SUPPLEMENT 2021
TO THE EUROPEAN HEALTH REPORT

Projections for a selection of indicators for health-related
Sustainable Development Goals

World Health Organization

REGIONAL OFFICE FOR **Europe**

IHME

The World Health Organization was established in 1948 as the specialized agency of the United Nations serving as the directing and coordinating authority for international health matters and public health. One of WHO's constitutional functions is to provide objective and reliable information and advice in the field of human health. It fulfils this responsibility in part through its publications programmes, seeking to help countries make policies that benefit public health and address their most pressing public health concerns.

The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health problems of the countries it serves. The European Region embraces nearly 900 million people living in an area stretching from the Arctic Ocean in the north and the Mediterranean Sea in the south and from the Atlantic Ocean in the west to the Pacific Ocean in the east. The European programme of WHO supports all countries in the Region in developing and sustaining their own health policies, systems and programmes; preventing and overcoming threats to health; preparing for future health challenges; and advocating and implementing public health activities.

To ensure the widest possible availability of authoritative information and guidance on health matters, WHO secures broad international distribution of its publications and encourages their translation and adaptation. By helping to promote and protect health and prevent and control disease, WHO's books contribute to achieving the Organization's principal objective – the attainment by all people of the highest possible level of health.

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Abstract

The European Health Report is produced every three years as a flagship publication by the WHO Regional Office for Europe. The aims of the 2021 edition are to provide insight into Regional progress towards the health-related Sustainable Development Goals (SDGs) and to examine available date on the effects of the COVID-19 pandemic on population health, thereby focusing on health inequalities and how the pandemic is affecting these. In addition, the report describes how the Regional Office, through implementation of the European Programme of Work 2020–2025, aims to support Member States in tackling the major challenges in the Region and building back better after the pandemic. This Supplement of the European Health Report 2021 complements the Report and assesses whether the WHO European Region is on track to reach the health-related SDGs by presenting projections until 2030 for different scenarios for 12 SDG indicators, followed by information on key interventions necessary to stay on track and further improve, and potential reasons for a deterioration to occur.

Contents

Introduction

The European Health Report 2021 provides insight into progress within the WHO European Region towards the health-related Sustainable Development Goals (SDGs) as well as into the effects of the COVID-19 pandemic on population health, with a focus on health inequalities and how these are affected by the pandemic. This Supplement complements Chapter 2 of the Report which assesses whether the WHO European Region is on track towards reaching the health-related SDGs, by presenting projections until 2030 for different scenarios for 12 SDG indicators. The projections were developed by the Institute for Health Metrics and Evaluation (IHME). WHO technical units have reviewed the interpretation of the projections and provided further information on key interventions and frameworks in the Region.

Making projections and undertaking forecasting exercises have become an instrumental part of health system preparedness and resilience during the COVID-19 pandemic. As the effects of the pandemic on health systems and population health are not yet fully understood, other factors known to be important drivers for health – such as income, fertility and education – have been used to estimate the scenarios presented in this Supplement.

Reference scenario is what the IHME expects to happen based on trends in the past. Results are produced at country level and then combined to produce a regional forecast.

Better scenario is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress from the last 30 years. Country-level results are then combined to produce a regional forecast.

Worse scenario is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress from the last 30 years. Country-level results are then combined to produce a regional forecast.

In addition to historical trends, some of these projections to 2030 use the Sociodemographic Index (SDI) as a key driver. This is the geometric mean of lag-distributed income, fertility rate among women under 25 years of age and mean years of education and is derived from the Global Burden of Diseases (GBD) study *(1)*; it also incorporates the effects of the COVID-19 pandemic through projections of income per capita.

This Supplement to the European Health Report 2021 presents projections for the following 12 SDG indicators:

3.1.1
Maternal mortality ratio

3.2.1
Under-5 mortality

3.3.1
HIV incidence

3.3.2
Tuberculosis incidence
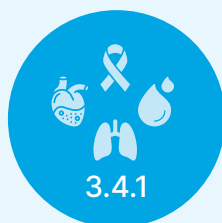
3.4.1
Noncommunicable disease mortality

3.4.2
Suicide mortality

3.5.2
Alcohol consumption

3.9.1
Air pollution

3.a.1
Smoking
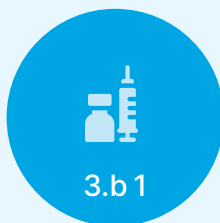
3.b 1
Vaccination coverage

3.c.1
Health worker density

5.2.1
Intimate partner violence

For every selected SDG indicator, the three scenarios described above are presented until the year 2030, together with the following information.

Technical notes by IHME provide a summary description which includes the SDG indicator definition, data sources, assumptions and key drivers used to make projections.

Background information covers the most important points about the situation of the SDG indicator in the WHO European Region, as described in Chapter 2 of the European Health Report 2021.

Key takeaways are messages about the change in the indicator until 2030, as shown in the IHME projections in the reference, better and worse scenarios.

Key interventions are the moves needed to achieve the reference and better scenarios; based on consultations with the WHO technical units, the most cost-effective and feasible interventions and frameworks for the WHO European Region are described.

Potential reasons for the worse scenario gives a snapshot of the issues of concern at the end of 2021.

Reference

1.   About GBD. In: IHME measuring what matters [website]. Seattle (WA): Institute for Health Metrics and Evaluation; 2021 (https://www.healthdata.org/gbd/about, accessed 15 December 2021).

Note: there can be discrepancies between the IHME estimates of SDG indicators and WHO/United Nations indicator data as presented in Chapter 2 of the Report. These reflect slight differences in indicator definitions, data sources, and reporting or estimation methods. In this supplement, IHME has provided further technical notes for each projection, whereas more information on methods and data sources for the European Health Report 2021 are provided in the annexes to that Report.

For more information contact:

Institute for Health Metrics and Evaluation

Population Health Building/Hans Rosling Center
3980 15th Ave NE
Seattle, WA 98195
United States of America
Tel.: +1 206 897 2800
Fax: +1 206 897 2899
email: engage@healthdata.org

Data and Digital Health unit
Division of Country Health Policies and Systems

WHO Regional Office for Europe
UN City
Marmorvej 51
DK-2100, Copenhagen Ø, Denmark
Tel.: +45 45 33 70 00
Fax: +45 45 33 70 01
email: euhiudata@who.int

3.1.1 maternal mortality ratio

Fig. 1. Estimated maternal mortality ratio among women aged 15–49 years per 100 000 live births in the WHO European Region, 2000–2020 and projection to 2030

Source: data and projection provided by the IHME, 2021.

Technical notes by the IHME
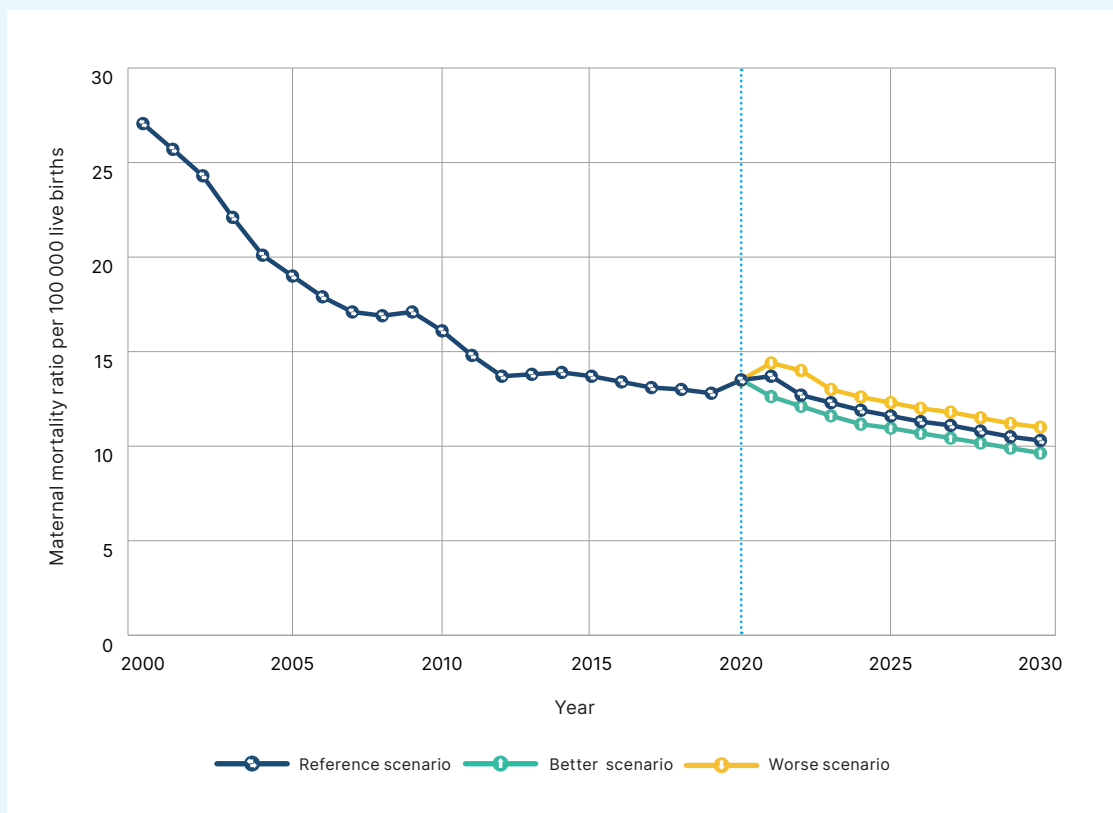
Summary description

The maternal mortality ratio is defined as the number of maternal deaths among women aged 15–49 years during a given time period per 100 000 live births during the same time period. It depicts the risk of maternal death relative to the number of live births and essentially captures the risk of death for a single pregnancy or live birth. Projections to 2030 use the SDI as a key driver, which incorporates projections of income per capita and the effects of the COVID-19 pandemic (e.g. COVID-19 deaths and mobility) and of direct and indirect maternal mortality in selected countries. The analysis showed no significant effect on direct maternal mortality; however, the COVID-19 pandemic had a significant effect on indirect maternal mortality, which has been incorporated into these projections.

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past and the relationships between maternal mortality and its drivers, including the SDI and age-specific fertility rates. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

Retrospective data sources and methods (2000–2020)

For additional information on data sources and estimation methods for the maternal mortality ratio, see the full modelling description on the IHME website *(1)*.

Disclaimer. The IHME projections are estimates and these can change with new data. Estimates are important for projecting future trends when data gaps exist but are no replacement for data from strong surveillance systems. The GBD data used in these projections (2019/2020) synthesize a large number of input sources to estimate mortality, causes of death and illness, and risk factors. The input sources are accessible through an interactive citation tool (http://ghdx.healthdata.org/gbd-2019/data-input-sources). WHO technical units have reviewed the interpretation of the projections, provided further information on key interventions and frameworks in the WHO European Region and were not involved in data curation or modelling.

Background information in the WHO European Region

- The maternal mortality ratio was 13 deaths per 100 000 live births in 2017 in the Region, with values ranging between two and 60 across countries. This is a wide gap between the countries with the lowest and the highest rates.

- All countries in the Region have already reached SDG 3.1: to reduce the global maternal mortality ratio to less than 70 per 100 000 live births by 2030.

- An additional target is to aim for "every country to reduce its maternal mortality ratio by at least two thirds from the 2010 baseline" by 2030 *(2)*. Twenty countries reduced their maternal mortality ratio by 25% in the 2010–2017 period.

- It is difficult to accurately measure maternal mortality, and model-based estimates of the maternal mortality ratio cannot be used for monitoring short-term trends.

Key takeaways

- Maternal mortality has decreased since 2000, although progress has slowed since 2010. There were 11 fewer maternal deaths per 100 000 live births in 2010 than in 2000, compared with 2.5 fewer maternal deaths per 100 000 live births in 2020 than in 2010.

- The IHME expects maternal mortality in the Region to decrease from the launch of the SDGs in 2015 through to 2030: by 25% on average, by 29% in the better scenario and by 20% in the worse scenario.

- Analysis of direct and indirect maternal mortality in selected countries showed no significant relationship between direct mortality and indicators of the COVID-19 pandemic (e.g. COVID-19 deaths, mobility); however, there was a significant effect on indirect maternal mortality and this was incorporated. Indirect maternal deaths are those that result from previous existing disease or a disease which developed during pregnancy and not from direct obstetric causes.

- Failure to act and prioritize maternal health during the recovery phase of the pandemic, which may be quite lengthy, would allow such consequences to become entrenched and would reverse gains made during past decades.

- Countries and health systems that do not prioritize maternal health, empower women or address gender equality will not be able to meet the SDG targets.

Key interventions necessary to achieve reference and better scenario projections

- The Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) *(3)* was developed to translate the SDG agenda into concrete guidance on how to accelerate progress through a multisectoral approach.

- The Regional Action Plan for Sexual and Reproductive Health *(4)* is translating this into action in the WHO European Region.

- Key interventions include improving access to health services for mothers, in particular for vulnerable populations at subnational level; implementing standards of care and guidelines; ensuring availability of all essential services in primary health care; providing quality antenatal care and effective referral mechanisms and pathways; and ensuring continuous quality improvement at all levels of care.

- Most maternal deaths are related to complications of childbirth and adverse events occurring after delivery. Assistance by competent health personnel working within an enabling environment is key to lowering maternal and newborn deaths.

- Introduction and effective implementation of a Maternal and Perinatal Deaths Surveillance and Response audit *(5)* is an effective quality improvement mechanism to eliminate preventable maternal deaths and enable countries to reach the relevant SDG target.

Potential reasons for worse scenario

- Access to skilled care during pregnancy and childbirth to ensure prevention, detection and management of complications should be part of all health systems. Skilled health professionals assisted 99% of births in the WHO European Region in 2014–2020. Nonetheless, the lowest coverage levels tend to be in the poorest countries, where maternal mortality ratios are also the highest.

- The refugee and migrant crisis has further increased inequities in maternal health and outcomes in the Region. In the European Union, maternal mortality ratios are higher for migrant women, who have less access to family planning and contraception, attend fewer and later antenatal care visits, and have poorer pregnancy outcomes. There are unclear legal provisions and entitlements to health care across the Region for refugees and migrants, which create significant barriers to access health systems in general and maternal health services in particular. Therefore, all Member States should ensure the elimination of such barriers and inequities.

References

1.   GBD modelling descriptions for European Health Report 2021. In: IHME measuring what matters [website]. Seattle (WA): Institute for Health Metrics and Evaluation (http://www.healthdata.org/policy-report/european-health-report-2021-gbd-methods-appendix, accessed 23 February 2022).

2.   Strategies toward ending preventable maternal mortality (EPMM). Geneva: World Health Organization; 2015 (https://apps.who.int/iris/bitstream/handle/10665/153540/WHO_RHR_15.03_eng.pdf, accessed 5 December 2021).

3.   The global strategy for women's, children's and adolescents' health (2016–2030): survive, thrive, transform. New York: United Nations; 2015 (https://www.who.int/life-course/partners/global-strategy/globalstrategyreport2016-2030-lowres.pdf, accessed 5 December 2021).

4.   Action plan for sexual and reproductive health: towards achieving the 2030 Agenda for Sustainable Development in Europe – leaving no one behind. Copenhagen: WHO Regional Office for Europe; 2016 (https://www.euro.who.int/__data/assets/pdf_file/0003/322275/Action-plan-sexual-reproductive-health.pdf, accessed 5 December 2021).

