World health statistics 2024

Monitoring health for the SDGs, Sustainable Development Goals

2024

World Health Organization

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Foreword

The latest edition of the *World health statistics* provides an essential examination of trends in global health over the past two decades that have shaped the world in which we live. It highlights the sobering reality that, due largely to the impact of the COVID-19 pandemic, global life expectancy and healthy life expectancy have both regressed to the level a decade ago, although the impact was unequal across regions and income groups. This regression and its associated inequality signal significant challenges to health systems, demanding urgent attention and action.

Even though their share of all deaths reduced during the pandemic, noncommunicable diseases remain the world's leading causes of death. This holds true for every WHO region except the African Region, where communicable, maternal, perinatal and nutritional conditions are still responsible for over half of all deaths. Globally, the rate of improvement in healthy life expectancy has slowed in recent years, reflecting the increasing burden of NCDs, and the need to strengthen health systems to improve quality of care and meet increasing demands.

At the heart of this year's report is a critical call to action to accelerate progress towards the "triple billion" targets set out in WHO's 13th General Programme of Work, and the Sustainable Development Goals on which they are based. Globally, 585 million more people are expected to be covered by essential health services without catastrophic health spending by 2025 than in 2018 – just over halfway to the target of 1 billion – and 777 million more people are expected to be better protected from health emergencies. Healthier populations provide the sole bright spot, where an estimated 1.5 billion more people will enjoy healthier lives by 2025. Overall, however, progress is insufficient to achieve the health-related SDG targets by 2030.

These gaps reflect huge, missed opportunities in improving global health, and underscore the urgency for the global community to intensify efforts and investments in health. The 14th General Programme of Work aims to bring together Member States, the WHO Secretariat and a broad coalition of partners around a shared strategy to promote, provide and protect health, and to realize WHO's founding vision for the highest attainable standard of health, as a fundamental right for all people.

Dr Tedros Adhanom Ghebreyesus

Director-General
World Health Organization

Abbreviations

AAAA	Addis Ababa Action Agenda
ABR	adolescent birth rates
AMR	antimicrobial resistance
APC	alcohol per capita consumption
ARR	average annual rate of reduction
ART	antiretroviral therapy
ASDR	age-standardized death rates
BMI	body mass index
CC	Creative Commons
CDR	crude death rate
COVID-19	coronavirus disease 2019
DMCF	*Data management competency framework*
DTP	diphtheria, tetanus and pertussis (vaccine)
EU	European Union
GPW13	Thirteenth General Programme of Work
GTS	*Global technical strategy for malaria 2016–2030*
HALE	healthy life expectancy
HEP	health emergencies protection
HIW	health information workers
HPOP	healthier populations
HPV	*Human papillomavirus* (vaccine)
IHR	International Health Regulations
IPV	intimate partner violence
IQR	interquartile range
ITN	insecticide-treated mosquito net
MCV	measles-containing vaccine
MDG	Millennium Development Goal
MDS	Model Disability Survey
MMR	maternal mortality ratio
MVIP	Malaria Vaccine Implementation Programme
NCD	noncommunicable disease
NMR	neonatal mortality rate
NPA	National Prevention Agreement
NTDs	neglected tropical diseases
ODA	official development assistance
OOP	out-of-pocket
OPRM	other pandemic-related mortality
PCV	pneumococcal conjugate vaccine
PHC	primary health care
PM	particulate matter
polio	poliomyelitis
R21	R21-Matrix-M malaria vaccine
RMNCH	reproductive, maternal, newborn and child health
RTS,S	RTS,S/AS01 malaria vaccine
SDG	Sustainable Development Goal
SENADIS	National Disability Service (Chile)
SPAR	States Parties Self-Assessment Annual Report
TB	tuberculosis
TDR	Special Programme for Research and Training in Tropical Diseases
TFA	trans-fatty acids
U5MR	under-five mortality rate
UHC	universal health coverage
UI	uncertainty interval
WASH	water, sanitation and hygiene
WHA	World Health Assembly
WHO	World Health Organization

Introduction

The *World health statistics* report is the annual compilation of health and health-related indicators, which has been published by the World Health Organization (WHO) since 2005. WHO's Division of Data, Analytics and Delivery for Impact produces this report, in collaboration with WHO technical departments and regional and country offices.

