80	39.50	39.90	39.10	44.85
Slovakia	10.97	37.34	49.68	24.55	32.40	36.30	28.50	23.30
Slovenia	10.90	29.65	40.29	17.78	20.10	21.80	18.50	18.97
Spain	10.97	34.34	46.57	21.77	28.40	29.40	27.50	21.85
Sweden	9.61	32.74	44.30	20.48	22.70	28.90	16.40	8.70
Switzerland	9.16	35.61	47.59	23.38	25.50	28.20	22.90	19.03
Tajikistan	0.73	3.18	5.28	1.31	–	–	–	35.74
Türkiye	2.20	2.65	4.41	0.98	30.50	41.20	19.80	44.39
Turkmenistan	3.02	5.05	8.34	2.22	5.60	10.70	0.50	12.09
Ukraine	7.43	21.88	31.38	12.52	24.90	38.40	11.50	12.76
United Kingdom	10.86	33.26	45.12	21.31	14.20	16.10	12.40	18.98
Uzbekistan	2.06	4.33	7.16	1.83	16.70	32.40	1.00	31.75
WHO European Region	9.09	25.09	34.89	15.26	25.30	32.00	18.50	24.97

Note: "–" = no data available.

Table A3.5. Biological risk factors: raised blood pressure; raised blood glucose; overweight and obesity

	Biological risk factors								
	Age-standardized prevalence (%) among persons aged 18 years and over								
	Raised blood pressure (SBP ≥ 140 mmHg and/or DBP ≥ 90 mmHg)			Raised blood glucose (plasma glucose ≥ 7.0 mmol/L or on medication)		Overweight (BMI ≥ 25 kg/m²)		Obesity (BMI ≥ 30 kg/m²)	
	Both sexes	Males	Females	Males	Females	Males	Females	Males	Females
Country	**2019**	**2019**	**2019**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**
Albania	38.25	40.32	36.06	12.28	9.43	66.45	57.69	21.38	25.20
Andorra	20.79	25.06	16.37	8.84	5.66	56.53	39.25	20.46	15.55
Armenia	43.15	44.94	41.58	12.81	10.57	51.36	57.52	18.98	27.98
Austria	24.64	27.17	22.04	5.69	4.70	56.54	33.38	18.45	12.26
Azerbaijan	35.33	36.11	34.64	11.32	15.36	59.07	63.58	19.51	32.58
Belarus	44.17	48.16	40.26	7.72	7.72	61.04	49.91	19.26	22.64
Belgium	18.62	22.08	15.07	6.72	6.69	55.33	46.84	19.16	20.89
Bosnia and Herzegovina	36.92	41.40	32.45	13.33	12.93	66.60	46.61	21.52	20.63
Bulgaria	34.87	40.31	29.31	12.26	9.23	61.03	42.29	23.14	17.88
Croatia	38.92	43.84	34.15	11.58	6.68	71.64	56.23	33.61	27.16
Cyprus	20.55	24.98	16.23	8.88	5.74	61.82	45.57	25.50	20.23
Czechia	26.82	34.06	19.57	9.35	6.16	68.36	50.20	29.49	22.30
Denmark	32.58	39.46	25.68	2.76	1.90	54.26	35.56	15.34	11.22
Estonia	33.87	39.90	27.71	8.25	9.19	65.92	47.86	22.41	21.29
Finland	25.97	29.97	21.71	8.35	6.41	60.26	50.01	21.31	21.58
France	20.90	26.17	15.95	3.73	1.79	39.58	29.47	9.82	9.62
Georgia	36.98	40.42	33.67	9.30	9.22	68.24	62.43	33.32	34.90
Germany	16.29	19.52	13.02	8.01	5.25	62.65	44.87	22.33	18.43
Greece	20.92	26.15	15.79	8.66	5.98	68.11	54.70	29.12	26.72
Hungary	37.42	45.74	29.29	13.13	9.42	70.95	53.17	35.22	27.90
Iceland	13.28	15.14	11.40	6.59	4.17	65.91	48.16	23.00	19.38
Ireland	24.62	30.14	19.27	8.46	7.21	68.91	60.74	29.62	27.15
Israel	21.19	25.04	17.46	9.25	6.75	60.67	47.99	23.12	21.80
Italy	24.33	29.51	19.22	9.45	5.08	56.40	41.84	17.39	17.02
Kazakhstan	29.16	30.50	27.88	10.63	9.67	57.48	48.40	18.31	18.04
Kyrgyzstan	36.76	34.81	38.31	10.90	12.81	55.90	59.40	24.02	28.34
Latvia	36.31	41.67	31.14	9.86	8.69	67.88	50.26	24.79	22.99
Lithuania	41.92	48.62	35.36	11.26	11.02	67.69	48.63	26.84	23.11
Luxembourg	21.54	26.77	16.04	7.27	4.58	60.23	42.51	20.31	16.53
Malta	16.26	19.46	12.91	12.31	6.91	71.42	56.71	35.25	28.70
Monaco	–	–	–	–	–	–	–	–	–
Montenegro	34.75	40.48	29.15	12.37	9.19	58.00	41.74	20.47	15.42
Netherlands (Kingdom of the)	23.52	28.76	18.24	6.83	5.90	52.31	39.54	14.54	14.53
North Macedonia	34.84	40.32	29.26	12.42	9.50	67.85	55.43	28.09	26.74
Norway	21.80	25.17	18.19	6.72	4.52	66.15	48.45	20.47	17.74
Poland	33.29	39.76	26.71	12.44	9.19	73.92	51.40	31.05	23.69
Portugal	17.89	22.79	13.45	9.53	5.47	60.30	49.32	21.21	22.19
Republic of Moldova	44.26	45.69	42.58	9.22	9.05	67.86	54.18	21.08	24.12
Romania	34.11	40.39	27.86	14.29	12.11	73.78	56.06	37.07	30.72
Russian Federation	36.43	40.61	32.37	7.65	8.32	66.58	50.39	23.44	24.00
San Marino	–	–	–	–	–	–	–	–	–
Serbia	34.53	40.16	28.92	12.30	9.36	67.33	40.93	25.54	19.27
Slovakia	27.82	33.16	22.61	10.90	6.91	72.01	48.82	30.38	23.06
Slovenia	34.99	40.52	29.10	12.20	9.34	65.85	42.63	24.70	13.69
Spain	18.64	23.63	13.62	4.64	2.64	59.93	39.84	18.69	12.59
Sweden	24.18	28.31	19.91	6.29	3.93	59.62	41.11	16.74	13.71
Switzerland	13.85	17.13	10.59	5.54	3.12	52.17	28.98	14.64	9.61
Tajikistan	43.39	48.25	38.64	13.31	14.70	60.55	57.01	19.80	27.45
Türkiye	22.16	22.15	22.02	16.05	17.09	65.15	69.71	25.21	40.87
Turkmenistan	34.52	34.39	34.61	13.87	16.32	59.71	54.13	18.77	23.55
Ukraine	37.10	40.06	34.41	8.22	9.01	57.79	53.88	19.91	26.47
United Kingdom	18.51	20.74	16.30	9.68	7.92	65.47	57.52	26.08	27.60
Uzbekistan	38.16	41.43	34.94	16.75	21.41	60.57	63.89	26.79	32.68
WHO European Region	27.22	30.94	23.58	9.30	8.10	61.90	49.93	22.34	22.75

Note: BMI: body mass index; DBP: diastolic blood pressure; SBP: systolic blood pressure; "–": no data available.