5.   Maternal and perinatal death and surveillance and response: materials to support implementation. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/9789240036666, accessed 5 December 2021).

3.2.1 under-5 mortality rate

Fig. 1. Estimated under-5 mortality per 1000 live births in the WHO European Region, 2000–2020 and projection to 2030
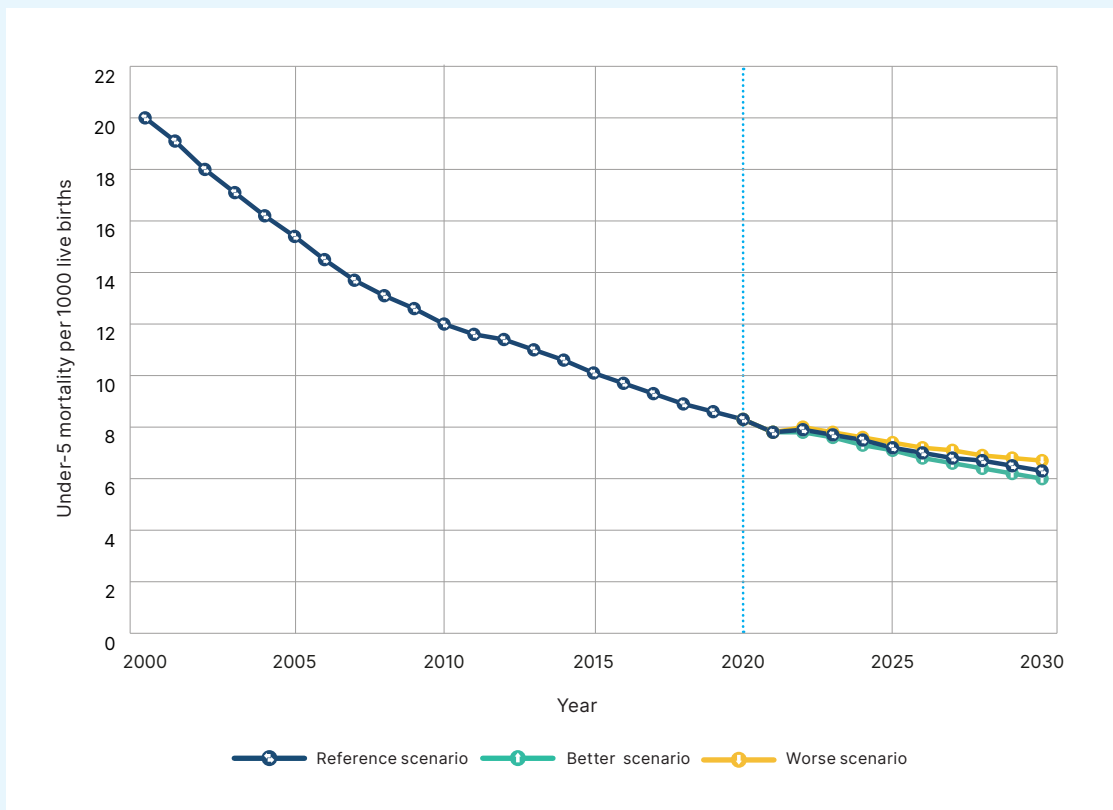
Source: data and projection provided by the IHME, 2021.

Summary description

The under-5 mortality rate is defined as the probability of death between birth and 5 years of age. It is expressed as number of deaths per 1000 live births. New and additional input mortality data have been incorporated into the mortality rate by IHME since the publication of the GBD 2019 study *(1)*. These new data primarily affect estimates of mortality rate in the most recent time period. Projections are based on a combination of key drivers, including GBD risk factors, selected interventions (e.g. vaccines) and the SDI. Indirect effects of the COVID-19 pandemic are incorporated through projections of income per capita (via the SDI) and through reductions in vaccine coverage. Additional short-term disruptions (2020–2021) from the COVID-19 pandemic incorporated the reductions seen in child deaths from infectious diseases observed during the pandemic (e.g. influenza, respiratory syncytial virus, measles or pertussis), driven primarily by social distancing and mask use.

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past and the relationships between child mortality and its drivers, including the SDI; risk factors associated with child mortality, informed by the GBD comparative risk assessment; and vaccination coverage for diphtheria–tetanus–pertussis, measles, pneumococcal vaccine and Haemophilus influenzae type B. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

Retrospective data sources and methods (2000–2020)

For additional information, see GBD 2019 Demographics Collaborators, 2020 *(1)*.

Disclaimer. The IHME projections are estimates and these can change with new data. Estimates are important for projecting future trends when data gaps exist but are no replacement for data from strong surveillance systems. The GBD data used in these projections (2019/2020) synthesize a large number of input sources to estimate mortality, causes of death and illness, and risk factors. The input sources are accessible through an interactive citation tool (http://ghdx.healthdata.org/gbd-2019/data-input-sources). WHO technical units have reviewed the interpretation of the projections, provided further information on key interventions and frameworks in the WHO European Region and were not involved in data curation or modelling.

Background information in the WHO European Region

- Child mortality is a key health system indicator that reflects both health status and access to basic health service interventions such as vaccination, medical treatment of infectious diseases, and adequate nutrition.

- In the WHO European Region, the average under-5 mortality rate was 8.0 deaths per 1000 live births in 2019, with large subregional differences (ranging from 1.7 to 42.0 deaths per 1000 live births).

- Children face the highest risk of dying in the neonatal period, that is, the first 28 days of life, with higher mortality rates in boys than in girls.

Key takeaways

- Substantial progress has been made in reducing child deaths since 2000. Most countries in the Region have reached SDG 3.2: to end preventable deaths of children under-5 years of age to at least as low as 25 per 1000 live births by 2030.

- Progress has slowed since 2010, with 8.0 fewer under-5 deaths per 1000 live births in 2010 than in 2000, compared with 3.7 fewer deaths per 1000 live births in 2020 than in 2010.

Key interventions necessary to achieve reference and better scenario projections

- The Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) *(2)* was developed to translate the SDG agenda into concrete guidance on how to accelerate progress through a multisectoral approach.

- The WHO Regional Office for Europe has developed a regional adaptation of the global strategy to serve the needs of the Region.

- In countries that have already achieved the SDG target, further reductions in mortality can be achieved by eliminating inequities in preventable deaths. WHO calls on Member States to address health equity through universal health coverage so that all children are able to access essential health services of good quality without undue financial hardship.

- Innovative and tailored approaches to increase access, coverage and quality of child health services require strategic direction and an optimal mix of community and facility-based care: quality of care is the key issue.

- Skilled delivery at birth, postnatal care, breastfeeding and adequate nutrition, vaccinations and treatment for common childhood diseases are all factors that improve the survival of younger children, while prevention of the leading causes of death for older children is centred on reducing accidents and injuries, notably drowning and road traffic injuries.

Potential reasons for worse scenario

- Infectious diseases, along with preterm birth, birth asphyxia and trauma, and congenital anomalies, will remain the leading causes of death for children under-5 unless major health system bottlenecks and quality of care are addressed.

- Lack of multisectoral efforts to overcome inequalities in the social determinants of health could impede further reductions in the under-5 mortality rate.

References

1.   GBD 2019 Demographics Collaborators. Global age-sex-specific fertility, mortality, healthy life expectancy (HALE), and population estimates in 204 countries and territories, 1950–2019: a comprehensive demographic analysis for the Global Burden of Disease Study 2019. Lancet. 2020;396(10258):1160–203. doi: 10.1016/S0140-6736(20)30977-6.

2.   The global strategy for women's, children's and adolescents' health (2016–2030): survive, thrive, transform. New York: United Nations; 2015 (https://www.who.int/life-course/partners/global-strategy/globalstrategyreport2016-2030-lowres.pdf, accessed 5 December 2021).

3.3.1 HIV incidence

Fig. 1. Estimated HIV incidence per 1000 population (all ages) in the WHO European Region, 2000–2020 and projection to 2030
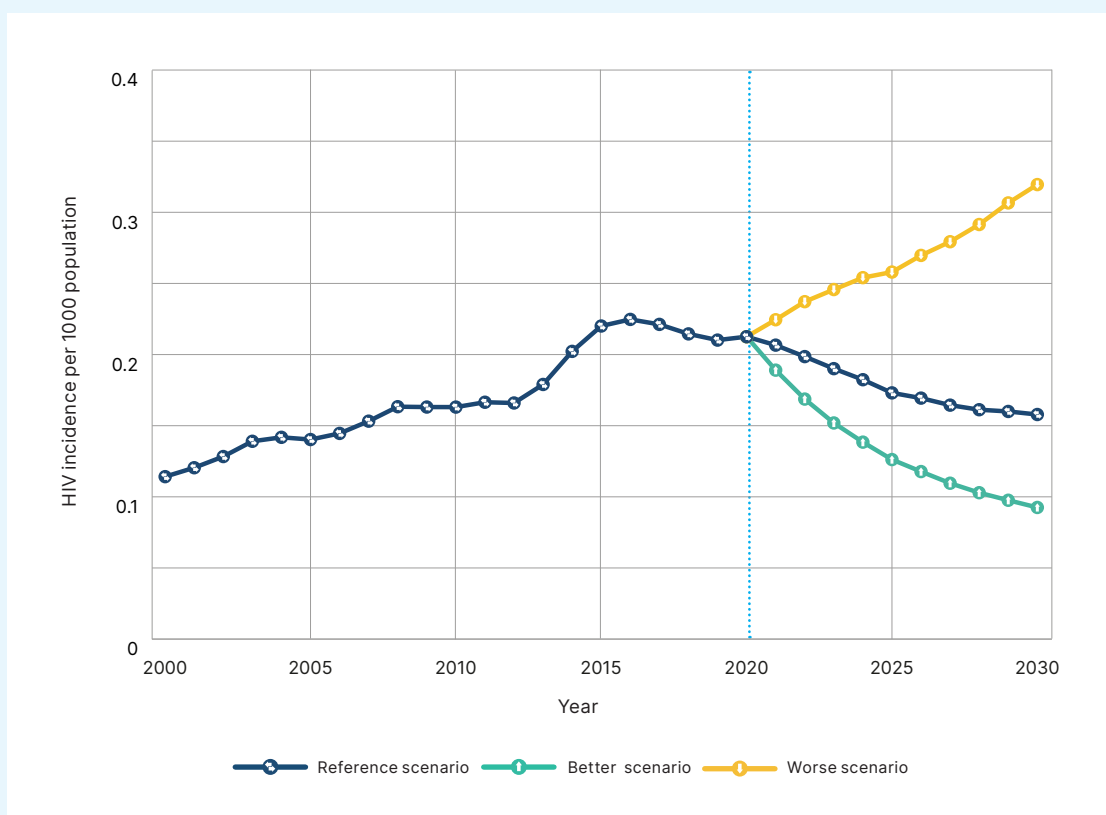
Source: data and projection provided by the IHME, 2021.

Summary description

The HIV incidence is estimated as new HIV infections per 1000 population. Forecasts of HIV incidence are based on forecasted provision of antiretroviral therapy (ART), coverage for prevention of maternal-to-child transmission, and incidence as inputs into a modified version of Avenir Health's Spectrum software. Adult ART is forecasted using ART prices and the expected spending on HIV care, which, in turn, is forecasted based on income per capita, including the effect of the COVID-19 pandemic. Changes to estimates are the result of additional data compiled by the Joint United Nations Programme on HIV and AIDS (UNAIDS) from 115 countries, including new ART coverage, maternal-to-child transmission coverage and incidence estimates. Previously, a COVID-19 scalar was utilized to reflect disrupted access to ART during the pandemic; preliminary UNAIDS data no longer support the assumption of disrupted access to ART because of the COVID-19 pandemic, but indirect effects were incorporated through disruptions to expected spending on HIV care via lag-distributed income.

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past and the relationships between the HIV incidence and its drivers, including ART coverage, maternal-to-child transmission coverage and the drivers of forecasts in ART coverage, including health spending on HIV care and ART prices. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

Technical notes by the IHME (contd)

Retrospective data sources and methods (2000–2020)
For additional information on data sources and estimation methods, see the full modelling description on the IHME website *(1)*.

Disclaimer. The IHME projections are estimates and these can change with new data. Estimates are important for projecting future trends when data gaps exist but are no replacement for data from strong surveillance systems. The GBD data used in these projections (2019/2020) synthesize a large number of input sources to estimate mortality, causes of death and illness, and risk factors. The input sources are accessible through an interactive citation tool (http://ghdx.healthdata.org/gbd-2019/data-input-sources). WHO technical units have reviewed the interpretation of the projections, provided further information on key interventions and frameworks in the WHO European Region and were not involved in data curation or modelling.

Background information in the WHO European Region

- Although the annual rate of HIV cases has declined globally, estimated HIV incidence has generally been increasing in the Region since 2010.

- The HIV epidemic in the Region is mainly concentrated in certain key populations – people who inject drugs, men who have sex with men, transgender people, sex workers, prisoners and migrants – and their sexual partners.

- The elimination target is a decrease of new HIV infections in the Region by 90% in 2030 from the 2010 baseline.

Key takeaways

- HIV incidence is expected to decrease slightly from 2020 but to remain at high levels (the same as in 2010) in the reference scenario, decrease towards the SDG targets in the better scenario, but significantly rise in the worse scenario.

- By 2030, in the better scenario HIV incidence will return to less than 0.1 per 1000 population, likely due to increased access to ART and better prevention among key populations, including linkage to care. The reference scenario shows a smaller decline in HIV incidence from 2020 to 2030 but no decline compared with the 2010 baseline.

- The worse scenario shows a sharp increase in HIV rates across the Region; in this scenario, HIV infection rates could nearly double in less than 10 years.

- Although not shown in the projections, it is important to consider that HIV prevention and testing services have been affected by the COVID-19 pandemic, with up to a 50% decrease in HIV tests during lockdowns in many countries and a corresponding decrease in the number of people newly started on ART. HIV service disruptions during the COVID-19 pandemic have slowed progress towards elimination *(2)*.

Key interventions necessary to achieve reference and better scenario projections

- Simplification and decentralization of HIV testing will ensure a high coverage of people living with HIV who know their status and are linked to care and treatment in a timely manner. The first step to achieving the UNAIDS/WHO 95–95–95 target is to have 95% of people knowing their status, and 95% of those who know their status receiving treatment *(3)*.

- Further optimization of ART and improvements in the quality and scale of treatment and care, as well as the prioritization of comprehensive prevention for key populations (including scale-up and harm reduction for pre-exposure prophylaxis through people-centred service delivery models), will enable HIV prevention, care and treatment to become more accessible, even for the most hard-to-reach populations. This will ensure that no one in the Region is left behind and that the worse scenario is avoided.

Potential reasons for worse scenario

- In the context of the COVID-19 pandemic, political commitment to achieve SDG 3.3 and eliminate HIV as a public health threat by 2030 needs to be revitalized, as does the commitment to fund HIV programmes.

- Major inequalities still exist in access to prevention, testing, care and treatment services across the Region, within countries, and even within subpopulations in the same country. To avoid the worse scenario, greater efforts need to be placed on reaching key populations, particularly people who inject drugs, men who have sex with men, transgender people, sex workers, prisoners and migrants, as well as the sexual partners of people in these groups *(4)*.