The 2024 edition reviews more than 50 health-related indicators from the Sustainable Development Goals (SDGs) and WHO's Thirteenth General Programme of Work (GPW13). The report consists of four chapters, complemented by tables presenting the latest available data (https://www.who.int/data/gho/publications/world-health-statistics).

Chapter 1 presents updated global and regional estimates of life expectancy, healthy life expectancy, and mortality from specific causes, particularly the impact of the COVID-19 pandemic on demographic and epidemiological profiles. Chapter 2 summarizes global and regional trends in the health-related SDGs. Chapter 3 presents the latest update on WHO's Triple Billion target within the GPW13. And Chapter 4 looks at important global health issues, including the double burden of malnutrition, disability-related health inequities, and the health of refugees and migrants. Country-focused stories are presented throughout the report to highlight efforts undertaken to address various health issues.

The information presented in *World health statistics 2024* is based on data available from global monitoring as of May 2024. The data reference years vary, however, as data series are updated on different timelines and with different lag between the data reference year and the publication year. Data have been compiled primarily from publications and databases produced and managed by WHO or United Nations partner entities and supplemented with data and analyses from peer-reviewed publications.

Key messages

In just two years, the COVID-19 pandemic reversed over a decade of gains in both life expectancy at birth and healthy life expectancy (HALE). By 2020, both global life expectancy and HALE had rolled back to 2016 levels (72.5 years and 62.8 years, respectively). The following year saw further declines, with both retreating to 2012 levels (71.4 years and 61.9 years, respectively).

The WHO regions most affected were the Region of the Americas and South-East Asia Region, with declines of about 3 years in life expectancy and 2.5 years in HALE between 2019 and 2021. The Western Pacific Region saw the smallest impacts over the first two pandemic years, with losses of less than 0.1 and 0.2 years in life expectancy and HALE, respectively.

Globally, the share of deaths from noncommunicable diseases (NCDs) among all deaths rose steadily to 73.9% by 2019, while the share of communicable diseases dropped to 18.2%. With the emergence of COVID-19, communicable diseases surged back to 23.0% of all deaths in 2020 and 28.1% in 2021 – a return to 2005 levels. Consequently, the share of NCD deaths declined to 70.0% in 2020 and 65.3% in 2021.

COVID-19 ranked among the top three leading causes of death globally in 2020 and 2021, responsible for 4.1 million and 8.8 million lives lost, respectively. In the Region of the Americas it was the number one cause of death in both years, and ranked in the top five causes for all regions except for the African and Western Pacific regions.

At the midway point for the SDGs, progress on health-related Goals has been mixed. Among the 53 health-related indicators included in this report, 32 have numeric SDG or global targets. None of these have yet been achieved, and none are on track under current trends. However, most indicators (42) are showing movement in the right direction globally.

The world is also off-track to achieve the universal health coverage (UHC), health emergencies preparedness and healthier populations "Triple Billion" targets by 2025. From the 2018 baselines, 585 million more people are expected to have access to essential health services without incurring catastrophic health spending by 2025, well short of the one billion UHC target. For health emergency preparedness, 777 million more people are expected to be protected by 2025, again short of the target. Healthier populations is the sole area positioned to meet its one billion target, with 1.5 billion additional people anticipated to be living healthier lives by 2025. But acceleration across all three areas is needed to achieve broader health-related SDGs by 2030.

The world continues to grapple with the double burden of malnutrition, characterized by the coexistence of undernutrition and overweight/obesity. In 2022, worldwide over one billion people aged 5 years and over were living with obesity, while over half a billion were underweight. In the same year, 148 million children under five were affected by stunting, 45 million suffered from wasting and 37 million were living with overweight. Double-duty actions that efficiently and effectively address both facets of malnutrition are critical to make the most of limited resources.

This report also highlights health challenges faced by persons with disabilities, and refugees and migrants. Globally, in 2021, an estimated 1.3 billion people (16% of the population) had disability and faced health inequities due to avoidable, unfair and unjust factors. Progress requires strengthening health systems that integrate targeted actions to increase equity.