Table A3.6. Mortality from suicide and intentional self-harm; cancer incidence

	Suicide and intentional self-harm			Cancer incidence			
	Age-standardized death rates, per 100 000, all ages			Cancer incidence per 100 000 population			
				All sites		Lung	Female breast
	Both sexes	Males	Females	Males	Females		
Country	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**	**2022**
Albania	–	–	–	190.13[d]	188.58[d]	27.62[d]	47.62[d]
Andorra	3.64[c]	7.03[c]	0.00[c]	–	–	–	–
Armenia	1.51	2.63	0.67	263.26	284.06	29.74	90.75
Austria	9.37[b]	15.58[b]	3.78[b]	553.19[b]	457.99[b]	58.79[b]	131.69[b]
Azerbaijan	–	–	–	106.53[d]	112.46[d]	12.40[d]	35.54[d]
Belarus	17.15[d]	31.40[d]	5.78[d]	595.79[d]	518.43[d]	47.43[d]	93.05[d]
Belgium	13.34[c]	19.78[c]	7.18[c]	647.35[c]	546.23[c]	76.94[c]	179.44[c]
Bosnia and Herzegovina	0.00	0.00	0.00	138.11[d]	136.24[d]	31.76[d]	49.69[d]
Bulgaria	6.24[b]	10.46[b]	2.51[b]	423.00[b]	363.24[b]	36.74[b]	87.22[b]
Croatia	11.57[b]	19.63[b]	4.50[b]	707.03[b]	578.16[b]	86.67[b]	145.60[b]
Cyprus	2.73[b]	3.45[b]	2.03[b]	514.57[c]	407.76[c]	49.44[c]	138.76[c]
Czechia	10.01[b]	16.16[b]	4.29[b]	1 025.24	915.52	63.27	144.46
Denmark	7.53[b]	11.10[b]	4.14[b]	811.97[c]	740.58[c]	87.04[c]	165.92[c]
Estonia	12.72	20.76	5.94	647.31[b]	592.15[b]	58.94[b]	111.28[b]
Finland	12.48[b]	17.40[b]	7.71[b]	697.98[b]	622.72[b]	51.58[b]	182.15[b]
France	11.24[c]	17.74[c]	5.37[c]	651.83[d]	528.03[d]	71.42[d]	174.37[d]
Georgia	5.25	9.78	1.10	277.74	313.45	20.12	96.63
Germany	8.48[c]	13.19[c]	4.05[c]	638.04[c]	549.27[c]	68.17[c]	167.46[c]
Greece	3.60[c]	5.97[c]	1.39[c]	–	–	–	–
Hungary	13.73	22.99	5.86	960.05	997.77	106.74	166.63
Iceland	8.38	12.35	4.13	501.83	493.03	47.31	147.42
Ireland	8.97[d]	13.58[d]	4.46[d]	505.06[c]	419.68[c]	50.60[c]	115.44[c]
Israel	4.59[b]	7.17[b]	2.14[b]	315.52[c]	364.33[c]	28.41[c]	99.41[c]
Italy	4.85[c]	7.90[c]	2.01[c]	641.20[d]	559.39[d]	63.46[d]	188.41[d]
Kazakhstan	12.26[b]	21.85[b]	4.17[b]	166.95[b]	211.97[b]	19.02[b]	51.35[b]
Kyrgyzstan	7.12[d]	11.85[d]	2.81[d]	78.54[d]	95.08[d]	7.22[d]	19.21[d]
Latvia	11.54[b]	21.96[b]	2.64[b]	649.74[d]	568.03[d]	57.92[d]	107.95[d]
Lithuania	15.44	27.83	5.15	702.93[d]	551.53[d]	49.65[d]	103.53[d]
Luxembourg	6.91	10.11	3.76	405.53[d]	381.50[d]	36.05[d]	151.66[d]
Malta	4.00[c]	5.01[c]	2.86[c]	477.87[c]	451.76[c]	35.18[c]	137.86[c]
Monaco	–	–	–	–	–	–	–
Montenegro	4.74[d]	7.37[d]	2.34[d]	–	–	–	–
Netherlands (Kingdom of the)	9.65	13.41	5.96	774.42	661.52	84.29	174.85
North Macedonia	4.99[b]	7.17[b]	2.99[b]	–	–	–	–
Norway	11.19[c]	16.15[c]	6.11[c]	721.48[b]	646.04[b]	64.70[b]	148.92[b]
Poland	11.09[b]	19.67[b]	3.00[b]	461.72[b]	447.95[b]	54.57[b]	108.18[b]
Portugal	7.34[d]	11.89[d]	3.49[d]	649.31[d]	486.17[d]	50.68[d]	156.37[d]
Republic of Moldova	12.75[d]	23.82[d]	3.12[d]	295.91[d]	270.42[d]	26.09[d]	60.88[d]
Romania	7.85[d]	14.05[d]	1.99[d]	347.39[d]	269.52[d]	38.77[d]	62.48[d]
Russian Federation	10.79[d]	20.02[d]	3.17[d]	427.98[d]	443.58[d]	40.96[d]	93.98[d]
San Marino	0.00	0.00	0.00	1 185.63[d]	963.41[d]	23.98[d]	248.24[d]
Serbia	8.73	14.42	3.64	657.98[c]	545.63[c]	101.75[b]	126.79[b]
Slovakia	6.24[b]	10.98[b]	1.96[b]	636.92[d]	601.02[d]	45.53[d]	96.69[d]
Slovenia	13.25[c]	22.17[c]	4.75[c]	773.36[c]	678.91[c]	74.42[c]	139.15[c]
Spain	6.85[b]	10.49[b]	3.45[b]	–	–	–	–
Sweden	10.86	15.48	6.18	781.06	714.88	43.12	210.33
Switzerland	9.64[b]	13.98[b]	5.52[b]	594.70[c]	479.90[c]	57.23[c]	148.09[c]
Tajikistan	2.22[d]	3.23[d]	1.23[d]	28.66[d]	43.16[d]	1.35[d]	10.66[d]
Türkiye	4.16[d]	6.53[d]	1.87[d]	275.77[d]	218.45[d]	35.42[d]	56.38[d]
Turkmenistan	2.40[d]	3.54[d]	1.34[d]	68.80[d]	90.74[d]	4.91[d]	18.94[d]
Ukraine	12.97[d]	24.00[d]	3.89[d]	271.59[c]	257.37[c]	24.50[c]	54.75[c]
United Kingdom	8.05[c]	12.36[c]	3.85[c]	447.18[c]	414.15[c]	55.51[c]	117.49[c]
Uzbekistan	6.91[d]	9.22[d]	4.76[d]	62.28[d]	84.64[d]	5.01[d]	22.26[d]
WHO European Region	8.62[c]	14.25[c]	3.52[c]	462.00[c]	418.04[c]	48.32[c]	110.37[c]

Note: "–": no data available.
[a] 2023; [b] 2021; [c] 2020; [d] 2014–2019.