References

1.	GBD modelling descriptions for European Health Report 2021. In: IHME measuring what matters [website]. Seattle (WA): Institute for Health Metrics and Evaluation (http://www.healthdata.org/policy-report/european-health-report-2021-gbd-methods-appendix, accessed 23 February 2022).

2.	Ensuring PLHIV have continued access to treatment during COVID-19 pandemic. Copenhagen: WHO Regional Office for Europe; 2020 (https://www.euro.who.int/en/health-topics/communicable-diseases/hivaids/news/news/2020/11/ensuring-plhiv-have-continued-access-to-treatment-during-covid-19-pandemic, accessed 11 December 2021).

3.	Understanding fast-track: accelerating action to end the aids epidemic by 2030. Geneva: Joint United Nations Programme on HIV/AIDS; 2015 (https://www.unaids.org/sites/default/files/media_asset/201506_JC2743_Understanding_FastTrack_en.pdf, accessed 11 December 2021).

4.	Global AIDS strategy 2021–2026: end inequalities. End AIDS. Geneva: Joint United Nations Programme on HIV/AIDS; 2021 (https://www.unaids.org/en/resources/documents/2021/2021-2026-global-AIDS-strategy, accessed 11 December 2021).
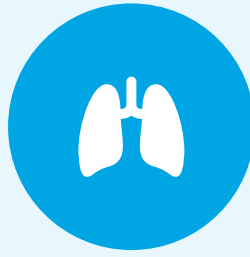
3.3.2 tuberculosis incidence

Fig. 1. Estimated tuberculosis incidence per 100 000 population (all ages) in the WHO European Region, 2000–2020 and projection to 2030

Source: data and projection provided by the IHME, 2021.

Technical notes by the IHME
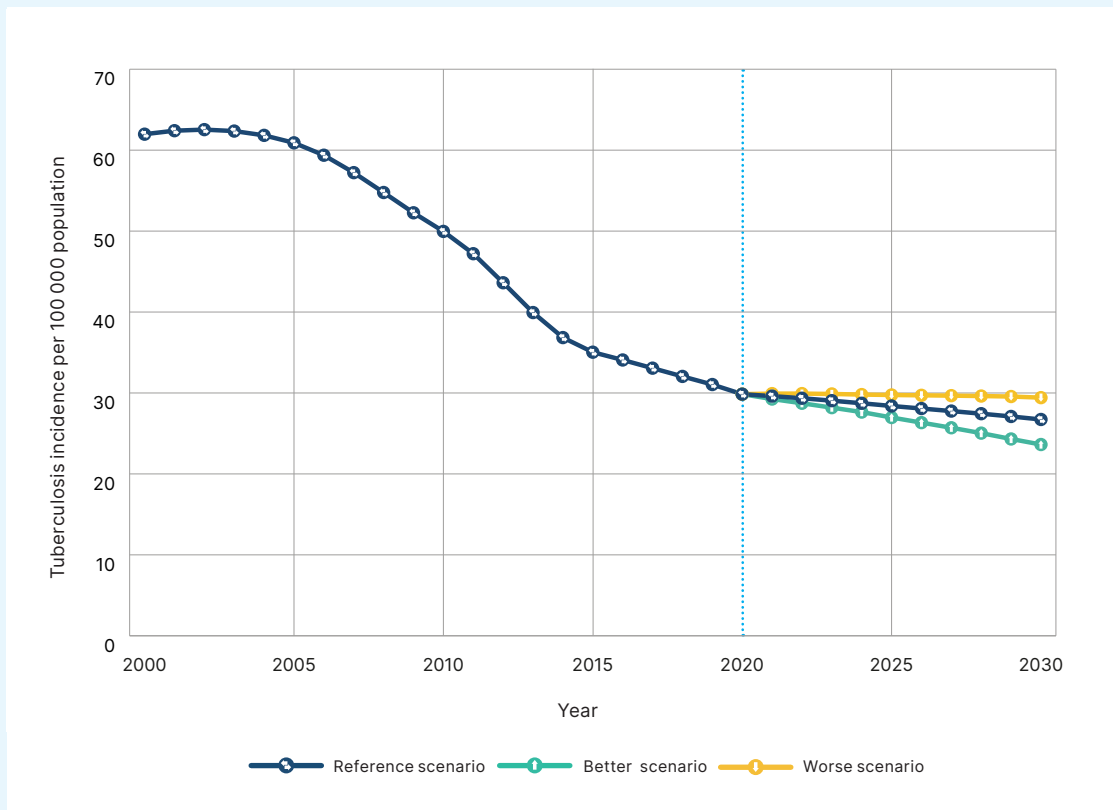
Summary description

The IHME estimates new and relapsed tuberculosis (TB) cases diagnosed within a given calendar year (incidence) using data from prevalence surveys, case notifications and cause-specific mortality estimates; these are used as inputs to a statistical model that enforces internal consistency among the estimates. In addition to historical trends, projections to 2030 uses the SDI, which incorporates the effects of the COVID-19 pandemic through projections of income per capita, as a key driver.

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past, and the relationships between the indicator and its driver, the SDI. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

Retrospective data sources and methods (2000–2020)

For additional information on data sources and estimation methods, see the full modelling description on the IHME website *(1)*.

Note: IHME GBD estimates for SDG 3.3.2 differ from WHO estimates because IHME conducts a statistical triangulation in DisMod MR 2.1, which produces incidence estimates that are consistent with cause-specific mortality estimates and prevalence data (if available). For this reason, changes in TB mortality estimates could largely influence TB incidence estimates. The reasons for changes in TB mortality estimates include the incorporation of new data sources and updates to the GBD mortality envelope.

Disclaimer. The IHME projections are estimates and these can change with new data. Estimates are important for projecting future trends when data gaps exist but are no replacement for data from strong surveillance systems. The GBD data used in these projections (2019/2020) synthesize a large number of input sources to estimate mortality, causes of death and illness, and risk factors. The input sources are accessible through an interactive citation tool (http://ghdx.healthdata.org/gbd-2019/data-input-sources). WHO technical units have reviewed the interpretation of the projections, provided further information on key interventions and frameworks in the WHO European Region and were not involved in data curation or modelling.

Background information in the WHO European Region

- Many new TB infections are attributable to five risk factors: undernutrition, HIV infection, alcohol use disorders, smoking (especially among men) and diabetes. Among those with TB, 15% are also living with HIV.

- Despite having the fastest rate of decline in TB incidence and mortality among all of the WHO regions, the WHO European Region is home to one third of those with multidrug- or rifampicin-resistant TB globally.

- The percentage of incident cases of multidrug- or rifampicin-resistant TB detected and successfully treated is slowly increasing in the Region.

- Ending TB is an explicit SDG 3 target. In order to achieve this goal, a target of 20% reduction in the TB incidence by 2020 (using 2015 as baseline) was set in 2015. In 2019, 21 out of 51 Member States had succeeded in reaching this target.

Key takeaways

- TB incidence continues to decrease between 2020 and 2030 in both the reference and the better scenarios, yet the pace of the decrease seems to be slowing down.

- The worse scenario shows TB incidence stabilizing at the 2020 level.

Key interventions necessary to achieve reference and better scenario projections

- The WHO Regional Office for Europe is pursuing the elimination of TB through tailored country support in order to reach the targets of the Global End TB Strategy *(2)*. The new TB action plan for the WHO European Region for 2023–2030 is under development and will be presented for endorsement to the WHO Regional Committee for Europe in September 2022. It will highlight the strategic vision, priority areas and interventions for TB responses in the Region and at Member State level. The action plan will have the following details:
  - a set of clear actions for all Member States (including those with low numbers of new TB cases), for partners and for WHO; and

- multisectoral interventions to address social determinants and prevent and manage TB/HIV coinfection and other comorbidities through health system and public health approaches that are disease specific.

- Collaboration between different government and nongovernmental stakeholders at all levels is needed to end TB. WHO has developed a Multisectoral Accountability Framework to accelerate progress to end the TB epidemic. This Framework supports the process of defining who is accountable, what they are accountable for and how they will be held accountable at the local and country levels, as well as regionally and globally *(3)*.

Potential reasons for worse scenario

- Even at the current rate of treatment success it may take several decades to eliminate TB. Elimination is dependent upon research and innovation: scaling up access to rapid molecular diagnosis for TB and drug-resistant forms, treatment with fully oral regimens, use of people-centred approaches to treatment and care, investments into finding missing cases and scaling up prevention measures.

- The elimination of TB requires transborder collaboration in order to tackle the needs of both vulnerable host populations and refugees and migrants. Universal, free-of-charge access to TB services without stigma is needed across the Region.

References

1. GBD modelling descriptions for European Health Report 2021. In: IHME measuring what matters [website]. Seattle (WA): Institute for Health Metrics and Evaluation (http://www.healthdata.org/policy-report/european-health-report-2021-gbd-methods-appendix, accessed 23 February 2022).

2. Global tuberculosis programme [website]. Geneva: World Health Organization; 2021 (https://www.who.int/teams/global-tuberculosis-programme/the-end-tb-strategy, accessed 11 December 2021).

3. Multisectoral Accountability Framework to accelerate progress to end TB (MAF-TB). Geneva: World Health Organization; 2019 (https://www.euro.who.int/en/health-topics/communicable-diseases/tuberculosis/publications/2021/multisectoral-accountability-framework-to-accelerate-progress-to-end-tb-maf-tb, accessed 11 December 2021).

3.4.1 noncommunicable disease mortality

Fig. 1. Estimated probability of death from noncommunicable diseases in those aged 30–70 years in the WHO European Region, 2000–2020 and projection to 2030

Source: data and projection provided by the IHME, 2021.

Technical notes by the IHME
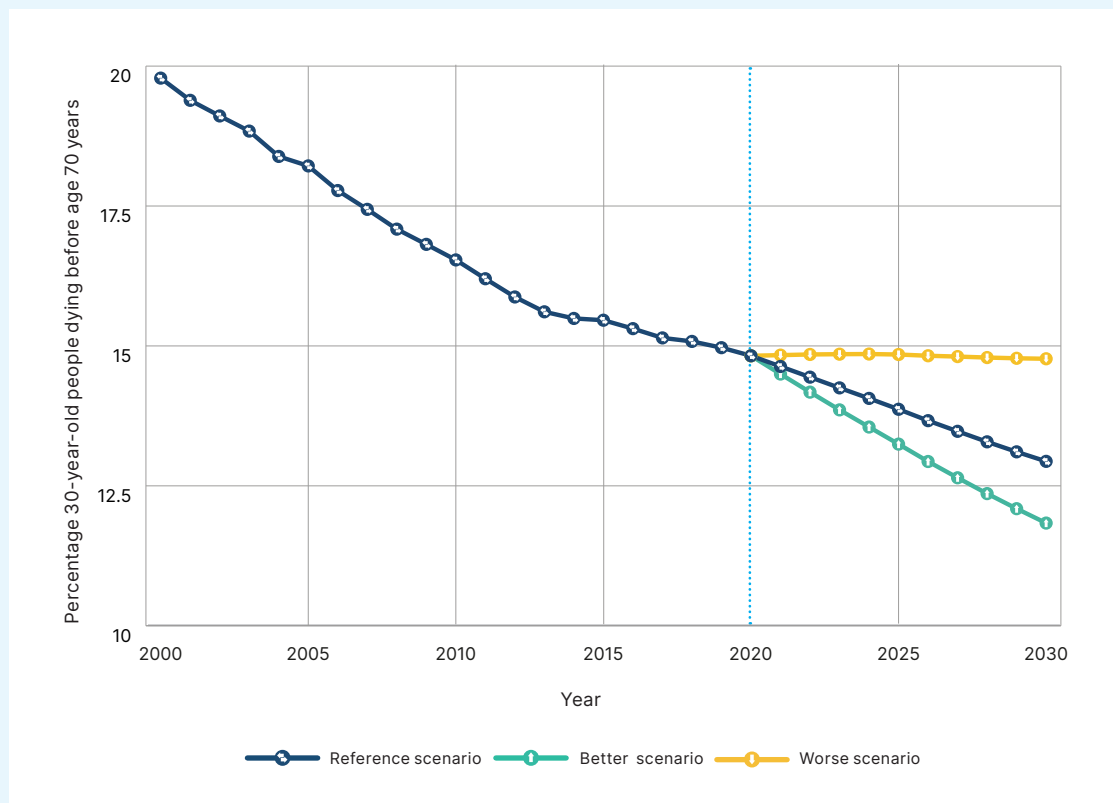
Summary description

The noncommunicable disease (NCD) mortality indicator is estimated as the probability of dying between the ages of 30 and 70 years from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases, defined as the percentage of 30-year-old people who would die before their 70th birthday from these NCDs in a synthetic cohort, assuming that each individual would experience current mortality rates at every age and would not die from any other cause of death (e.g. injuries or HIV/AIDS). This indicator is calculated using multiple decrement life table methods. Projections are calculated from the same method as the past estimates, using forecasts of cause-specific mortality rates and forecasted life tables. Cause-specific mortality forecasts are driven by exposure to risk factors, as defined in the GBD comparative risk assessment as well as the SDI, which incorporates effects of the COVID-19 pandemic through disruptions to income per capita.

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past, and based on the relationships between NCD mortality and its drivers, including the SDI and the behavioural, environmental and metabolic risk factors associated with cardiovascular diseases, cancer, diabetes or chronic respiratory diseases in the GBD comparative risk assessment. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

Retrospective data sources and methods (2000–2020)

For additional information on data sources and estimation methods for NCD mortality, see the full modelling description on the IHME website *(1)*.

Disclaimer. The IHME projections are estimates and these can change with new data. Estimates are important for projecting future trends when data gaps exist but are no replacement for data from strong surveillance systems. The GBD data used in these projections (2019/2020) synthesize a large number of input sources to estimate mortality, causes of death and illness, and risk factors. The input sources are accessible through an interactive citation tool (http://ghdx.healthdata.org/gbd-2019/data-input-sources). WHO technical units have reviewed the interpretation of the projections, provided further information on key interventions and frameworks in the WHO European Region and were not involved in data curation or modelling.

Background information in the WHO European Region

- Probability of death from the four major NCDs has decreased by approximately 5 percentage points since 2000; NCDs are the main cause of premature mortality and cause 83% of premature deaths.

- In addition, certain major risk factors for NCDs, such as overweight and obesity, have increased over the same time period. Others, such as smoking and alcohol consumption, have slightly decreased or remained unchanged.

- It is important to note the strong gender disparities within NCD risk and NCD risk factors: in many countries throughout the Region, men are more than twice as likely as women to die prematurely from NCDs.

Key takeaways

- Probability of death from the four major NCDs has been decreasing across the Region since 2000, likely due to a strong focus being placed on NCD prevention and management. This decrease continues in both the reference and better scenarios.

- In the worse scenario, probability of death remains stable but does not worsen. This mirrors the current trends in certain countries across the WHO European Region.

Key interventions necessary to achieve reference and better scenario projections

- Many existing technical packages were designed to facilitate achievement of the SDGs; the WHO best buys are 16 NCD interventions that are cost-effective and have become the gold standard for strategic responses that save lives while spending less *(2)*.