Refugees and migrants are not inherently less healthy than host populations, yet various suboptimal health determinants – further exacerbated by linguistic, cultural, legal and other barriers – mean that they often experience significant health disparities. Access to health care is often limited for refugees and migrants, with only half of the 84 countries surveyed between 2018 and 2021 providing them access to government-funded health services on par with nationals. Lack of quality data further obstructs understanding of their needs and tracking progress on health goals.

The report serves as a crucial reminder that today's health systems must swiftly adapt to respond to changing demographics and persisting inequities.

1. Life expectancy, healthy life expectancy and burden of disease in the light of the COVID-19 pandemic

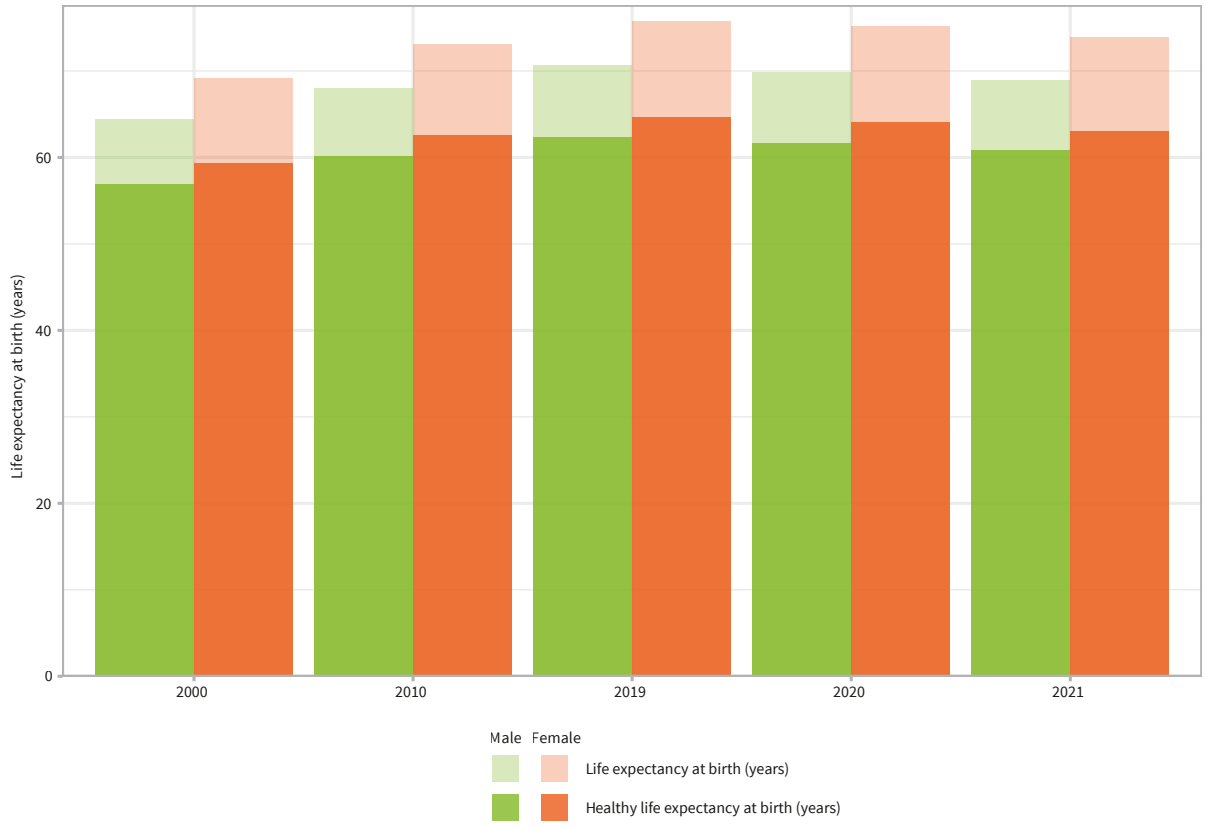
The COVID-19 pandemic has wreaked havoc in population health across the globe. The devastating impacts of the pandemic on health, economy, families and society have been observed worldwide since 2020 and are expected to continue to unfold in the years to come. This chapter documents its detrimental impact on global population health and the inequality of that impact, as reflected in life expectancy and HALE, against the backdrop of the overall progress made in many aspects of population health before the pandemic.