Table A3.7. Distance to target: mortality, reported and estimated; behavioural and biological risk factors

	Distance to target						
	Distance between target line and observed value in last available year from bullseye plot						
	Reported mortality SDG	Estimated mortality SDG	Alcohol use	Tobacco use	Insufficient physical activity	Raised blood pressure	Obesity
Country	**2022**	**2019**	**2022**	**2022**	**2022**	**2019**	**2022**
Albania	–	-3.22	-6.12	0.76	25.38	6.91	29.06
Andorra	12.92[c]	–	7.67	10.75	-7.97	-2.62	9.29
Armenia	-0.24	-0.74	-1.91	5.15	20.90	8.54	20.58
Austria	-0.76[b]	-0.69	6.88	-5.76	-29.20	-3.58	8.73
Azerbaijan	–	1.86	27.45	2.95	17.87	9.08	23.24
Belarus	0.96[d]	2.03	-11.10	3.44	-7.58	6.05	2.99
Belgium	-3.08[c]	0.34	-8.70	7.43	-39.95	-3.04	12.75
Bosnia and Herzegovina	-1.09	2.38	17.23	5.84	32.20	4.08	21.16
Bulgaria	6.27[b]	3.13	13.46	7.35	35.99	3.78	17.16
Croatia	1.96[b]	-0.04	6.45	11.52	50.15	6.11	29.44
Cyprus	1.35[b]	-3.02	-8.79	7.49	7.20	-2.01	7.24
Czechia	1.44[b]	0.15	10.35	7.40	11.72	1.22	18.44
Denmark	-1.88[b]	-0.40	4.65	-8.75	-55.16	0.83	6.19
Estonia	0.17	-1.68	11.30	-0.07	23.71	3.72	7.36
Finland	0.96[b]	-0.26	-14.88	-1.24	-85.32	1.74	11.72
France	-0.04[c]	1.91	-2.43	10.40	-32.14	0.41	-24.63
Georgia	-0.88	2.52	14.45	9.60	35.87	6.57	25.89
Germany	1.04[c]	1.89	4.84	-0.72	-31.87	-8.18	-0.20
Greece	2.27[c]	1.74	-9.32	-0.04	21.29	-0.46	14.55
Hungary	2.74	1.65	5.57	7.50	37.13	3.21	24.23
Iceland	4.17	1.15	17.22	-20.41	-3.67	-8.88	13.83
Ireland	-0.91[c]	-0.09	-1.07	-2.35	-36.76	1.09	13.95
Israel	-2.51[b]	0.27	8.88	1.81	-7.67	2.49	3.13
Italy	0.09[c]	0.09	21.17	7.33	4.44	-3.36	8.34
Kazakhstan	5.43[b]	-1.53	25.65	1.18	37.28	1.93	14.73
Kyrgyzstan	-0.10[d]	-4.41	-40.05	8.56	23.68	9.24	29.52
Latvia	5.81[b]	2.69	24.03	4.78	-14.40	2.91	12.95
Lithuania	0.70	-1.81	0.02	4.34	-0.32	2.77	11.08
Luxembourg	-0.09	3.40	1.30	5.43	-45.30	-11.63	1.28
Malta	-1.29[c]	2.61	2.51	4.84	-12.26	-7.05	7.26
Monaco	–	–	–	–	–	–	–
Montenegro	-6.57[d]	2.61	-12.97	6.98	22.30	3.77	20.91
Netherlands (Kingdom of the)	-0.45	0.59	0.53	0.50	-52.06	-5.70	6.12
North Macedonia	1.50[b]	0.70	24.25	–	23.33	3.65	22.71
Norway	-2.07[c]	0.13	13.22	-18.03	15.43	-3.71	16.39
Poland	-0.54[b]	-1.67	12.74	0.21	37.43	2.32	22.63
Portugal	2.40[d]	1.84	3.98	10.34	21.86	-9.78	16.77
Republic of Moldova	-0.55[d]	-0.26	31.42	13.15	-15.69	4.81	0.97
Romania	2.06[d]	2.16	8.44	6.33	45.39	2.35	41.84
Russian Federation	-0.07[d]	0.20	-16.79	8.44	39.80	0.88	9.83
San Marino	6.80	–	–	–	-6.21	–	–
Serbia	1.85	2.99	-2.45	7.84	6.29	2.19	22.13
Slovakia	2.64[b]	-1.29	6.80	10.81	3.78	0.76	26.44
Slovenia	-1.06[c]	-0.70	6.42	5.55	12.03	3.73	17.72
Spain	2.01[b]	1.00	18.16	6.46	-44.05	-7.73	-23.84
Sweden	-1.52	-0.20	9.44	-5.03	-115.76	-5.07	4.76
Switzerland	-1.65[b]	-0.50	0.70	8.44	-16.84	-9.84	2.46
Tajikistan	1.40[d]	1.86	13.13	–	30.65	9.06	33.44
Türkiye	-1.61[d]	1.71	5.10	8.62	18.09	0.78	13.37
Turkmenistan	0.00[d]	2.30	12.14	-11.16	-9.70	8.31	23.95
Ukraine	1.54[d]	2.47	-36.44	1.90	24.38	0.64	9.47
United Kingdom	1.46[d]	-0.11	10.56	-12.34	-48.49	0.79	9.39
Uzbekistan	0.37[d]	1.03	15.85	0.14	65.17	13.90	35.83
WHO European Region	–	0.78	2.18	3.64	2.11	0.50	8.35

Note: SDG: Sustainable Development Goal; "–": no data available.
[a] 2023; [b] 2021; [c] 2020; [d] 2014–2019.

Table A3.8. Theme in focus: progress monitor indicators (PIs) related to surveillance and governance

	PI 1. National NCD targets		PI 2. Mortality data		PI 3. Risk factor surveys		PI 4. National integrated NCD policy/strategy/ action plan	
Country	**2021**	**2023**	**2021**	**2023**	**2021**	**2023**	**2021**	**2023**
Albania	✓	✓	–	✗	–	–	✓	✓
Andorra	✗	✗	✓	✓	–	–	✗	✗
Armenia	✓	✓	✓	✓	✓	✓	✓	✓
Austria	✗	✗	✓	✓	–	–	✗	✗
Azerbaijan	●	✗	–	✗	✓	–	✓	✗
Belarus	✓	✓	✓	–	✓	✓	✓	✓
Belgium	✗	✗	✓	✓	✓	✓	✗	–
Bosnia and Herzegovina	✗	✗	–	✓	–	✗	✓	✓
Bulgaria	✓	✓	✓	✓	–	–	✓	✓
Croatia	✗	✗	✓	✓	–	–	✗	✗
Cyprus	✗	✗	–	✓	●	–	✗	✗
Czechia	✓	✓	✓	✓	–	–	–	✓
Denmark	✗	✗	✓	✓	–	–	✓	✓
Estonia	✓	✓	✓	✓	–	–	✓	✓
Finland	✓	✓	✓	✓	✓	✓	✓	✓
France	–	–	✓	✓	–	–	✗	✗
Georgia	✗	✓	–	✓	✓	–	✗	✓
Germany	–	–	✓	✓	–	–	✓	✓
Greece	✗	✗	✓	✓	–	–	–	–
Hungary	✗	✗	✓	✓	–	–	✗	–
Iceland	✗	✗	✓	✓	–	–	✗	✗
Ireland	–	–	✓	✓	–	–	✓	–
Israel	✗	✗	✓	✓	–	–	✓	–
Italy	✗	✗	✓	✓	✓	–	✓	✓
Kazakhstan	✓	✓	✓	✓	–	–	✓	✓
Kyrgyzstan	✓	✓	✓	✓	–	–	✓	✓
Latvia	✓	✓	✓	✓	–	–	✗	✓
Lithuania	✓	✓	✓	✓	–	–	✓	✓
Luxembourg	✗	✗	✓	✓	✓	–	✗	–
Malta	✗	✗	✓	✓	–	–	✗	✓
Monaco	✗	✗	✓	–	✗	✗	✗	✗
Montenegro	✓	✓	–	–	–	–	✓	✗
Netherlands (Kingdom of the)	–	–	✓	✓	–	–	✗	✗
North Macedonia	✗	✗	–	✓	–	–	✗	✗
Norway	✓	✓	✓	✓	–	–	✓	✗
Poland	✗	✗	✓	✓	–	–	✗	–
Portugal	✓	–	✓	✓	–	–	✓	✓
Republic of Moldova	✓	✓	✓	✓	–	–	✗	✓
Romania	✗	✗	✓	✓	–	–	✓	✗
Russian Federation	✓	✓	✓	✓	✓	✓	–	–
San Marino	✗	✗	✓	✓	✗	✗	✓	✓
Serbia	✗	✗	✓	✓	–	–	✓	✓
Slovakia	✓	✓	✓	✓	–	–	✓	✓
Slovenia	✓	✓	✓	✓	–	–	✓	✓
Spain	✗	✗	✓	✓	–	–	✓	✓
Sweden	✗	✗	✓	✓	–	–	✓	✗
Switzerland	✗	✗	✓	✓	–	–	✗	✗
Tajikistan	✓	✓	–	–	✓	✓	✓	✓
Türkiye	✓	✓	✓	✓	✓	✓	✓	✓
Turkmenistan	–	–	✓	–	✓	✓	✓	✓
Ukraine	✓	✓	✓	✓	✓	✓	✓	✓
United Kingdom	–	✓	✓	✓	✓	–	✓	✗
Uzbekistan	✓	✓	✓	✓	✓	✓	✓	✓
Countries at least partly achieving PIs (%)	**53**	**55** ↑	**100**	**96** ↓	**94**	**94** –	**66**	**70** ↑
Countries fully achieving PIs (%)	**42**	**43** ↑	**85**	**87** ↑	**28**	**19** ↓	**60**	**55** ↓