- Best buys are highly customizable, and are not intended as a one size fits all approach; countries can select from the list of best buys and other recommended interventions based on the national context. Consideration for selection of best buys should depend on:
  - the NCD profile of the country;
  - which interventions will bring the highest return on investment in the national response to overall implementation of the SDGs;

- priority government sectors that need to be engaged; and
- concrete sector-coordinated commitments based on the benefits for all those involved.

- Best buys include interventions such as enacting and enforcing regulations on tobacco advertising and promotion, sponsorship bans, increasing taxes on alcoholic beverages, reducing salt intake through reformulation of food products, and implementing public education and awareness campaigns *(2)*.

Potential reasons for worse scenario

- Challenges to achieving the better scenario rather than shifting to the worse one are linked to the complexity of the risk factors for NCDs, which combine the social, economic, political and environmental conditions of everyday life.

References

1. GBD modelling descriptions for European Health Report 2021. In: IHME measuring what matters [website]. Seattle (WA): Institute for Health Metrics and Evaluation (http://www.healthdata.org/policy-report/european-health-report-2021-gbd-methods-appendix, accessed 23 February 2022).

2. Action Plan for the prevention and control of noncommunicable diseases in the WHO European Region 2016–2025. Copenhagen: WHO Regional Office for Europe; 2016 (https://www.euro.who.int/en/health-topics/noncommunicable-diseases/pages/policy/publications/action-plan-for-the-prevention-and-control-of-noncommunicable-diseases-in-the-who-european-region-20162025, accessed 11 December 2021).

3.4.2 suicide mortality

Fig. 1. Estimated deaths from self-harm per 100 000 population (all ages) in the WHO European Region, 2000–2020 and projection to 2030

Technical notes by the IHME
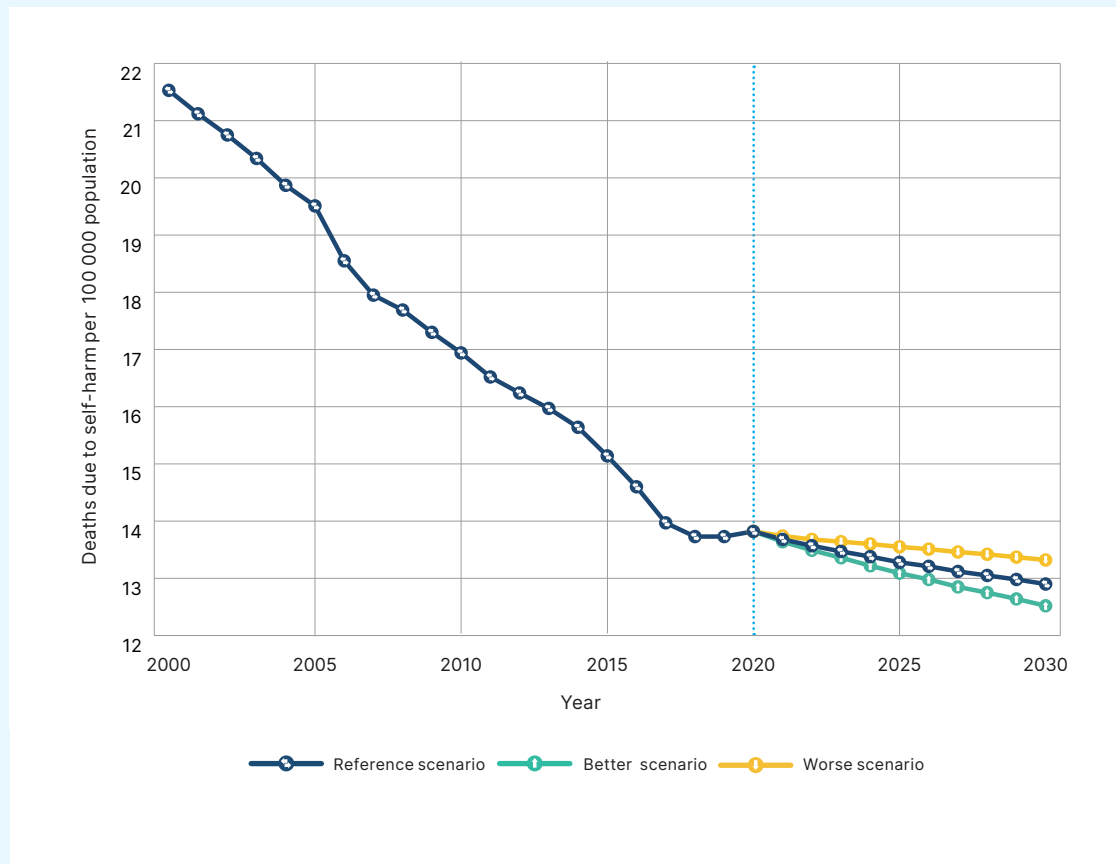
Summary description

The IHME reports the death rate from self-harm per 100 000 population using data from vital registration, verbal autopsy, mortality surveillance, censuses, surveys and police records. In addition to historical trends, projections to 2030 use forecasts of drug use, alcohol use and the SDI to drive the forecasts of suicide mortality. Indirect effects of the COVID-19 pandemic are incorporated through projections of income per capita in the SDI.

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past, and based on the relationships between suicide mortality and its drivers, including the SDI and alcohol and drug use. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

Retrospective data sources and methods (2000–2020)

For additional information on data sources and estimation methods for death rate from self-harm, see the full modelling description on the IHME website *(1)*.

Disclaimer. The IHME projections are estimates and these can change with new data. Estimates are important for projecting future trends when data gaps exist but are no replacement for data from strong surveillance systems. The GBD data used in these projections (2019/2020) synthesize a large number of input sources to estimate mortality, causes of death and illness, and risk factors. The input sources are accessible through an interactive citation tool (http://ghdx.healthdata.org/gbd-2019/data-input-sources). WHO technical units have reviewed the interpretation of the projections, provided further information on key interventions and frameworks in the WHO European Region and were not involved in data curation or modelling.

Background information in the WHO European Region

- The WHO European Region continues to have one of the highest suicide mortality rates globally despite a continuous decrease over the 2000–2017 period.

- The age-standardized suicide rate is four times higher in males than in females and suicide is the fourth leading cause of death in the group aged 15–19 years.

- Four out of five suicides occur in low- and middle-income countries.

Key takeaways

- Suicide mortality is expected to decrease, albeit at different speeds, but remains high in all scenarios.

- Compared with the SDG 3.4.2 baseline in 2015, the suicide mortality rate is expected to decrease by at least 10% by 2030: by 14% in the reference scenario, by 17% in the better scenario and by 12% in the worse scenario. Although a positive change, a decline of 10% is not enough to reach the SDG target of a reduction in suicide mortality rate by one third by 2030 across the WHO European Region.

Key interventions necessary to achieve reference and better scenario projections

- Much can be done to prevent suicide. WHO has developed several tools and guidelines for prevention of self-harm and suicide *(2,3)*. WHO's LIVE LIFE implementation guide *(2)* outlines leadership, interventions, vision and evaluation (LIVE) and makes four key interventions that have proven to be effective (LIFE):
  - limit access to the means of suicide;
  - interact with the media to promote responsible reporting of suicide;
  - foster socioemotional life skills in adolescents; and
  - early identification, assessment, management and follow-up for anyone who is affected by suicidal behaviours.

- These key interventions need to be accompanied by the following foundational pillars: situation analysis, multisectoral collaboration, awareness raising, capacity-building, financing, surveillance, monitoring and evaluation.

Potential reasons for worse scenario

- The challenges are profound, since the risk factors or determinants of self-harm and suicide are many, varied and often hidden. It is a highly complex and stigma-ridden phenomenon for which there are no quick remedies or fixes.

- Suicide prevention calls for a multisectoral approach, which means that it is partly outside the control of health or any other single sector.

References

1. GBD modelling descriptions for European Health Report 2021. In: IHME measuring what matters [website]. Seattle (WA): Institute for Health Metrics and Evaluation (http://www.healthdata.org/policy-report/european-health-report-2021-gbd-methods-appendix, accessed 23 February 2022).

2. LIVE LIFE: an implementation guide for suicide prevention in countries. Geneva: World Health Organization; 2021 (https://apps.who.int/iris/handle/10665/341726, accessed 11 December 2021).

3. Zalsman G, Hawton K, Wasserman D, van Heeringen K, Arensman E, Sarchiapone M et al. Evidence-based national suicide prevention taskforce in Europe: a consensus position. Eur Neuropsychopharmacol. 2017;27*(4)*:418–21. doi: 10.1016/j.euroneuro.2017.01.012.

3.5.2 alcohol consumption

Fig. 1. Estimated alcohol consumption per capita (people aged 15 years or older) within a calendar year (litres of pure alcohol) in the WHO European Region, 2000–2020 and projection to 2030
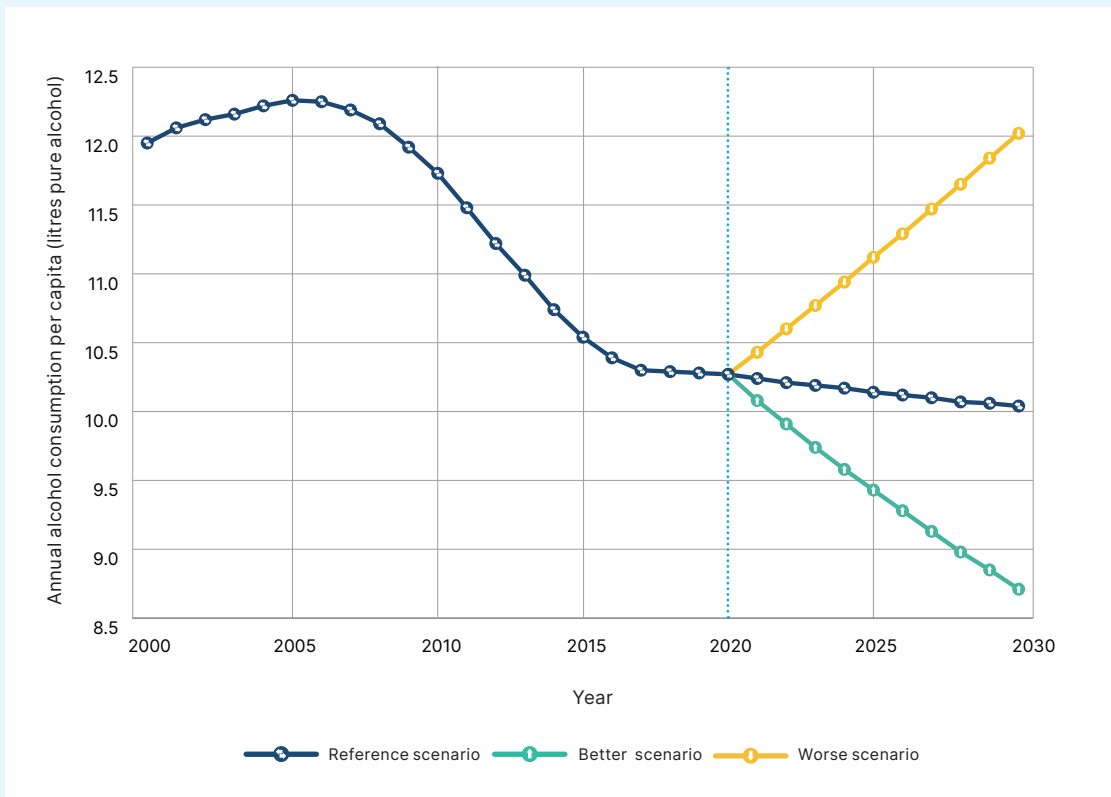
Source: data and projection provided by the IHME, 2021.

Technical notes by the IHME

Summary description

The IHME reports the consumption of alcohol per capita (aged 15 years or older) within a calendar year in litres of pure alcohol. The model includes data on total alcohol consumption from the Food and Agriculture Organization, the Global Information System on Alcohol and Health, and Euromonitor. Estimates are adjusted to account for consumption by tourists and for unrecorded alcohol consumption. Projections to 2030 use summary exposure values for alcohol use that are then converted to per capita consumption. In addition to historical trends, projections to 2030 use forecasts of the SDI to drive the forecasted alcohol use, and indirect effects of the COVID-19 pandemic are incorporated through projections of income per capita.

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past, and based on the relationships between the indicator and its key driver, the SDI. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

Retrospective data sources and methods (2000–2020)

For additional information on data sources and estimation methods for alcohol consumption, see the full modelling description on the IHME website *(1)*.

Disclaimer. The IHME projections are estimates and these can change with new data. Estimates are important for projecting future trends when data gaps exist but are no replacement for data from strong surveillance systems. The GBD data used in these projections (2019/2020) synthesize a large number of input sources to estimate mortality, causes of death and illness, and risk factors. The input sources are accessible through an interactive citation tool (http://ghdx.healthdata.org/gbd-2019/data-input-sources). WHO technical units have reviewed the interpretation of the projections, provided further information on key interventions and frameworks in the WHO European Region and were not involved in data curation or modelling.

Background information in the WHO European Region

- Annual total alcohol consumption per capita (aged 15 years or older) decreased between 2000 and 2019 in the WHO European Region; nevertheless, levels of alcohol consumption in the Region remain the highest globally.

- Overall, alcohol is responsible for 10.1% of all deaths within the Region, which is almost twice as high as the global indicator. This number was substantially higher in younger people, with 15.6% of all deaths in 15–19 year olds being attributable to alcohol and 23.3% in 20–24 year olds.

- There are large differences in estimated alcohol consumption across countries. Out of the 10 countries that drink the most in the world, nine are located in the WHO European Region and eight are located in the European Union alone, where also alcohol plays the largest contribution to all-cause mortality.

- The vast majority (78.5%) of alcohol-attributable deaths in the Region are due to NCDs. Alcohol is one of the largest modifiable risk factors and all of these deaths are preventable.

Key takeaways

- Since the SDGs were adopted in 2015, alcohol consumption levels have remained stable in the Region, with only a small decrease reported between 2015 and 2019. Little change from this is expected up to 2030 and, although the available evidence indicates a general decline in drinking because of the COVID-19 pandemic, this decline may be reversed as behaviours linked to the pandemic change.

- The worse scenario shows a sharp increase in alcohol use; by 2030 the WHO European Region would return to the situation in 2008 in the reference scenario.

Key interventions necessary to achieve reference and better scenario projections

- WHO has developed various guiding documents, tools and technical packages to reduce alcohol consumption and harm, both at global and at regional level. Alcohol reduction targets are included in the Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020 *(2)*, the Action Plan for the Prevention and Control of Noncommunicable Diseases in the WHO European Region *(3)*, the NCD Global Monitoring Framework *(4)*, the WHO Thirteenth General Programme of Work, 2019–2023 *(5)* and the European Programme of Work 2020–2025 *(6)*. These highlight the recognition of the harm inflicted on individuals and societies by alcohol consumption as well as the need to regulate consumption effectively.

- The Handbook for Action to Reduce Alcohol-related Harm *(7)*, the WHO Guidance for Addressing Inequities in Alcohol-related Harm *(8)*, and the Resource Tool on Alcohol Taxation and Pricing Policies *(9)* are some of the important tools developed for Member States to achieve the alcohol reduction targets and protect individuals, communities and societies from alcohol-attributable harm.