1.1 Life expectancy and healthy life expectancy

1.1.1 Global trend

Steady gain in global life expectancy at birth was observed from the turn of the millennium until the onset of the COVID-19 pandemic, up from 66.8 years (95% uncertainty interval[1] [UI]: 66.2–67.3 years) in 2000 to 73.1 (UI: 72.6–73.7) years in 2019, with men gaining 6.2 years from 64.4 (UI: 63.9–64.9) years to 70.6 (UI 70.1–71.2) years and women gaining 6.5 years from 69.2 (UI: 68.7–69.8) years to 75.7 (UI: 75.3–76.2) years during this period. In parallel, global HALE at birth increased from 58.1 (UI: 57.4–58.9) years in 2000 to 63.5 (UI: 62.7–64.3) years in 2019, with that for men increasing from 57.0 (UI: 56.3–57.6) years to 62.3 (UI: 61.7–63.1) years and that for women increasing from 59.3 (UI: 58.6–60.2) years to 64.6 (UI: 63.8–65.5) years (Fig. 1.1) *(1)*.

Figure 1.1 Global trends in life expectancy and HALE at birth, by sex, 2000–2021



Source: WHO *(1)*.

[1] Unless otherwise noted, the statistics quoted in this report are presented with 95% uncertainty intervals.

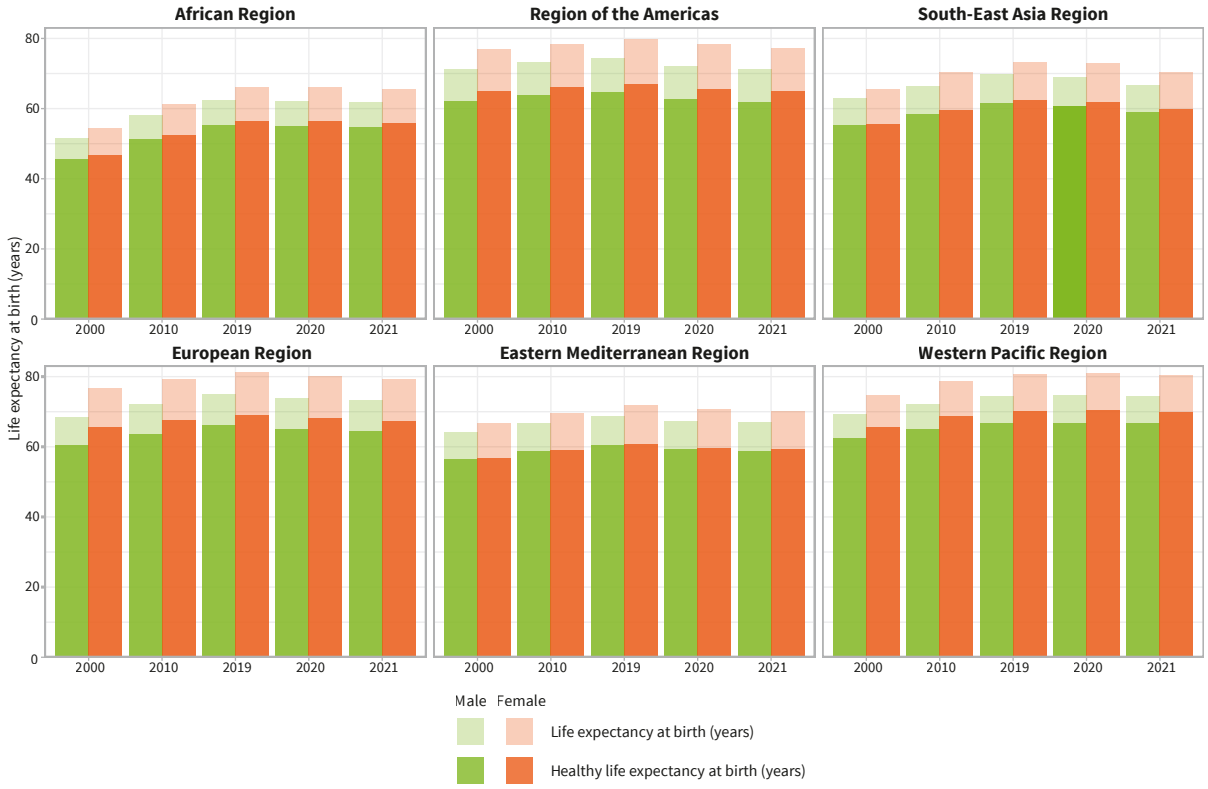
However, the COVID-19 pandemic reversed this trend and wiped out the progress that was made in nearly a decade within just two years. Global life expectancy at birth dropped by 0.7 years to 72.5 (UI: 71.9–73.1) years in 2020 (back to the level of 2016), and by a further 1.1 years to 71.4 (UI: 70.8–72.0) years in 2021 (back to the level of 2012). Similarly, global HALE dropped to 62.8 (UI: 62.0–63.7) years in 2020 (back to the level of 2016) and 61.9 (UI: 61.1–62.8) years in 2021 (back to the level of 2012) *(1)*.