↑ Increase in percentage of countries fully or partly achieving PI – No change in percentage of countries fully or partly achieving PI ↓ Decrease in percentage of countries fully or partly achieving PI

✓ Fully achieved – Partly achieved ✗ Not achieved ● Not known/no reply

Table A3.9. Theme in focus: progress monitor indicators (PIs) related to tobacco use

	PI 5. Tobacco demand reduction measures									
	(a) Increased excise taxes and prices		(b) Smokefree policies		(c) Large graphic health warnings/ plain packaging		(d) Bans on advertising, promotion and sponsorship		(e) Mass media campaigns	
Country	**2021**	**2023**	**2021**	**2023**	**2021**	**2023**	**2021**	**2023**	**2021**	**2023**
Albania	–	–	✓	✓	–	✓	✓	✓	✗	✗
Andorra	✓	✓	–	–	✗	✗	✗	✗	✗	✗
Armenia	✗	✗	–	–	✓	✓	–	✓	–	–
Austria	–	–	–	–	✓	✓	–	–	–	✗
Azerbaijan	✗	–	–	–	–	–	✓	✓	✗	–
Belarus	–	–	✗	✗	✓	✓	–	–	✓	–
Belgium	✓	✓	✗	✗	✓	✓	–	–	✗	✗
Bosnia and Herzegovina	✓	✓	✗	✗	✗	✗	–	✗	–	✗
Bulgaria	✓	✓	✓	✓	✓	✓	–	–	✗	✗
Croatia	✓	✓	–	–	✓	✓	–	–	✗	✗
Cyprus	–	–	–	–	✓	✓	–	–	–	–
Czechia	✓	✓	–	–	✓	✓	–	–	–	–
Denmark	✓	✓	✗	✗	✓	✓	–	–	–	✗
Estonia	✓	✓	✗	✗	✓	✓	–	–	✓	✓
Finland	✓	✓	✗	✗	✓	✓	✓	✓	–	–
France	✓	✓	–	–	✓	✓	–	–	✓	✓
Georgia	✓	–	–	–	✓	✓	–	–	✓	–
Germany	–	–	✗	✗	✓	✓	–	–	✓	–
Greece	✓	✓	✓	✓	✓	✓	–	–	✗	✗
Hungary	–	–	–	–	✓	✓	–	–	✗	–
Iceland	–	–	✗	✗	–	–	✓	✓	✗	✗
Ireland	✓	✓	✓	✓	✓	✓	–	–	✓	✓
Israel	✓	✓	–	–	✓	✓	✗	✗	✗	✓
Italy	✓	✓	✗	✗	✓	✓	–	–	✗	✗
Kazakhstan	–	–	–	–	✓	✓	–	–	✓	–
Kyrgyzstan	–	–	–	✓	✓	✓	–	✓	✗	✗
Latvia	✓	✓	–	–	✓	✓	–	–	✓	✗
Lithuania	–	✓	–	–	✓	✓	–	–	✗	–
Luxembourg	–	–	–	–	✓	✓	–	–	✗	✗
Malta	✓	✓	✓	✓	✓	✓	–	–	✗	✗
Monaco	●	●	✗	✗	✗	✗	✗	✗	✓	✓
Montenegro	✓	✓	–	–	✓	✓	–	–	✗	✗
Netherlands (Kingdom of the)	✓	✓	✗	✓	✓	✓	–	✓	✗	✓
North Macedonia	✓	✓	✓	✓	–	–	–	–	✗	✗
Norway	–	–	✓	✓	✓	✓	–	–	✓	✓
Poland	✓	✓	–	–	✓	✓	–	–	–	–
Portugal	✓	✓	–	–	✓	✓	–	–	✗	✗
Republic of Moldova	–	–	–	✓	✓	✓	✓	✓	✗	✗
Romania	–	–	✓	✓	✓	✓	–	–	✗	✗
Russian Federation	–	–	✓	✓	✓	✓	✓	✓	✓	✓
San Marino	●	–	–	–	✗	✗	–	–	✗	✗
Serbia	✓	✓	–	–	–	–	–	–	✗	✗
Slovakia	✓	✓	–	–	✓	✓	–	–	✗	✗
Slovenia	✓	✓	–	–	✓	✓	✓	✓	✗	✗
Spain	✓	✓	✓	✓	✓	✓	✓	✓	–	–
Sweden	–	–	✗	✗	✓	✓	–	–	–	✗
Switzerland	–	–	✗	✗	–	–	✗	✗	✗	✗
Tajikistan	✗	–	✓	✓	✓	✓	–	–	✗	✗
Türkiye	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Turkmenistan	✗	✗	✓	✓	✓	✓	–	–	✓	✓
Ukraine	–	–	–	✓	✓	✓	–	✓	✓	✓
United Kingdom	✓	✓	✓	✓	✓	✓	–	–	✓	✓
Uzbekistan	–	–	✗	✗	–	–	–	–	✗	–
Countries at least partly achieving PIs (%)	**89**	**94** ↑	**74**	**75** ↑	**92**	**92** –	**92**	**91** ↓	**47**	**49** ↑
Countries fully achieving PIs (%)	**53**	**53** –	**26**	**34** ↑	**79**	**81** ↑	**17**	**25** ↑	**28**	**23** ↓

↑ Increase in percentage of countries fully or partly achieving PI – No change in percentage of countries fully or partly achieving PI ↓ Decrease in percentage of countries fully or partly achieving PI

✓ Fully achieved – Partly achieved ✗ Not achieved ● Not known/no reply

Table A3.10. Theme in focus: progress monitor indicators (PIs) related to alcohol use