- Both the Global Action Plan and the European Action Plan outline 10 areas of action, listing evidence-informed measures that countries can adopt to reduce alcohol consumption and harms, three of which are WHO "best buys":

  ○ pricing
  ○ availability restrictions
  ○ marketing bans and comprehensive restrictions.

- In 2018 WHO launched SAFER, a new global alcohol control initiative and technical package outlining five high-impact strategies that can help governments to reduce alcohol use and related health, social and economic consequences and achieve the SDGs *(10)*. The SAFER technical package *(11)* is aimed at government officials with responsibility for developing policy and action plans to reduce the harm done by alcohol (Fig. 2).

- In 2018 the WHO Regional Office for Europe launched a Regional consultation to support the implementation of the most effective and cost-effective alcohol policies across the WHO European Region (Fig. 3) *(12)*.

Fig. 2. The five SAFER high-impact interventions to reduce the harm done by alcohol

The five SAFER action package

S — **Strengthen** restrictions on alcohol availability

A — **Advance** and enforce drink-driving countermeasures

F — **Facilitate** access to screening, brief interventions and treatment

E — **Enforce** bans or comprehensive restrictions on alcohol advertising, sponsorship and promotion

R — **Raise** prices on alcohol through excise taxes and pricing policies

Source: adapted from WHO, 2019 *(10)*.

Fig. 3. The WHO European Region initiative's cross-cutting principles and approaches for the SAFER initiative

1. Recognize and take into account the multifaceted determinants of harm due to alcohol → **Evidence-informed interventions**

2. Promote evidence-informed practice and the multisectoral actions that are required to implement effective interventions → **Multisectoral approach**

3. Build on public health-oriented partnerships, safeguarding the integrity of SAFER → **Protection of public health policies**

4. Support the empowerment of communities for effective societal responses → **Community empowerment**

*Source*: adapted from WHO, 2019 *(11)*.

Potential reasons for worse scenario

- A variety of barriers and challenges to implementing the WHO-recommended alcohol control policies were documented as part of a consultation process with Member States and civil society organization, which the WHO Regional Office for Europe has organized.

- The main challenges were strong resistance from the alcohol industry and lack of skills and capacity within Member States and in regulatory bodies to address commercial communications, including both traditional and digital marketing and specifically hidden marketing techniques and strategies; overall lack of regulation for digital marketing as a new emerging threat to public health; cross-border issues in an increasingly connected Region; and lack of mechanisms to make alcohol sellers and servers liable for breaches of national regulations.

- During the COVID-19 pandemic, a worse scenario will occur in countries that declared alcohol an essential good during the pandemic and, for example, allowed for alcohol delivery services and online sales.

- More on the specific barriers can be found in the report of Regional consultation *(12)*.

References

1. GBD modelling descriptions for European Health Report 2021. In: IHME measuring what matters [website]. Seattle (WA): Institute for Health Metrics and Evaluation (http://www.healthdata.org/policy-report/european-health-report-2021-gbd-methods-appendix, accessed 23 February 2022).

2. Global action plan for the prevention and control of noncommunicable diseases 2013–2020. Geneva: World Health Organization; 2013 (WHA66.10; https://www.who.int/publications/i/item/9789241506236, accessed 30 November 2021).

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4. NCD global monitoring framework [website]. Geneva: World Health Organization; 2021 (https://www.who.int/teams/ncds/surveillance/monitoring-capacity/gmf, accessed 11 December 2021).

5. Thirteenth general programme of work, 2019–2023: promote health, keep the world safe, serve the vulnerable. Geneva: World Health Organization; 2019 (https://apps.who.int/iris/handle/10665/324775, accessed 11 December 2021).

6.   European programme of work 2020–2025: united action for better health. Copenhagen: WHO Regional Office for Europe; 2021 (https://apps.who.int/iris/handle/10665/339209, accessed 11 December 2021).

7.   Handbook for action to reduce alcohol-related harm. Copenhagen: WHO Regional Office for Europe; 2009 (https://apps.who.int/iris/handle/10665/107268, accessed 11 December 2021).

8.   Loring B. Alcohol and inequities: guidance for addressing inequities in alcohol-related harm. Copenhagen: WHO Regional Office for Europe; 2014 (https://apps.who.int/iris/handle/10665/344496, accessed 11 December 2021).

9.   Sornpaisarn B, Shield KD, Österberg E, Rehm J. Resource tool on alcohol taxation and pricing policies. Geneva: World Health Organization; 2017 (https://apps.who.int/iris/handle/10665/255795, accessed 11 December 2021).

10.   The SAFER initiative: a world free from alcohol related harm [website]. Geneva: World Health Organization; 2019 (https://www.who.int/initiatives/SAFER, accessed 11 December 2021).

11.   The SAFER technical package: five areas of intervention at national and subnational levels. Geneva: World Health Organization; 2019 (https://apps.who.int/iris/handle/10665/330053, accessed 11 December 2021).

12.   Final report on the regional consultation on the implementation of the WHO European action plan to reduce the harmful use of alcohol (2012–2020). Prague, Czechia, 30 September – 1 October 2019. Copenhagen: WHO Regional Office for Europe; 2020 (https://apps.who.int/iris/handle/10665/350122, accessed 11 December 2021).
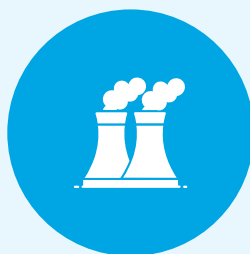
3.9.1 death rate attributable to air pollution

Fig. 1. Estimated deaths attributable to air pollution per 100 000 population (age-standardized) in the WHO European Region, 2000–2020 and projection to 2030

Source: data and projection provided by the IHME, 2021.

Technical notes by the IHME
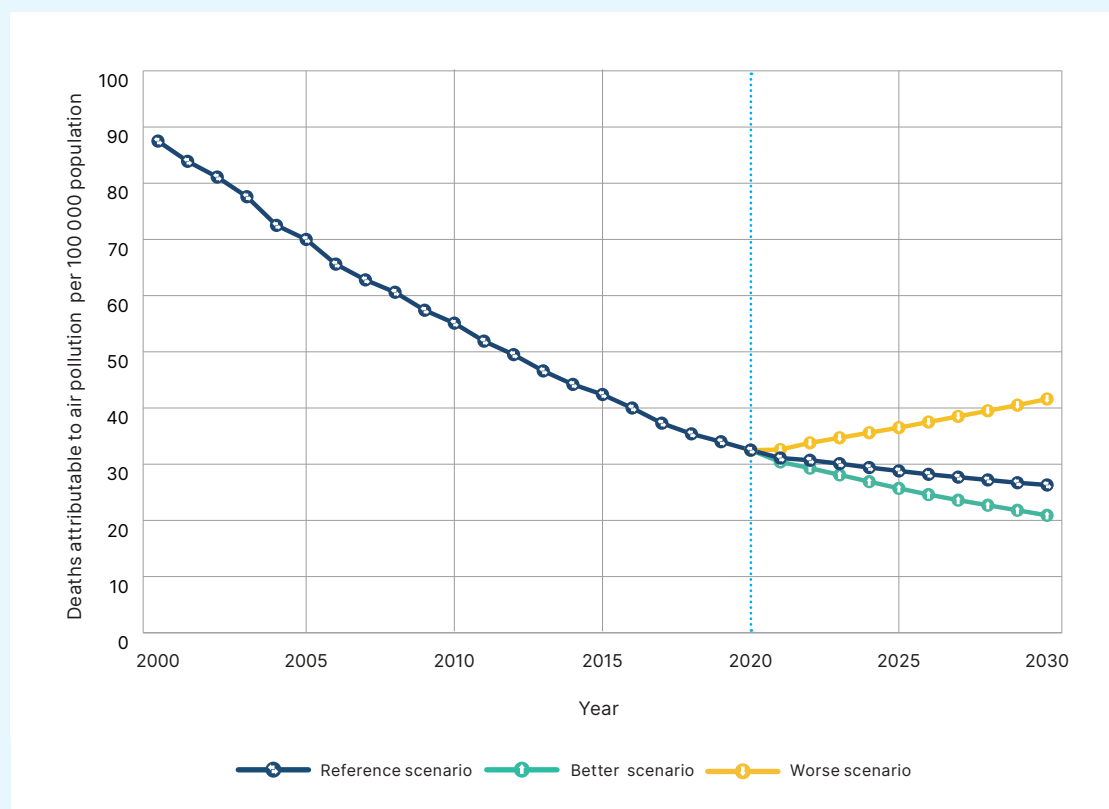
Summary description

Air pollution mortality is the death rate attributable to household air pollution from the use of solid fuels for cooking and ambient particulate matter pollution ($PM_{2.5}$) per 100 000 population. The IHME estimates attributable mortality using the proportional population-attributable fraction modelling approach to adjust for the joint effects of particulate matter from ambient air pollution and the burning of solid fuels for cooking. For GBD 2020, key changes were made to the particulate matter risk curves, including the removal of second-hand smoking data and the addition of data from newly published studies. For the year 2020, additional analysis was conducted to incorporate updated ground monitoring (1777 observations for 2020) and satellite-based data to examine potential impacts of the COVID-19 pandemic on ambient particulate matter pollution. In addition to historical trends, projections to 2030 use the SDI as a key driver, which incorporates the effects of the COVID-19 pandemic through projections of income per capita.

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past and the relationships between the indicator and its drivers, including the SDI and exposure to air pollution. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

Retrospective data sources and methods (2000–2020)

For additional information on data sources and estimation methods for the death rate attributable to air pollution, see the full modelling description on the IHME website *(1)*.

Disclaimer. The IHME projections are estimates and these can change with new data. Estimates are important for projecting future trends when data gaps exist but are no replacement for data from strong surveillance systems. The GBD data used in these projections (2019/2020) synthesize a large number of input sources to estimate mortality, causes of death and illness, and risk factors. The input sources are accessible through an interactive citation tool (http://ghdx.healthdata.org/gbd-2019/data-input-sources). WHO technical units have reviewed the interpretation of the projections, provided further information on key interventions and frameworks in the WHO European Region and were not involved in data curation or modelling.

Background information in the WHO European Region

- The mortality rate attributed to air pollution (ambient plus household) in the Region varies widely across the Region, ranging from 7.2 to 110.7 deaths per 100 000 population.

- Based on the most recent data, ambient and household air pollution caused, respectively, nearly 480 000 and 120 000 NCD-related deaths in the WHO European Region, including from ischaemic heart disease, stroke, chronic obstructive pulmonary disease and lung cancer *(2)*.

- Although air quality has improved gradually in parts of the WHO European Region, concentrations of the main air pollutants still exceed the 2021 WHO air quality guidelines in many areas.

Key takeaways

- The WHO European Region is seeing a decrease in the number of deaths linked to ambient and household air pollution per 100 000 population.

- Since the launch of the SDGs in 2015, the attributable death rate is expected to decrease by 38%, on average, by 2030, and by nearly 51% in the better scenario.

- However, in the worse scenario the attributable death rate could increase back to 2015 levels by 2030; this would mean that all of the progress made so far would be lost.

Key interventions necessary to achieve reference and better scenario projections

- Although IHME projections show a decrease in both the reference and better scenarios, interventions necessary to reach these scenarios must target many sectors and involve both tackling the sources of air pollution emissions and taking measures to improve air quality and reduce exposure.

- The Region is active in taking the right steps: this is illustrated by coordination of the global effort to update the WHO global air quality guidelines *(3)*, which were launched in September 2021; in addition, tools to quantify the health impacts of air pollution are available.

Potential reasons for worse scenario

- The worse scenario of increased mortality linked to air pollution is a possibility if more stringent measures towards reducing deaths from air pollution, and pollution itself, are not followed.

- Member States should look across sectors and seek multidisciplinary and multisectoral approaches to air pollution. Although these approaches require the coordinated efforts of many sectors and many levels of government, they are crucial to reduce the health impacts we are experiencing. A long-established regional framework for the health and environment cooperation provides a robust platform for intersectoral work at the regional, national and subnational levels *(4)*.

References

1. GBD modelling descriptions for European Health Report 2021. In: IHME measuring what matters [website]. Seattle (WA): Institute for Health Metrics and Evaluation (http://www.healthdata.org/policy-report/european-health-report-2021-gbd-methods-appendix, accessed 23 February 2022).

2. Noncommunicable diseases and air pollution. WHO European high-level conference on noncommunicable diseases: time to deliver – meeting NCD targets to achieve Sustainable Development Goals in Europe, 9–10 April 2019, Ashgabat, Turkmenistan. Copenhagen: WHO Regional Office for Europe; 2019 (https://apps.who.int/iris/handle/10665/346416, accessed 22 December 2021).

3. WHO global air quality guidelines: particulate matter ($PM_{2.5}$ and PM_{10}), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. Geneva: World Health Organization; 2021 (https://apps.who.int/iris/handle/10665/345329, accessed 11 December 2021).

4. Protecting health in an environment challenged by climate change: European regional framework for action. Copenhagen: WHO Regional Office for Europe; 2010 (https://apps.who.int/iris/handle/10665/349974, accessed 11 December 2021).

3.a.1 prevalence of tobacco use

Fig. 1. Estimated age-standardized prevalence (percentage) of the daily use of smoked tobacco (people aged 15 years and older) in the WHO European Region, 2000–2020 and projection to 2030

Source: data and projection provided by the IHME, 2021.

Technical notes by the IHME
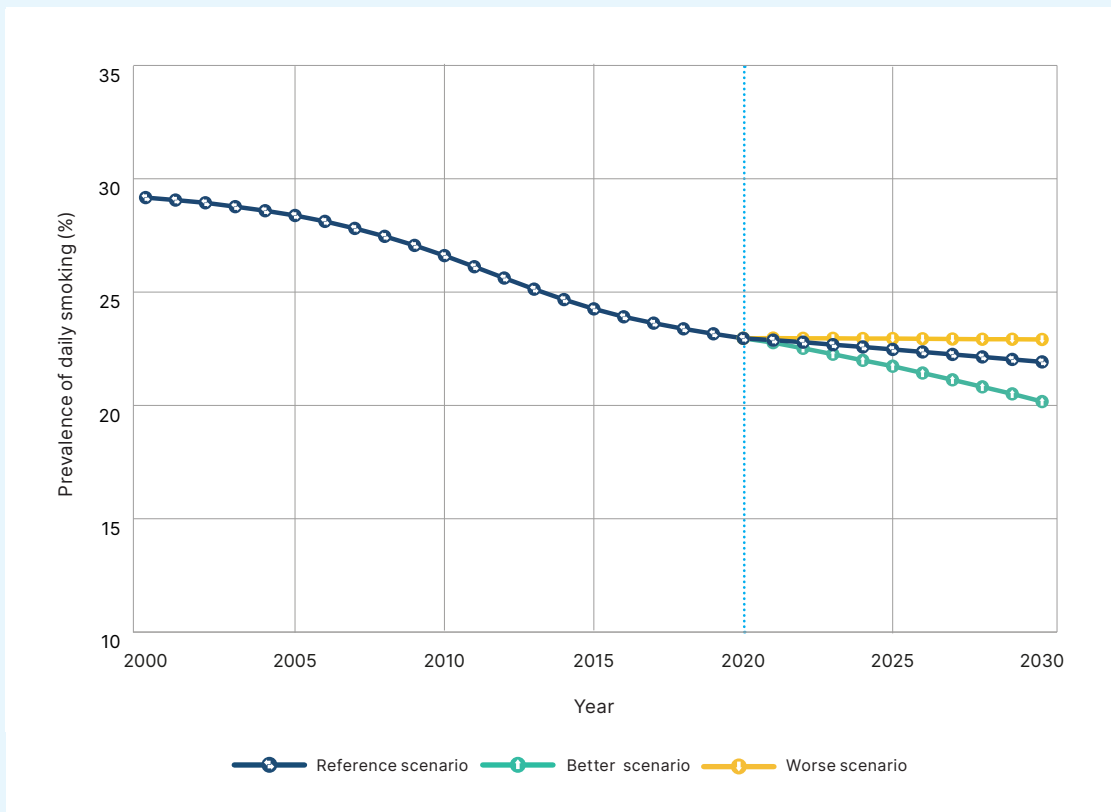
Summary description

The IHME measures the age-standardized prevalence of the daily use of smoked tobacco among those of 15 years of age and older. The IHME collates information from all available surveys that include questions about daily use of tobacco, either currently or within the last 30 days, and information on the type of tobacco product smoked (including cigarettes, cigars, pipes and hookahs, as well as local products). All data are converted to the IHME standard definition so that meaningful comparisons can be made across locations and over time. In addition to historical trends, projections to 2030 used the SDI as a key driver, which incorporates the effects of the COVID-19 pandemic through projections of income per capita.