The life expectancy at birth for both men and women dropped by about 1.7 years between 2019 and 2021. However, the decline for men was relatively more evenly split in 2020 (by 0.8 years) and 2021 (by 0.9 years), while the decline for women was concentrated more in 2021 (by 1.3 years) than in 2020 (by 0.5 years). Similar disparity between sexes was observed for HALE: HALE among men dropped by 0.7 years to 61.6 (UI: 60.9–62.4) years in 2020 and another 0.8 years to 60.9 (UI: 60.1–61.6) years in 2021, and HALE among women dropped by 0.5 years to 64.1 (UI: 63.2–65.0) years in 2020 and 1.1 years to 63.0 (UI: 62.2–63.9) years in 2021 *(1)*.

1.1.2 Regional trends

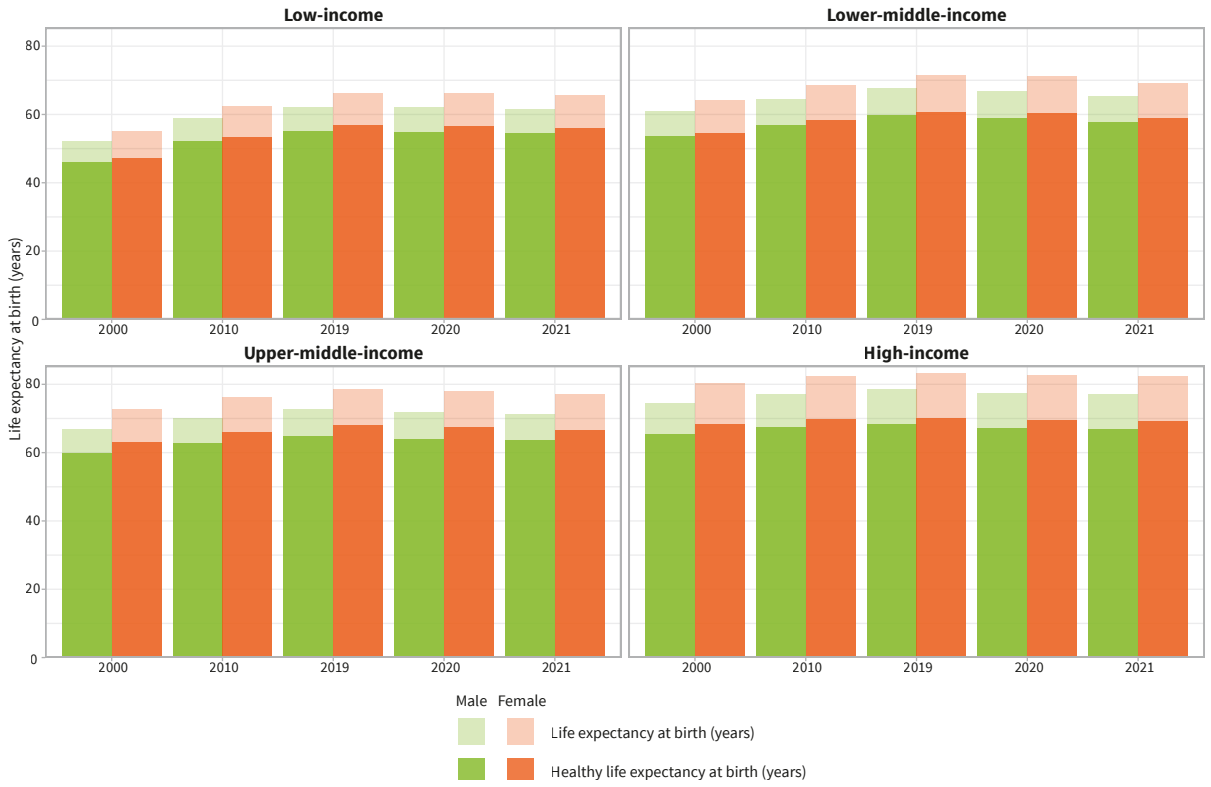
Prior to the pandemic, life expectancy and HALE had risen across all WHO regions and World Bank country income groups between 2000 and 2019 (Figs 1.2 and 1.3). The greatest gains were seen in low-resources settings including the African Region (11.2-year gain in life expectancy and 9.8-year gain in HALE) and the South-East Asia Region (7.3-year gain in life expectancy and 6.5-year gain in HALE); and in low-income countries (10.6-year gain in life expectancy and 9.3-year gain in HALE). Populations in high-income and upper-middle-income countries continue to live longer and healthier lives than those in low- and lower-middle-income countries. However, the pace of improvement in high-income countries has stagnated since 2010, with only a 1.1-year increase in life expectancy and a 0.6-year increase in HALE in 2010–2019, less than one third of the increases in low-income countries over the same period *(1)*.