	PI 6. Alcohol use reduction measures								
	(a) Restrictions on physical availability			(b) Advertising bans or comprehensive restrictions			(c) Increased excise taxes		
Country	**2021**	**2023**		**2021**	**2023**		**2021**	**2023**	
Albania	–	–		✗	✗		–	–	
Andorra	–	–		✗	✗		–	–	
Armenia	–	–		–	–		–	✓	
Austria	✗	✗		–	✗		✗	✗	
Azerbaijan	–	–		●	–		–	–	
Belarus	–	–		✓	–		✓	–	
Belgium	–	–		✗	✗		–	✓	
Bosnia and Herzegovina	–	–		✓	✓		–	–	
Bulgaria	–	–		●	–		●	–	
Croatia	–	–		✗	–		✗	✗	
Cyprus	–	–		●	–		✗	–	
Czechia	–	–		✓	✓		–	–	
Denmark	–	✗		✗	✓		–	–	
Estonia	–	–		✓	✓		✓	–	
Finland	–	–		✓	✓		–	–	
France	–	–		✓	✓		–	✓	
Georgia	–	–		✓	✓		–	✓	
Germany	✗	✗		✗	–		✗	✗	
Greece	–	–		✗	✗		–	✗	
Hungary	●	–		●	–		✗	✗	
Iceland	✓	–		✓	✓		✓	–	
Ireland	–	–		✗	✗		–	–	
Israel	–	–		✓	✓		–	–	
Italy	–	–		–	–		✗	✗	
Kazakhstan	–	–		✓	✓		–	–	
Kyrgyzstan	–	–		✓	✓		✓	✓	
Latvia	–	–		✓	✓		–	–	
Lithuania	–	–		✓	✓		✓	–	
Luxembourg	–	–		●	–		–	–	
Malta	–	–		✗	✗		–	–	
Monaco	–	–		●	●		✗	✗	
Montenegro	–	–		✓	✗		✗	✓	
Netherlands (Kingdom of the)	–	–		✗	✗		–	–	
North Macedonia	–	–		✗	✗		–	✓	
Norway	–	–		✓	✓		✓	✓	
Poland	–	–		✓	✓		✗	–	
Portugal	–	–		✓	✓		–	–	
Republic of Moldova	–	–		–	–		✗	✓	
Romania	–	–		–	–		–	✓	
Russian Federation	–	–		✓	✗		–	–	
San Marino	✗	✗		✗	✗		✗	✗	
Serbia	–	–		●	●		–	–	
Slovakia	–	–		✗	–		–	–	
Slovenia	–	–		✓	✓		✗	✗	
Spain	–	–		–	✗		✗	–	
Sweden	–	–		✓	✓		–	–	
Switzerland	✗	✗		✓	✗		✗	✗	
Tajikistan	–	–		–	–		–	–	
Türkiye	–	–		✓	✓		–	✓	
Turkmenistan	✓	✓		✓	✓		✓	✓	
Ukraine	–	–		✓	–		–	–	
United Kingdom	●	–		✗	✗		–	✓	
Uzbekistan	–	–		✓	✓		–	–	
Countries at least partly achieving PIs (%)	**89**	**91**	↑	**60**	**68**	↑	**72**	**81**	↑
Countries fully achieving PIs (%)	**4**	**2**	↓	**47**	**40**	↓	**13**	**25**	↑

↑ Increase in percentage of countries fully or partly achieving PI – No change in percentage of countries fully or partly achieving PI ↓ Decrease in percentage of countries fully or partly achieving PI

✓ Fully achieved – Partly achieved ✗ Not achieved ● Not known/no reply

Table A3.11. Theme in focus: progress monitor indicators (PIs) related to nutrition

	PI 7. Unhealthy diet reduction measures								
	(a) Food reformulation policies	(b) Front-of-pack labelling policies	(c) Public food procurement and service policies	(d) Mass media campaign on healthy diet	(e) Marketing to children restrictions		(f) Marketing of breast-milk substitutes restrictions		
Country	**2023**	**2023**	**2023**	**2023**	**2021**	**2023**	**2021**	**2023**	
Albania	✗	✗	✓	✓	✓	✓	–	–	
Andorra	✗	✗	✗	✗	✗	✗	–	–	
Armenia	✗	✗	✓	✓	✗	✗	✓	✓	
Austria	✓	✗	✓	✗	✓	–	–	–	
Azerbaijan	✗	✗	✗	✓	✓	✗	–	–	
Belarus	✓	✗	✓	✓	✓	–	✗	✗	
Belgium	✓	✓	✓	✓	✓	–	–	–	
Bosnia and Herzegovina	✗	●	✓	✓	✓	–	–	–	
Bulgaria	✓	✗	✓	✓	✓	–	–	–	
Croatia	✓	✓	✓	✓	✓	–	–	–	
Cyprus	✓	✗	●	●	✗	✗	–	–	
Czechia	✓	✓	✓	✓	✓	✓	–	–	
Denmark	✓	✓	✓	✓	✓	✓	–	–	
Estonia	✓	✗	✓	✓	✓	–	–	–	
Finland	✓	✓	✓	✓	✓	✓	–	–	
France	✓	✓	✓	✓	✓	–	–	–	
Georgia	✓	✓	✓	✗	✗	✗	–	–	
Germany	✓	✓	✓	✓	✓	✓	–	–	
Greece	✓	✗	✓	✓	✓	–	–	–	
Hungary	✓	✗	✓	✗	✓	✓	–	–	
Iceland	✓	✓	✓	✓	✓	✓	–	–	
Ireland	✓	✗	✓	✓	✓	✓	–	–	
Israel	✓	✓	✓	✓	✓	–	✗	✗	
Italy	✓	✓	✓	✗	✓	–	–	–	
Kazakhstan	✓	✗	✓	✓	✗	✗	–	–	
Kyrgyzstan	✓	✗	✓	✓	✗	✗	–	–	
Latvia	✓	✗	✓	✗	✓	✓	–	–	
Lithuania	✓	✓	✓	✓	✓	✓	–	–	
Luxembourg	✓	✓	✓	✓	✓	✗	–	–	
Malta	✓	✗	✓	✓	✓	✓	–	–	
Monaco	✗	✓	✓	✓	✗	✗	–	–	
Montenegro	✓	✗	✗	✓	✗	✗	✗	–	
Netherlands (Kingdom of the)	✓	✓	✓	✓	✓	–	–	–	
North Macedonia	✓	✗	✓	✗	✗	✗	–	–	
Norway	✓	✓	✓	✓	✓	✓	–	–	
Poland	✓	✓	✓	✓	✓	✓	–	–	
Portugal	✓	✗	✓	✓	✓	✓	–	–	
Republic of Moldova	✓	✗	✓	✓	✓	✗	–	–	
Romania	✓	✗	✓	✓	✗	✗	–	–	
Russian Federation	✓	✓	✓	✓	✓	–	–	–	
San Marino	✗	✗	✓	✗	✗	✗	–	–	
Serbia	✓	✗	✓	✓	✓	✓	–	–	
Slovakia	✓	●	✓	✗	✗	✗	–	–	
Slovenia	✓	✓	✓	✓	✓	–	–	–	
Spain	✓	✓	✓	✓	✓	–	–	–	
Sweden	✓	✓	✓	✗	✓	✓	–	–	
Switzerland	✓	✓	✓	✓	✓	–	–	–	
Tajikistan	✗	✗	✓	✓	✓	–	–	–	
Türkiye	✓	✗	✓	✗	✓	✓	–	–	
Turkmenistan	✓	✗	✗	✗	✗	✗	–	–	
Ukraine	✓	●	✓	✓	✗	✗	–	–	
United Kingdom	✓	✓	✓	✓	✓	✓	–	–	
Uzbekistan	✓	✓	✓	✓	✓	✗	–	–	
Countries at least partly achieving PIs (%)	**85**	**45**	**91**	**75**	**74**	**66** ↓	**94**	**96** ↑	
Countries fully achieving PIs (%)	**85**	**45**	**91**	**75**	**74**	**34** ↓	**2**	**2** –	