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past, and based on the relationships between the indicator and its driver, the SDI. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

Retrospective data sources and methods (2000–2020)

For additional information on data sources and estimation methods for daily use of smoking tobacco, see the full modelling description on the IHME website *(1)*.

Note: The United Nations metadata definition for SDG 3.a.1 includes daily and non-daily use of both smoked and smokeless tobacco. However, the IHME only estimated daily smoking and not non-daily smoking or smokeless tobacco use.

Disclaimer. The IHME projections are estimates and these can change with new data. Estimates are important for projecting future trends when data gaps exist but are no replacement for data from strong surveillance systems. The GBD data used in these projections (2019/2020) synthesize a large number of input sources to estimate mortality, causes of death and illness, and risk factors. The input sources are accessible through an interactive citation tool (http://ghdx.healthdata.org/gbd-2019/data-input-sources). WHO technical units have reviewed the interpretation of the projections, provided further information on key interventions and frameworks in the WHO European Region and were not involved in data curation or modelling.

Background information in the WHO European Region

- The WHO European Region has one of the highest prevalence rates for tobacco use globally: more than one in five of the population in the Region, aged 15 years and older, used tobacco in 2020.

- Smoking prevalence is decreasing in the Region and has decreased in almost all Member States since 2010 *(2)*.

- Tobacco usage rates among women in the Region are two to six times higher than the average for women in other WHO regions.

- Tobacco use in the WHO European Region is decreasing among men, but in women traces a less clear downwards trajectory; the prevalence of tobacco use is increasing in some parts of the Region, specifically countries that traditionally had a low prevalence of tobacco use among women. The WHO European Region is the only WHO region not expected to reach the female 30% relative reduction target by 2025.

- There is a large variation between countries in the WHO European Region; the age-standardized prevalence of current tobacco smoking among people aged 15 years and older varied between 5.9% and 40.3% across countries in 2019 *(3)*.

Key takeaways

- Smoking prevalence has been decreasing across the Region since 2000, likely due to the efforts being made in many countries to implement tobacco control measures, as outlined in the WHO Framework Convention on Tobacco Control (FCTC), which entered into force in 2003 and to which 51 Member States of the WHO European Region are Parties *(3)*. This decrease continues in both the reference and better scenarios.

- In the worse scenario, smoking prevalence remains stable but does not worsen.

Key interventions necessary to achieve reference and better scenario projections

- The WHO best buys provide the most cost-effective and feasible options for interventions to reduce tobacco use *(5)*:
    - increase excise taxes and prices on tobacco products;
    - implement plain/standardized packaging and/or large graphic health warnings on all tobacco packages;
    - enact and enforce comprehensive bans on tobacco advertising, promotion and sponsorship;
    - eliminate exposure to second-hand tobacco smoke in all indoor workplaces, public places and public transport; and
    - implement effective mass media campaigns that educate the public about the harms of smoking/tobacco use and second-hand smoke.

- Focus should continue on comprehensive evidence-informed tobacco control measures to reduce nicotine addiction and tobacco use through all provisions of the WHO FCTC and full implementation of MPOWER, a technical package of measures *(6)*, including to:

    Monitor tobacco use and prevention policies

    Protect people from tobacco smoke

    Offer help to quit tobacco use

    Warn about the dangers of tobacco

    Enforce bans on tobacco advertising, promotion and sponsorship

    Raise taxes on tobacco.

Potential reasons for worse scenario

- There is a lack of strong leadership, coordination and capacity for implementing and enforcing tobacco control regulation and legislation.

- Implementation of the WHO FCTC is fragmented.

- The tobacco industry's aggressive marketing tactics, specifically those aiming to recruit new tobacco and nicotine users, and its continuous efforts to undermine implementation of the WHO FCTC and the MPOWER package.

References

1.	GBD modelling descriptions for European Health Report 2021. In: IHME measuring what matters [website]. Seattle (WA): Institute for Health Metrics and Evaluation (http://www.healthdata.org/policy-report/european-health-report-2021-gbd-methods-appendix, accessed 23 February 2022).

2.	WHO global report on trends in prevalence of tobacco use 2000–2025, fourth edition. Geneva: World Health Organization; 2021 (https://apps.who.int/iris/handle/10665/348537., accessed 11 December 2021).

3.	WHO report on the global tobacco epidemic 2021: addressing new and emerging products. Geneva: World Health Organization; 2021 (https://apps.who.int/iris/handle/10665/343287, accessed 11 December 2021).

4.	WHO Framework Convention on Tobacco Control. Geneva: World Health Organization; 2003 (https://apps.who.int/iris/handle/10665/42811, accessed 11 December 2021).

5.	"Best buys" and other recommended interventions for the prevention and control of noncommunicable diseases. Geneva: World Health Organization; 2017 (https://apps.who.int/iris/handle/10665/259232, accessed 11 December 2021).

6.	MPOWER initiative [website]. Geneva: World Health Organization; 2021 (https://www.who.int/initiatives/mpower, accessed 11 December 2021).
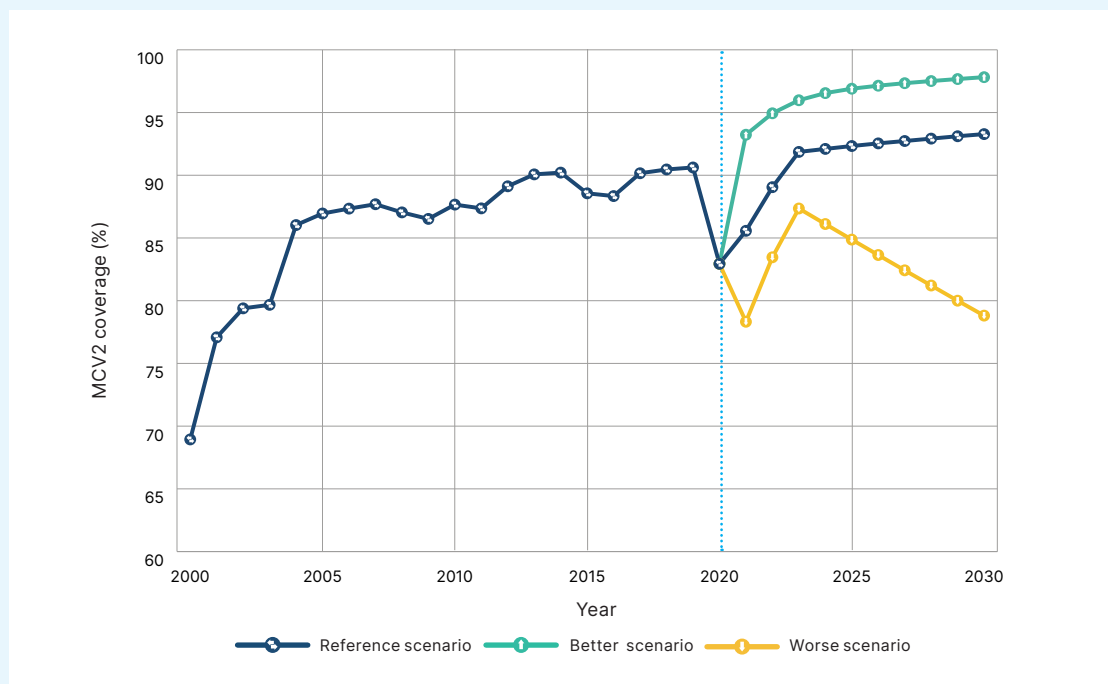
3.b.1 vaccination coverage

Fig. 1. Estimated coverage of the third dose of diphtheria, tetanus and pertussis vaccine (DTP3) in the WHO European Region, 2000–2020 and projection to 2030
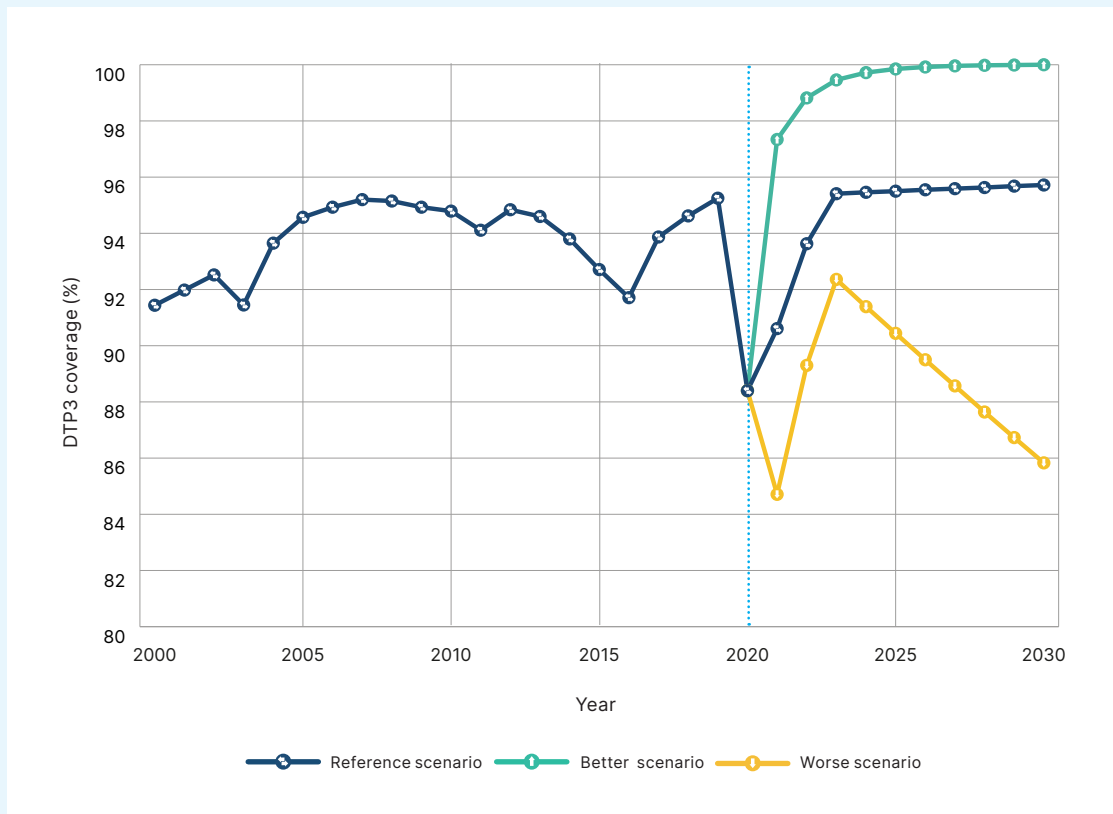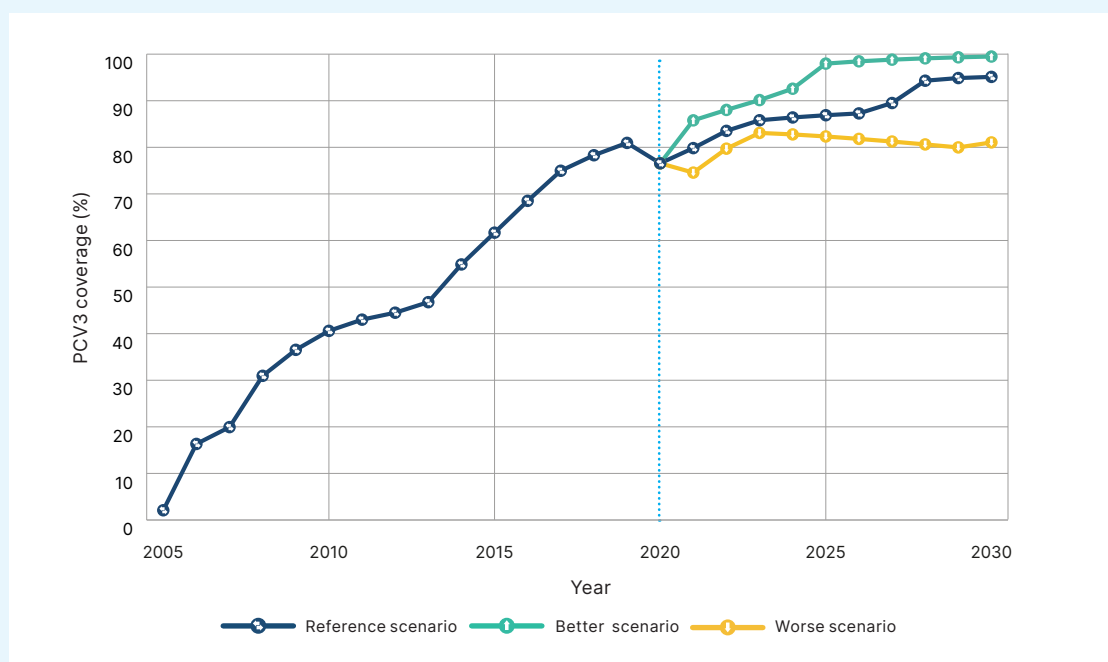
Fig. 2. Estimated coverage of the second dose of measles vaccine (MCV2) in the WHO European Region, 2000–2020 and projection to 2030

Fig. 3. Estimated coverage of the third dose of pneumococcal conjugate vaccine (PCV3) in the WHO European Region, 2005–2020 and projection to 2030

Technical notes by the IHME

Summary description

The IHME reports on the coverage of the following vaccines separately: third dose of diphtheria–tetanus–pertussis (DTP3), measles second dose (MCV2) and third dose of pneumococcal conjugate vaccine (PCV3). The IHME measures the short-term (2020–2021) effects via administrative data on vaccine doses. In collaboration with WHO, the IHME was able to synthesize data on the number of vaccine doses delivered by month in 2019 and 2020. To estimate the change in vaccine coverage since the onset of the COVID-19 pandemic for each country, the number of doses delivered in each month of 2020 was compared with those delivered in the same month in 2019, adjusting for pre-pandemic year-on-year changes observed in January and February. Survey and administrative data were triangulated with qualitative information on the level of vaccine system disruption compiled by WHO, including two recent WHO pulse polls, WHO Essential Health Services polls and reports from WHO regional offices. Data sources that were implausible based on the reported level of disruption within a country were excluded. Projections to 2030 used the SDI as a key driver, which incorporates projections of income per capita and the effect of the COVID-19 pandemic.