Figure 1.2 Trends in life expectancy and HALE at birth, by sex and by WHO region, 2000–2021



Source: WHO *(1)*.

Figure 1.3 Trends in life expectancy and HALE at birth, by sex and World Bank income group, 2000–2021



Source: WHO *(1)*.

In addition, the impact of the pandemic was unequal across regions and income groups. The Region of the Americas and the South-East Asia Region have been the hardest hit: life expectancy in both regions dropped by 3.0 years and HALE by 2.5 years between 2019 and 2021. The Western Pacific Region was the least affected during the first two years of the pandemic, with less than 0.1 years and 0.2 years of loss seen for life expectancy and HALE, respectively. It was the only WHO region in which increases in life expectancy (0.2-year gain) and HALE (0.1-year gain) were observed in 2020. However, the region experienced some losses (0.3 years in life expectancy and 0.3 years in HALE) in 2021 compared with 2020, that cancelled out the earlier gains *(1)*.

The scale of pandemic-related tolls also varied over time across regions. The Region of the Americas, the European Region and the Eastern Mediterranean Region all experienced more severe impact in the first pandemic year, with 2020 seeing at least two thirds of the life expectancy decline and three fifths of the HALE decline. In contrast, coinciding with the wider spread of the Delta variant, the decline in life expectancy and HALE in the African and South-East Asia regions occurred more predominantly in 2021, accounting for at least 65% of the total losses in 2019–2021 (Fig. 1.2) *(1)*.

By World Bank income groups, life expectancy was cut by 0.6 years in low-income countries and by 2.4 years in lower-middle-income countries, and HALE cut by 0.6 years and 2.0 years, respectively, between 2019 and 2021. Over half of the years lost in life expectancy and HALE in upper-middle-income countries and over 70% of those in high-income countries in 2019–2021 occurred during the first year of the pandemic. In lower-middle-income countries, the hardest hit occurred in 2021, seeing over 70% of the loss in life expectancy and HALE. In low-income countries, the worsening of longevity was rather minimal in 2020, associated with only 2% (0.01 of 0.55 years) of the decline in life expectancy (Fig. 1.3) *(1)*.