↑ Increase in percentage of countries fully or partly achieving PI – No change in percentage of countries fully or partly achieving PI ↓ Decrease in percentage of countries fully or partly achieving PI

✓ Fully achieved – Partly achieved ✗ Not achieved ● Not known/no reply

Table A3.12. Theme in focus: progress monitor indicators (PIs) related to physical activity, NCD management and human papillomavirus vaccination

	PI 8. Public education and awareness campaign on physical activity		PI 9. Guidelines for the management of cancers, cardiovascular diseases, diabetes and chronic respiratory diseases		PI 10. Essential medicines and technologies for chronic respiratory diseases	PI 11. Vaccination programme against human papillomavirus (1–2 doses) for 9–14-year-old girls
Country	**2021**	**2023**	**2021**	**2023**	**2023**	**2023**
Albania	✓	✓	✓	✓	✓	–
Andorra	✗	✗	✗	✗	✓	–
Armenia	–	✓	–	✓	✓	–
Austria	✓	✓	–	–	✓	–
Azerbaijan	✓	✓	✓	✓	✓	✗
Belarus	✓	–	✓	✓	✓	✗
Belgium	✓	✓	✓	✓	✓	–
Bosnia and Herzegovina	✓	✓	✓	✓	✓	✗
Bulgaria	✓	✓	✓	✓	✓	–
Croatia	✓	✓	✓	✓	✓	–
Cyprus	✓	✓	●	●	✓	–
Czechia	✓	✓	✓	✓	✓	–
Denmark	✓	✓	✓	✓	✓	✓
Estonia	✓	✓	✓	✓	✓	–
Finland	✓	✓	✓	✓	✓	–
France	✓	✓	✓	✓	✓	–
Georgia	✓	✓	✓	✓	✓	–
Germany	✓	✓	✓	✓	✓	–
Greece	✓	✓	✓	✓	✓	–
Hungary	✓	✓	✓	✓	–	–
Iceland	–	✓	✓	✓	✓	✓
Ireland	✓	✓	✓	✓	✓	–
Israel	✓	✓	✗	–	✓	–
Italy	✓	✓	–	✓	✓	–
Kazakhstan	✓	✓	✓	✓	✓	✗
Kyrgyzstan	✓	–	✓	✓	–	–
Latvia	✓	✓	✓	✓	✓	–
Lithuania	✓	✓	✓	✓	✓	–
Luxembourg	✓	✓	✓	–	●	–
Malta	✓	✓	✗	✗	✓	–
Monaco	–	✗	✗	✓	✓	–
Montenegro	✓	✓	●	✓	✓	–
Netherlands (Kingdom of the)	✓	✓	✓	✓	✓	–
North Macedonia	✓	✓	✓	✓	✓	–
Norway	✓	✓	✓	✓	✓	✓
Poland	✓	✓	●	–	–	–
Portugal	✓	✓	✓	✓	✓	✓
Republic of Moldova	✓	✓	✓	✓	✓	–
Romania	✓	✓	✓	✓	–	✗
Russian Federation	✓	✓	✓	✓	✓	✗
San Marino	–	–	–	–	✓	–
Serbia	✓	✓	✓	✓	✓	✗
Slovakia	✓	✓	✓	✓	–	✗
Slovenia	✓	✓	✓	✓	✓	–
Spain	✓	✓	✓	✓	✓	–
Sweden	✓	✓	✓	✓	✓	✓
Switzerland	✓	✓	✓	✓	✓	–
Tajikistan	✗	✗	✓	✓	✓	✗
Türkiye	✓	✓	✓	✓	✓	✗
Turkmenistan	✓	✗	✓	✓	✓	✓
Ukraine	✓	–	✓	✓	–	✗
United Kingdom	✓	✓	✓	✓	✓	–
Uzbekistan	✓	✓	✓	✓	–	✓
Countries at least partly achieving PIs (%)	**96**	**92** ↓	**87**	**94** ↑	**98**	**79**
Countries fully achieving PIs (%)	**89**	**85** ↓	**79**	**85** ↑	**85**	**13**

↑ Increase in percentage of countries fully or partly achieving PI – No change in percentage of countries fully or partly achieving PI ↓ Decrease in percentage of countries fully or partly achieving PI

✓ Fully achieved – Partly achieved ✗ Not achieved ● Not known/no reply

Table A3.13. Theme in focus: overall summary of progress monitor indicators (PIs) achievement

	PIs fully achieved (%)			PIs at least partly achieved (%)		
Country	**2021**	**2023**		**2021**	**2023**	
Albania	37	50	↑	74	77	↑
Andorra	11	14	↑	37	41	↑
Armenia	37	59	↑	84	82	↓
Austria	26	27	↑	74	64	↓
Azerbaijan	32	23	↓	79	64	↓
Belarus	63	41	↓	89	82	↓
Belgium	53	55	↑	74	82	↑
Bosnia and Herzegovina	37	41	↑	79	59	↓
Bulgaria	63	55	↓	84	91	↑
Croatia	47	45	↓	74	82	↑
Cyprus	16	23	↑	53	68	↑
Czechia	58	64	↑	100	100	–
Denmark	53	64	↑	84	82	↓
Estonia	68	59	↓	95	91	↓
Finland	74	73	↓	95	95	↑
France	58	59	↑	95	95	↑
Georgia	47	55	↑	84	91	↑
Germany	53	50	↓	79	86	↑
Greece	42	45	↑	79	77	↓
Hungary	37	32	↓	68	82	↑
Iceland	53	55	↑	79	82	↑
Ireland	58	55	↓	95	91	↓
Israel	53	50	↓	74	86	↑
Italy	47	45	↓	74	77	↑
Kazakhstan	47	50	↑	89	86	↓
Kyrgyzstan	47	55	↑	84	86	↑
Latvia	58	55	↓	95	86	↓
Lithuania	63	64	↑	95	100	↑
Luxembourg	42	32	↓	74	82	↑
Malta	42	50	↑	74	77	↑
Monaco	16	27	↑	32	45	↑
Montenegro	37	41	↑	74	73	↓
Netherlands (Kingdom of the)	47	59	↑	79	91	↑
North Macedonia	21	41	↑	58	68	↑
Norway	74	73	↓	100	95	↓
Poland	47	45	↓	79	95	↑
Portugal	58	59	↑	95	91	↓
Republic of Moldova	42	59	↑	84	86	↑
Romania	37	41	↑	79	73	↓
Russian Federation	74	64	↓	100	91	↓
San Marino	16	18	↑	42	50	↑
Serbia	37	45	↑	79	77	↓
Slovakia	42	41	↓	74	77	↑
Slovenia	68	64	↓	89	91	↑
Spain	58	59	↑	89	91	↑
Sweden	47	50	↑	89	77	↓
Switzerland	42	36	↓	63	64	↑
Tajikistan	37	41	↑	79	77	↓
Türkiye	84	77	↓	100	86	↓
Turkmenistan	63	55	↓	79	73	↓
Ukraine	53	55	↑	89	86	↓
United Kingdom	63	68	↑	89	91	↑
Uzbekistan	53	55	↑	84	91	↑
WHO European Region	**48**	**49**	↑	**80**	**81**	↑