Evidence in the second half of 2020 suggested the resumption of routine immunization services and/or catch-up vaccination in many countries and regions. New data suggest that resumption of services and catch-up vaccination has been faster than originally predicted based on mobility alone in many locations. To better allow the model to account for this observation, changes in the residual variation in the relationship between vaccine delivery and mobility were modelled over time, allowing for catch-up vaccination and for resumption of vaccine delivery to occur more quickly (or more slowly) than suggested based on mobility trends alone. As a result of these new data and adjustments to the modelling framework, estimates of annual disruption in vaccine coverage are smaller than originally forecast last year.

Technical notes by the IHME (contd)

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past and on the relationships between the indicator and its driver, the SDI. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress over the last 30 years, and if the introduction of new vaccines hastens. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress over the last 30 years, and if the introduction of new vaccines is delayed. Country-level results are then combined to produce a regional forecast.

Retrospective data sources and methods (2000–2020)

For additional information on data sources and estimation methods for vaccine coverage for 2000–2019, see Galles et al., 2021 *(1)*, and for COVID disruption estimates in 2020, see Causey et al., 2021 *(2)*.

Disclaimer. The IHME projections are estimates and these can change with new data. Estimates are important for projecting future trends when data gaps exist but are no replacement for data from strong surveillance systems. The GBD data used in these projections (2019/2020) synthesize a large number of input sources to estimate mortality, causes of death and illness, and risk factors. The input sources are accessible through an interactive citation tool (http://ghdx.healthdata.org/gbd-2019/data-input-sources). WHO technical units have reviewed the interpretation of the projections, provided further information on key interventions and frameworks in the WHO European Region and were not involved in data curation or modelling.

WHO considerations on the projections of vaccination coverage levels by 2030

- The national administrative coverage data for the year 2020 were not reported by all Member States in the WHO European Region as the national immunization programmes have been engaged in COVID-19 vaccine roll-out efforts.

- Delivery of routine immunization services in subnational areas has been affected by the restrictive measures of COVID-19 responses and it is highly likely, even though the information about subnational disruptions is limited, that the vaccination coverage of several subnational areas is not reflected adequately in the national vaccination coverage levels.

- It is highly unlikely that high and equitable routine immunization coverage in subnational areas has been achieved in 2020 and 2021 because ministries of health have concentrated on scaling up the COVID-19 vaccination efforts in 2021 and into 2022, including for an evolving COVID-19 response aligned to the disease epidemiology.

- Because of the wide variation in the immunization systems across the Region, data on monthly vaccination coverage are not systematically collected for every subnational unit in a country by the WHO Regional Office for Europe. Hence, the monthly data synthesized from the available yearly data may not accurately reflect the reality of subnational vaccination performance.

- The regional projection vaccination coverage levels of the identified antigens (which depict averages for national vaccination coverage) will conceal the inter- and intracountry variations in coverage levels; such variations are critical barriers to ensuring vaccination equity in the WHO European Region.

Background information in the WHO European Region

- The WHO European Region has the highest childhood immunization coverage for DTP3, MCV2 and PCV3 globally.

- Childhood immunization coverage in the Region is more than 90% for DTP3 and MCV2 and is 80% for PCV3.

Key takeaways

- Within the limitations of the available reported data used for the projections of immunization coverage and the influence of restrictive measures from the COVID-19 pandemic response on immunization service delivery, vaccination coverage (DTP3, MCV2 and PCV3) is likely to recover in 2023.

- In the better scenario, with adequate efforts by ministries of health to enhance and sustain routine immunizations, regional vaccination coverage will catch up to pre-pandemic levels by the end of 2021, followed by a gradual increase in coverage thereafter until 2030.

- In the worse scenario, it is expected that the regional vaccination coverage will increase until 2023, followed by sharp decline in DTP3 and MCV2 vaccination coverage.

Key interventions necessary to achieve reference and better scenario projections

- Implementation of the European Immunization Agenda 2030 (EIA 2030) – "a world where everyone, everywhere, at every age, fully benefits from vaccines for good health and well-being" – leverages the lessons learned from the COVID-19 vaccination programmes and platforms *(3)*. It will guide the benefits of vaccination throughout the life course for the population in the WHO European Region, with a specific focus on immunization equity at the subnational levels.

- Rather than focusing on achieving specific disease-related goals, EIA 2030 aims to strengthen the immunization systems and structures and to build resilient immunization programmes after the ravages of the COVID-19 pandemic, based on the key pillars of immunization equity, life-course vaccination and tailored local solutions, including addressing vaccination demand and acceptance in the population. Based on the enshrined principle of leaving no one behind, the EIA 2030 will focus broadly on strengthening:
  - primary health care and universal health coverage
  - political commitment
  - public demand for vaccination
  - immunization coverage and equity
  - immunization through the life course integrated into other essential services
  - preparedness and responses to outbreaks and emergencies

○ immunization systems, including vaccine supply and financing.

- National immunization policies will achieve these ambitions by being:
  ○ based on primary health care
  ○ focused on equity
  ○ people centred
  ○ country owned
  ○ data enabled
  ○ based on innovation and research
  ○ based on partnership.

Potential reasons for worse scenario

- The ability to sustain high and equitable routine immunization coverage in every subnational level throughout the enormous undertaking of ensuring population-wide uptake of COVID-19 vaccines will hinge on numerous factors, including political commitment; effective and efficient programme management and financing; efficient service implementation, with adequate human resources; vaccine supply and management with quality assurance; logistic support through relevant delivery strategies and monitoring; effective data recording and reporting to inform action; and population demand and acceptance of vaccines.

- Further, any humanitarian crises, such as natural disasters and conflicts, can rapidly lead to the loss of health service infrastructure and shortages of trained health workers, often for extended periods, thereby potentially disrupting the delivery of immunization services.

References

1. Galles NC, Liu PY, Updike RL, Fullman N, Nguyen J, Rolfe S et al. Measuring routine childhood vaccination coverage in 204 countries and territories, 1980–2019: a systematic analysis for the Global Burden of Disease Study 2020, release 1. Lancet. 2021;398(10299):503–21. doi: 10.1016/S0140-6736(21)00984-3.

2. Causey K, Fullman N, Sorensen RJD, Galles NC, Zheng P, Aravkin A et al. Estimating global and regional disruptions to routine childhood vaccine coverage during the COVID-19 pandemic in 2020: a modelling study. Lancet. 2021;398(10299):522–34. doi: 10.1016/S0140-6736(21)01337-4.

3. European immunization agenda 2030. Copenhagen: WHO Regional Office for Europe; 2021 (https://apps.who.int/iris/handle/10665/348002, accessed 11 December 2021).
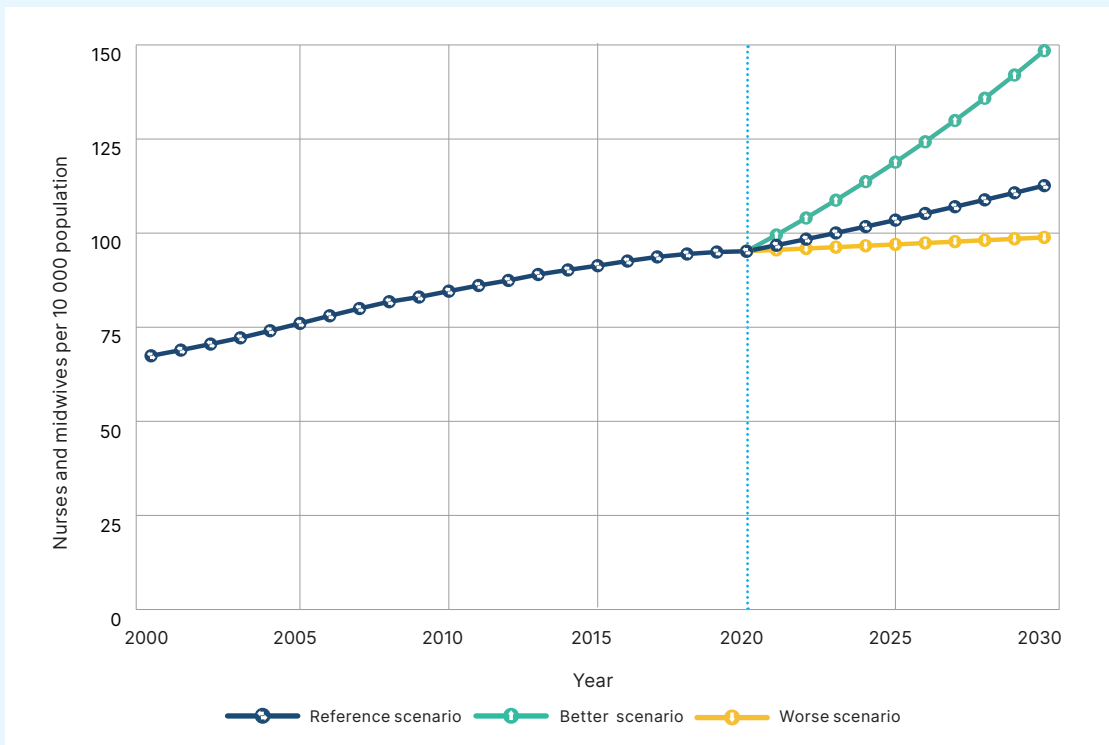
3.c.1 health worker density

Fig. 1. Estimated number of physicians per 10 000 population in the WHO European Region, 2000–2020 and projection to 2030
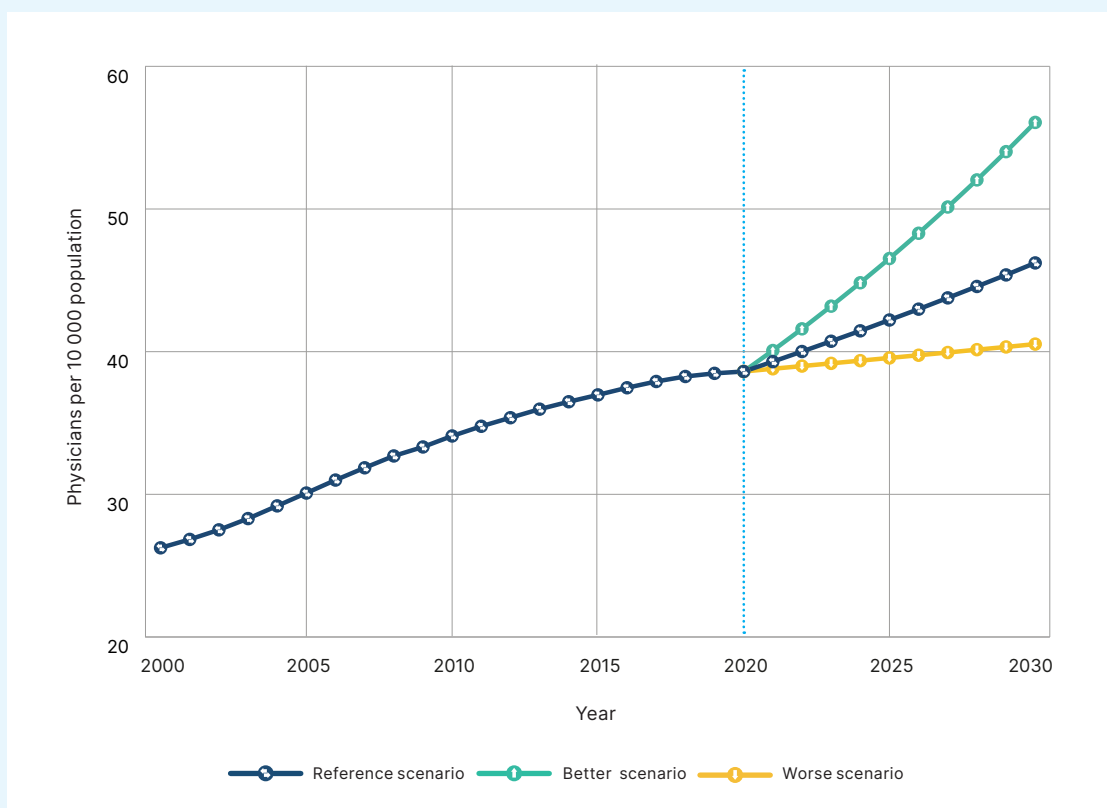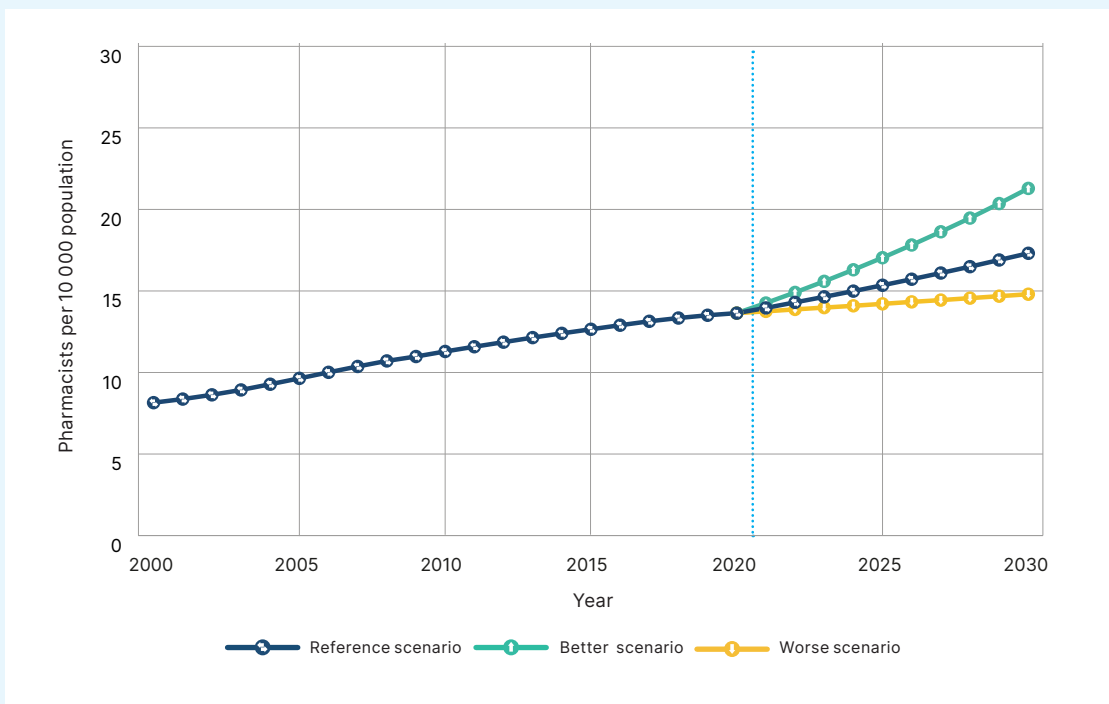

Source: data and projection provided by the IHME, 2021.