↑ Increase in percentage of countries fully or partly achieving PI – No change in percentage of countries fully or partly achieving PI ↓ Decrease in percentage of countries fully or partly achieving PI

References to Annex 3[1]

1. Transforming our world: the 2030 Agenda for Sustainable Development. New York: United Nations; 2015 (A/RES/70/1; https://undocs.org/A/RES/70/1).
2. Noncommunicable Diseases Global Monitoring Framework: indicator definitions and specifications. Geneva: World Health Organization; 2014 (https://cdn.who.int/media/docs/default-source/inaugural-who-partners-forum/gmf_indicator_definitions_version_nov2014438a791b-16d3-46f3-a398-88dee12e796b.pdf).
3. European Programme of Work 2020–2025: united action for better health. Copenhagen: WHO Regional Office for Europe; 2021 (https://iris.who.int/handle/10665/339209). Licence: CC BY-NC-SA 3.0 IGO.

1 All references were accessed on 13 August 2025.

Annex 4. Cost of productivity loss due to preventable and treatable mortality from noncommunicable diseases

The annual cost of productivity loss (CPL) due to preventable and treatable mortality from noncommunicable diseases (NCDs) in the WHO European Region is shown in Table A4.1.

Table A4.1. Annual CPL due to preventable mortality from NCDs (including from cancers) and treatable mortality from NCDs in the WHO European Region, last available year

Country	Preventable mortality due to NCDs (including cancers) (US$ million)	Preventable mortality due to cancers (US$ million)	Treatable mortality due to NCDs (US$ million)
San Marino (2022)	10.17	6.19	6.74
Andorra (2020)	23.25	9.86	14.32
Montenegro (2019)	67.07	33.26	49.58
Tajikistan (2017)	73.63	13.35	67.42
Malta (2020)	130.08	48.76	107.29
Kyrgyzstan (2019)	171.29	32.44	109.31
Iceland (2022)	209.56	87.06	145.10
North Macedonia (2021)	218.39	84.82	183.00
Cyprus (2021)	235.20	99.14	191.48
Azerbaijan (2007)	298.90	79.29	325.13
Georgia (2022)	329.78	95.20	322.57
Armenia (2022)	357.53	125.71	302.93
Bosnia and Herzegovina (2022)	409.38	174.82	327.62
Republic of Moldova (2018)	515.97	116.10	303.20
Luxembourg (2022)	596.90	262.83	329.08
Slovenia (2020)	809.44	385.68	369.64
Estonia (2022)	916.27	208.18	400.54
Uzbekistan (2019)	916.47	157.71	804.98
Latvia (2021)	1 288.06	312.49	751.66
Serbia (2022)	1 297.84	565.47	1 024.99
Croatia (2021)	1 448.90	606.71	942.68
Lithuania (2022)	1 904.99	561.89	1 260.63
Belarus (2018)	2 031.07	506.40	1 349.86
Bulgaria (2021)	2 048.36	628.99	1 725.65
Israel (2021)	2 069.15	1 016.79	1 850.73
Greece (2020)	2 283.47	1 115.53	1 582.78
Slovakia (2021)	2 441.57	695.44	1 709.02
Portugal (2019)	2 894.01	1 664.95	1 897.85

Table A4.1 (contd)

Country	Preventable mortality due to NCDs (including cancers) (US$ million)	Preventable mortality due to cancers (US$ million)	Treatable mortality due to NCDs (US$ million)
Norway (2020)	2 916.92	1 256.94	1 822.29
Finland (2021)	3 579.60	1 085.61	1 973.25
Sweden (2022)	3 811.32	1 435.86	2 726.99
Kazakhstan (2021)	4 275.74	732.93	2 850.61
Czechia (2021)	4 334.12	1 463.10	2 964.83
Ireland (2020)	4 340.57	1 827.57	2 564.79
Denmark (2021)	4 458.48	1 856.57	2 109.06
Hungary (2022)	4 859.10	1 650.24	3 009.14
Belgium (2020)	5 095.55	2 526.85	2 653.42
Austria (2021)	5 511.00	2 325.75	3 052.79
Switzerland (2021)	5 752.56	3 096.81	3 299.83
Romania (2019)	6 714.77	2 368.27	4 367.49
Türkiye (2019)	6 727.27	3 059.43	5 202.37
Netherlands (Kingdom of the) (2022)	9 574.78	5 287.50	5 331.27
Spain (2021)	13 392.60	7 636.84	8 888.18
Poland (2021)	13 531.89	4 606.25	8 509.71
Italy (2020)	16 094.66	9 173.29	12 171.33
France (2020)	24 789.61	14 423.14	13 511.23
United Kingdom (2020)	36 401.52	12 355.87	20 840.25
Germany (2020)	51 233.92	22 177.02	29 110.31
Albania (2020) (extrapolation)	*99.54*	*42.21*	*61.32*
Turkmenistan (2018) (extrapolation)	*852.29*	*212.50*	*566.44*
Ukraine (2021) (extrapolation)	*4 844.24*	*1 487.52*	*4 081.05*
Russian Federation (2018) (extrapolation)	*56 598.09*	*14 111.53*	*37 615.38*
Monaco	*n/a*	*n/a*	*n/a*
WHO European Region (five countries missing)	**253 392.67**	**110 040.90**	**155 414.93**
WHO European Region (including extrapolated missing countries except Monaco)	**315 786.83**	**125 894.66**	**197 739.12**
CIS (Russian Federation and Turkmenistan missing)	**8 640.60**	**1 763.94**	**6 113.45**
CIS (with extrapolation of Russian Federation and Turkmenistan)	**66 090.98**	**16 087.97**	**44 295.27**
EU14	**147 656.47**	**72 799.31**	**87 902.33**
EU13	**40 662.73**	**13 635.14**	**26 309.77**

Note: n/a: not available; for explanation of CIS, EU13 and EU14, see Annex 2.

Limitations in the calculation of CPL

CPL is calculated as the number of years of potential life lost (YPLL) between the ages of 35 and 75 multiplied by gross domestic product (GDP) per capita. GDP figures are nominal values for the years where mortality data were reported and have not been adjusted for inflation. The CPL approach has several important limitations. For example, it does not include direct medical costs or costs associated with absenteeism and presenteeism at the workplace; and the choice of age cut-off points has considerable implications.

The analysis utilizes the most recent year for which mortality data are available, which may not reflect current trends if the data are not up to date. Most countries provided mortality data for the years between 2019 and 2022. However, some countries, including Monaco (1987), Azerbaijan (2007), Albania (2010), Turkmenistan (2015), Tajikistan (2017), and the Republic of Moldova and Belarus (both 2018), only submitted data from years prior to 2019.

The analysis for preventable and treatable mortality from NCDs is restricted to countries that report cause-of-death data to WHO using the classifications given in the 10th revision of the International Classification of Diseases (ICD-10) in three- or four-digit format. For countries that do not report data with this level of detail – namely, Albania, the Russian Federation, Turkmenistan and Ukraine – YPLL due to avoidable mortality was extrapolated using mortality data from countries with similar age and sex distributions of cardiovascular (CVD) and cancer mortality. For each of these countries, GDP was used for the most recent year for which CVD and cancer mortality data were available.

Annex 5. Inequality in rates of between-country premature mortality due to noncommunicable diseases in the WHO European Region

Rates of between-country inequality in premature mortality due to noncommunicable diseases (NCDs) in the WHO European Region, measured by slope index of inequality (SII), are shown in Table A5.1.

Table A5.1. Between-country inequality in premature mortality in the WHO European Region; comparison of baseline year (2010) and follow-up year (last year available)

Indicator	Sex	Number of countries	Baseline		Follow-up		Comparison	
			SII	Confidence interval (95%)	SII	Confidence interval (95%)	Difference in SII	*p*-value
Premature mortality from four major NCDs	Both sexes	47	24.40	22.26–26.54	20.80	19.24–22.36	-3.60	0.008
	Males	47	34.24	31.25–37.24	30.18	27.99–32.36	-4.07	0.030
	Females	47	17.10	15.60–18.60	13.45	12.11–14.79	-3.65	<0.001
Premature mortality from CVDs	Both sexes	47	21.65	19.14–24.16	17.66	15.76–19.57	–3.99	0.013
	Males	47	30.21	26.86–33.56	25.77	23.25–28.29	-4.44	0.036
	Females	47	15.00	13.00–16.99	11.03	9.38–12.67	-3.97	0.003
Premature mortality from cancers	Both sexes	47	6.74	6.25–7.23	5.64	5.37–5.92	-1.10	<0.001
	Males	47	10.52	10.03–11.02	8.62	8.09–9.14	-1.91	0.000
	Females	47	4.59	4.11–5.07	3.91	3.51–4.31	-0.68	0.031
Preventable mortality due to NCDs	Both sexes	39	225.15	190.22–260.07	172.40	153.27–191.54	-52.74	0.009
	Males	39	346.50	299.79–393.21	274.49	246.49–302.48	-72.01	0.009
	Females	39	143.76	114.34–173.18	101.50	86.10–116.90	-42.26	0.013
Mortality due to preventable cancers	Both sexes	39	47.32	42.03–52.61	38.06	35.33–40.79	-9.26	0.003
	Males	39	92.88	86.82–98.94	70.46	66.56–74.36	-22.42	<0.001
	Females	39	27.78	24.40–31.16	22.58	19.95–25.20	-5.21	0.016
Treatable mortality from NCDs	Both sexes	39	169.25	143.40–195.09	138.69	122.87–154.51	-30.56	0.045
	Males	39	226.94	194.81–259.07	191.09	170.53–211.65	-35.85	0.061
	Females	39	129.01	108.24–149.79	99.30	85.50–113.10	-29.72	0.019

Note: CVD: cardiovascular disease.

Table A5.1 (contd)

Indicator	Sex	Number of countries	Baseline		Follow-up		Comparison	
			SII	Confidence interval (95%)	SII	Confidence interval (95%)	Difference in SII	*p*-value
Self-harm	Both sexes	42	16.36	14.68–18.04	12.64	12.02–13.25	-3.72	<0.001
	Males	42	30.01	26.67–33.36	22.33	21.33–23.32	-7.69	<0.001
	Females	42	6.62	6.26–6.98	6.10	5.66–6.48	-0.55	0.046
Alcohol consumption	Both sexes	51	12.69	11.57–13.82	11.65	10.70–12.61	-1.04	0.160
	Males	51	20.44	18.73–22.15	18.72	17.32–20.12	-1.72	0.122
	Females	51	6.12	5.58–6.66	5.56	5.08–6.03	-0.56	0.118
Tobacco use	Both sexes	49	21.29	19.29–23.29	24.88	23.10–26.65	3.59	0.008
	Males	49	34.55	33.03–36.07	35.49	33.26–37.71	0.94	0.486
	Females	49	33.23	30.44–36.02	34.52	32.49–36.55	1.29	0.453
Insufficient physical activity	Both sexes	52	30.84	28.11–33.57	33.99	31.68–36.3	3.15	0.080
	Males	52	26.65	24.35–28.95	29.47	27.57–31.37	2.82	0.061
	Females	52	35.81	32.65–38.97	39.45	36.47–42.43	3.64	0.096
Obesity	Both sexes	51	13.10	12.15–14.11	19.17	18.00–20.34	6.04	<0.001
	Males	51	13.84	12.83–14.85	19.20	17.63–20.78	5.36	<0.001
	Females	51	17.06	15.68–18.44	22.24	20.73–23.76	5.18	<0.001
High blood pressure	Both sexes	51	26.20	25.27–27.13	30.02	28.64–31.40	3.82	<0.001
	Males	51	27.01	25.83–28.19	31.07	29.60–32.54	4.06	<0.001
	Females	51	27.99	27.10–28.88	30.69	29.70–31.69	2.70	<0.001
Diabetes	Both sexes	51	7.60	6.51–8.69	11.19	10.21–12.17	3.59	<0.001
	Males	51	6.75	6.01–7.48	10.22	9.61–10.83	3.47	<0.001
	Females	51	8.70	7.30–10.10	12.63	11.20–14.06	3.93	<0.001
Air pollution from $PM_{2.5}$	Not applicable	53	33.95	29.04–38.86	28.34	23.72–32.97	-5.61	0.098

Note: $PM_{2.5}$: particulate matter with particles <2.5 micrometres in diameter.

Annex 6. Impact of coronavirus disease on rates of between-country premature mortality due to noncommunicable diseases in the WHO European Region

The effect of coronavirus disease on rates of between-country inequality in premature mortality due to noncommunicable diseases (NCDs) in the WHO European Region, measured by slope index of inequality (SII), is shown in Table A6.1.

Table A6.1 Between-country inequality in premature mortality in the WHO European Region, 2019 and 2021

Indicator	Sex	Number of countries	2019		2021		Comparison	
			SII	Confidence interval (95%)	SII	Confidence interval (95%)	Difference in SII	*p*-value
Premature mortality from four major NCDs	Both sexes	23	17.00	15.52–18.48	19.13	17.54–20.71	2.12	0.048
	Males	23	26.23	24.07–28.39	28.81	26.51–31.10	2.57	0.096
	Females	23	9.90	9.39–10.41	11.40	10.67–12.13	1.50	0.001
Premature mortality from CVDs	Both sexes	23	12.69	11.49–13.90	14.81	13.25–16.37	2.12	0.031
	Males	23	19.77	18.18–21.37	22.34	20.13–24.56	2.57	0.057
	Females	23	7.08	6.21–7.95	8.59	7.51–9.66	1.51	0.028
Premature mortality from cancers	Both sexes	23	5.86	5.40–6.32	5.73	5.32–6.14	-0.13	0.662
	Males	23	9.23	8.66–9.79	9.04	8.40–9.67	-0.19	0.643
	Females	23	3.60	3.08–4.12	3.59	3.04–4.14	-0.01	0.971
Preventable mortality due to NCDs	Both sexes	25	151.60	140.25–162.96	169.88	156.05–183.7	18.27	0.040
	Males	25	264.37	245.68–283.06	288.65	268.22–309.08	24.28	0.076
	Females	25	76.63	67.93–85.33	88.67	79.32–98.02	12.04	0.057
Treatable mortality from NCDs	Both sexes	25	117.70	106.22–129.17	137.34	124.41–150.27	19.65	0.023
	Males	25	170.24	154.33–186.15	196.63	177.82–215.44	26.39	0.032
	Females	25	81.62	72.65–90.59	95.13	85.65–104.62	13.51	0.037

Note: CVD: cardiovascular disease.



The WHO Regional Office for Europe

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