Fig. 2. Estimated number of nurses and midwives per 10 000 population in the WHO European Region, 2000–2020 and projection to 2030
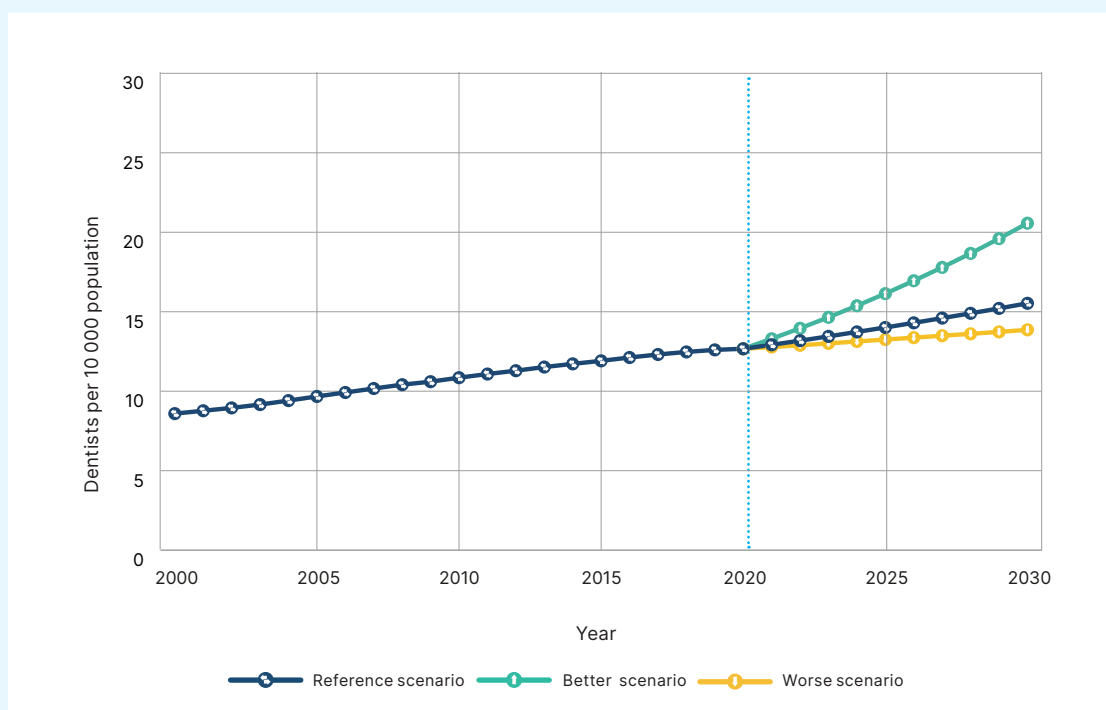
Fig. 3. Estimated number of pharmacists per 10 000 population in the WHO European Region, 2000–2020 and projection to 2030

Fig. 4. Estimated number of dentists per 10 000 population in the WHO European Region, 2000–2020 and projection to 2030

Source: data and projection provided by the IHME, 2021.

Technical notes by the IHME

Summary description

Health worker density is estimated on a population basis and reported separately for four health worker cadres: physicians, nurses and midwives, pharmacists, and dentists. Cadres are categorized based on International Standard Classification of Occupations 88 codes, against which alternative or earlier classification schemes and codes are systematically mapped to produce comparable and consistent measures of cadres over time and across locations. Projections are modelled using an annualized rate of change method on historical trends with recency weights applied, estimated using out-of-sample predictive validity.

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress over the last 30 years. Country-level results are then combined to produce a regional forecast.

Retrospective data sources and methods (2000–2020)

For additional information on data sources and estimation methods for health worker density, see the full modelling description on the IHME website *(1)*.

Background information in the WHO European Region

- Health worker density is used to monitor progress towards universal health coverage.

- The WHO European Region has the highest density of medical doctors globally and reports the second highest density of nurses and midwives.

- The density of health workers within the WHO European Region increased between 2000 and 2020.

- The right skills-mix of health workers is indispensable for effective and efficient health-care delivery. Although there is no standard for the optimal composition of a health workforce, the physician–nurse ratio varies considerably across the Region. Similar regional variation can be discerned with regard to the density of pharmacists and dentists.

- Strengthening of primary health care in the Region will require a focus on increasing the capacity of the medical workforce to produce and employ more clinicians working in general practice. The majority of physicians in the Region are specialists: the specialist–general practitioner ratio is 3.2 : 1.0, a relation that has been constant since 2010.

Key takeaways

- In both the reference and better scenarios, the density of all health workers will increase significantly between 2020 and 2030.

- In the worse scenario, the density of physicians and of nurses and midwives stabilizes at 2020 levels but does not decrease, with the density of pharmacists and dentist continuing to grow, albeit at a slower pace.

Key interventions necessary to achieve reference and better scenario projections

- Much can be done to achieve a sustainable health workforce. In 2017 the WHO Regional Office for Europe adopted the Framework for Action Towards a Sustainable Health Workforce in the WHO European Region *(2)*. The Framework for Action outlines four key strategic objectives to achieve a sustainable health workforce in the Region:

  - to transform professional, technical and vocational education and training and to optimize the performance, quality and impact of human resources for health;
  - to align investment in human resources for health with the current and future needs of the population and of health systems through effective planning;
  - to build the capacity of human resources for health-related institutions for effective policy stewardship, leadership and governance; and
  - to improve the evidence base, strengthen data and increase applications that support analytical approaches to human resources for health policy and planning.

- WHO is committed to a programme of activities within the Region and with individual Member States, aligned with the Framework for Action, to support improvements to the supply and quality of the health and care workforces, to emphasize that it less costly to retain than to train, and to support the development of policies and governance that will enable better allocation and retention of health and care workers.

- The COVID-19 pandemic has left many health workers exhausted and demoralized. During the International Year of Health and Care Workers, Member States should continue their work and policies to improve working conditions for health and care workers and protect their health and well-being, invest in their education, enable and empower them to work to the extent of their competence, and support them to make the most of opportunities to improve patient care and professional knowledge through multidisciplinary practices *(3)*.

Potential reasons for worse scenario

- Health and care workers are essential. Their responsibilities in working towards universal health coverage, promoting health and well-being for all at all ages and protecting more people against health emergencies must be acknowledged not only with praise but also with tangible measures. If tangible measures are not forthcoming, health workers might choose to leave their profession and young people might choose not to enter the professions.

- Efficient health labour markets work most efficient when there are equilibriums between education/training and labour supply, between labour demand and health needs, and between labour supply and demand for labour. The balance can be disrupted in various ways. For example, a mismatch between education/training and the labour market supply leads to challenges for the supply of workers with either too many or too few, and a mismatch between the skills or workers required and those available or the quality of the workers. Furthermore, a mismatch between the population health needs and labour market demand can lead to unmet needs, maldistribution and disparities in access through financial barriers. These failures contribute to a difference in supply and demand, leading to an oversupply/undersupply of skills, maldistribution of workers and skills, and vacancies/shortages *(4)*.

References

1. GBD modelling descriptions for European Health Report 2021. In: IHME measuring what matters [website]. Seattle (WA): Institute for Health Metrics and Evaluation (http://www. healthdata.org/policy-report/european-health-report-2021-gbd-methods-appendix, accessed 23 February 2022).

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4. Maeda A, Socha-Dietrich K. Health workforce skills assessment: supporting health workers achieve person-centred care. Paris: Organisation for Economic Co-operation and Development; 2018 (http://healthworkforce.eu/wp-content/uploads/2018/06/FINAL_WP3_Workshop1_report_07032018_AnnexV_A.Maeda_.pdf, accessed 11 December 2021).

5.2.1 intimate partner violence against women

Fig. 1. Estimated prevalence of intimate partner violence against women in the WHO European Region, 2000–2020 and projection to 2030
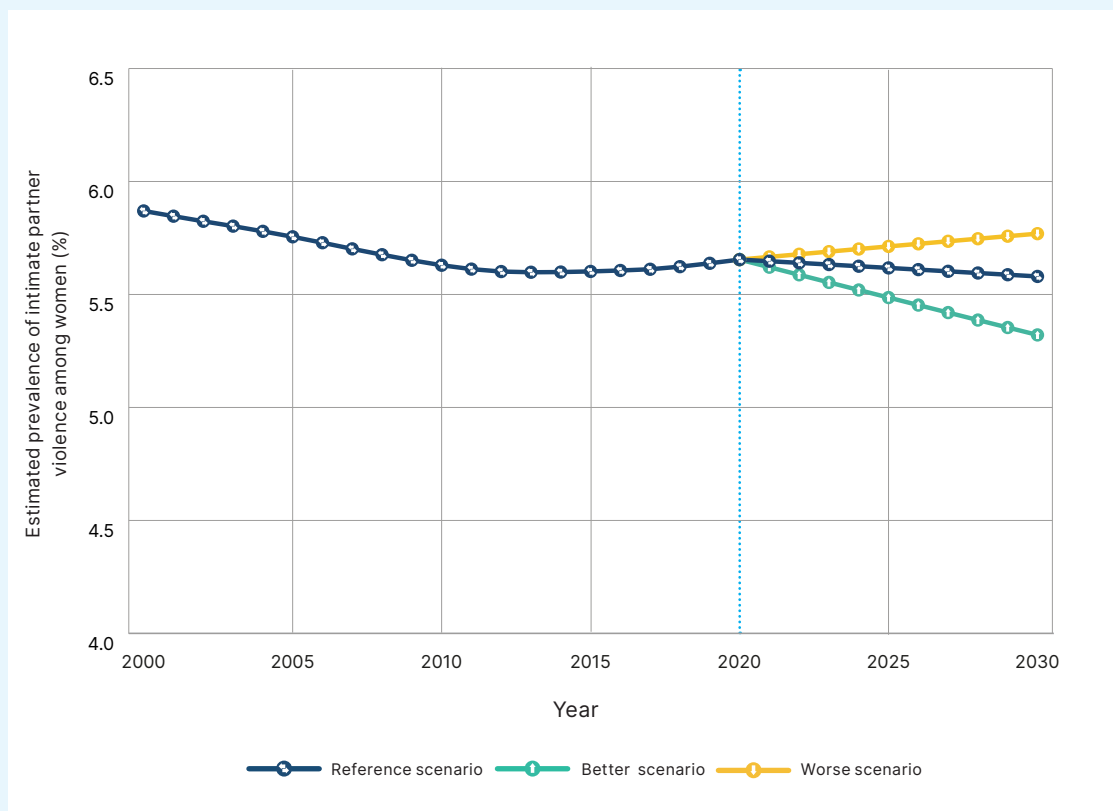
Source: data and projection provided by the IHME, 2021.

Summary description

IHME reports intimate partner violence as the prevalence (%) of ever-partnered women aged 15 years and older who experienced physical or sexual violence by a current or former intimate partner in the previous 12 months. Data on exposure to subtypes of violence are not systematically available across locations and over time. Projections are modelled using an annualized rate of change method on historical trends with recency weights applied, estimated using out-of-sample predictive validity.

Scenarios: reference, better, worse

The **reference scenario** is what the IHME expects to happen based on trends in the past. Results are produced at country level and then combined to produce a regional forecast.

The **better scenario** is what the IHME expects to happen if all countries accelerate progress to the 85th percentile of past rates of progress from the last 30 years. Country-level results are then combined to produce a regional forecast.

The **worse scenario** is what the IHME expects to happen in all countries if progress slows to the 15th percentile of past rates of progress from the last 30 years. Country-level results are then combined to produce a regional forecast.

Retrospective data sources and methods (2000–2020)

For additional information on data sources and estimation methods for intimate partner violence, see the full modelling description on the IHME website *(1)*.

Disclaimer. The IHME projections are estimates and these can change with new data. Estimates are important for projecting future trends when data gaps exist but are no replacement for data from strong surveillance systems. The GBD data used in these projections (2019/2020) synthesize a large number of input sources to estimate mortality, causes of death and illness, and risk factors. The input sources are accessible through an interactive citation tool (http://ghdx.healthdata.org/gbd-2019/data-input-sources). WHO technical units have reviewed the interpretation of the projections, provided further information on key interventions and frameworks in the WHO European Region and were not involved in data curation or modelling.

Background information in the WHO European Region

- Violence against women is a serious human rights violation and a global public health issue. While some women are more at risk than others, violence can happen to any woman in any country, regardless of culture, religion or economic status.

- The WHO European Region reports an average of 6% of ever-partnered women aged 15 years and older who have experienced physical or sexual violence by a current or former intimate partner in the previous 12 months. Across countries in the Region, rates range between 2% and 14%.

- In 2020 several countries reported increases in levels of violence against women and children during the COVID-19 pandemic.

Key takeaways

- Ensuring women and girls are safe is an important lever for sustainable development, which is prioritized under SDG 5. More specifically, SDG 5.2 aims to "eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation".

- Unfortunately, since the launch of the SDGs, there has been no marked progress towards ending intimate partner violence in the Region, and little will change by 2030 if no preventive actions are taken, as reflected in the reference scenario.

- In the better scenario, prevalence could decrease by 5% in 2030 compared with 2015 and in the worse scenario, prevalence could increase by 3%.

Key interventions necessary to achieve reference and better scenario projections

- Violence against women is preventable and policy-makers can have a big role in its prevention. It is critical to invest across prevention strategies and in structural changes to systems that perpetuate gender inequality and discrimination.

- In 2016 WHO launched a global plan of action to strengthen the role of the health system in addressing interpersonal violence *(2)* and in 2019 WHO, with UN Women, published Respect Women: Framework for Prevention *(3)*. The acronym Respect is used to indicate:

  Relationship skills strengthened

  Empowerment of women

  Services ensured

  Poverty reduced

  Environments made safe

  Child and adolescent abuse prevented

  Transformed attitudes, beliefs, and norms.

- The health sector has an important role to play in providing comprehensive health care to women subjected to violence and as an entry point for referring women to other support services.

- Common elements of promising interventions focus on supporting women's safety; combating unequal gender power relations; using participatory approaches that stimulate critical reflection on power and strengthen voice and agency; and facilitating partnerships across organizations and sectors.

Potential reasons for worse scenario

- Lack of political will and low responsiveness to violence against women and discrimination pose a threat to any further improvements in the current trend.

References

1.   GBD modelling descriptions for European Health Report 2021. In: IHME measuring what matters [website]. Seattle (WA): Institute for Health Metrics and Evaluation (http://www.healthdata.org/policy-report/european-health-report-2021-gbd-methods-appendix, accessed 23 February 2022).

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The publication of the European Health Report every three years gives readers – including policy-makers, politicians, public health specialists and journalists – a vital snapshot of health in the WHO European Region and progress towards health and well-being for all. The European Health Report 2021 shows trends in and progress towards the health-related Sustainable Development Goals (SDGs) and the goals of the European Programme of Work 2020–2025, and provides insights into the effects of the COVID-19 pandemic on population health. It reveals gaps in progress, persistent health inequalities and other areas of concern and uncertainty, where action must be taken. This Supplement to the European Health Report 2021 complements the Report and assesses whether the WHO European Region is on track towards reaching the health-related SDGs by presenting projections until 2030 for different scenarios for 12 SDG indicators. The projections were developed by the Institute for Health Metrics and Evaluation. WHO technical units have reviewed the interpretation of the projections and provided further information on key interventions necessary to stay on track and further improve, and potential reasons for a deterioration to occur. Projections as presented in this Supplement are vital tools for developing robust health policies that can withstand future health crises.

THE WHO REGIONAL OFFICE FOR EUROPE

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

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