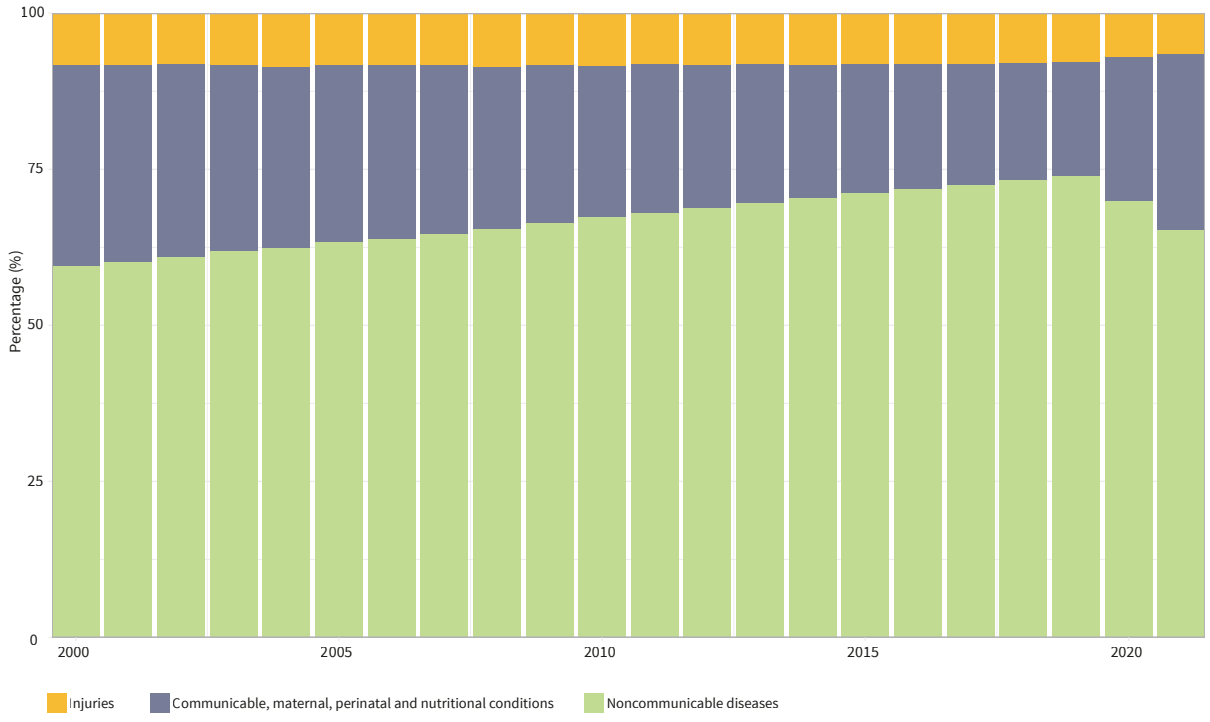
1.2 Shifting disease burden

1.2.1 Broad categories of causes of deaths

Not only has the pandemic set back healthy longevity worldwide by years, it also reversed the previous trends of shifting disease burden to NCDs. Grouping deaths into three broad categories of causes of death – communicable, maternal, perinatal and nutritional conditions ("communicable diseases" hereafter), NCDs, and injuries – clear transition can be noticed well before the pandemic *(1)*.

Globally, NCDs accounted for 59.5% of all deaths in 2000, rising to 73.9% in 2019, while the share of communicable diseases dropped from 32.2% in 2000 to 18.2% in 2019, and injuries remained relatively stable around 8%. As COVID-19 emerged as a new infectious disease and started to take a toll on human lives, the share of deaths due to communicable diseases jumped back to the 2012 level (23.0%) in 2020 and further back to the 2005 level (28.1%) in 2021. Simultaneously, the share of NCD deaths dropped to 69.9% in 2020 and to 65.3% in 2021, and the share of injury deaths dropped to just about 7% in both years (Fig. 1.4) *(1)*.

Figure 1.4 Composition of causes of death, global, 2000–2021



Note: In countries that have low-quality vital registration, WHO's current estimates include a cause of death category, "other pandemic-related mortality (OPRM)", which could include underlying causes of deaths from any of the three groups. The graph only shows the relative composition of the three groups; OPRM is not included.

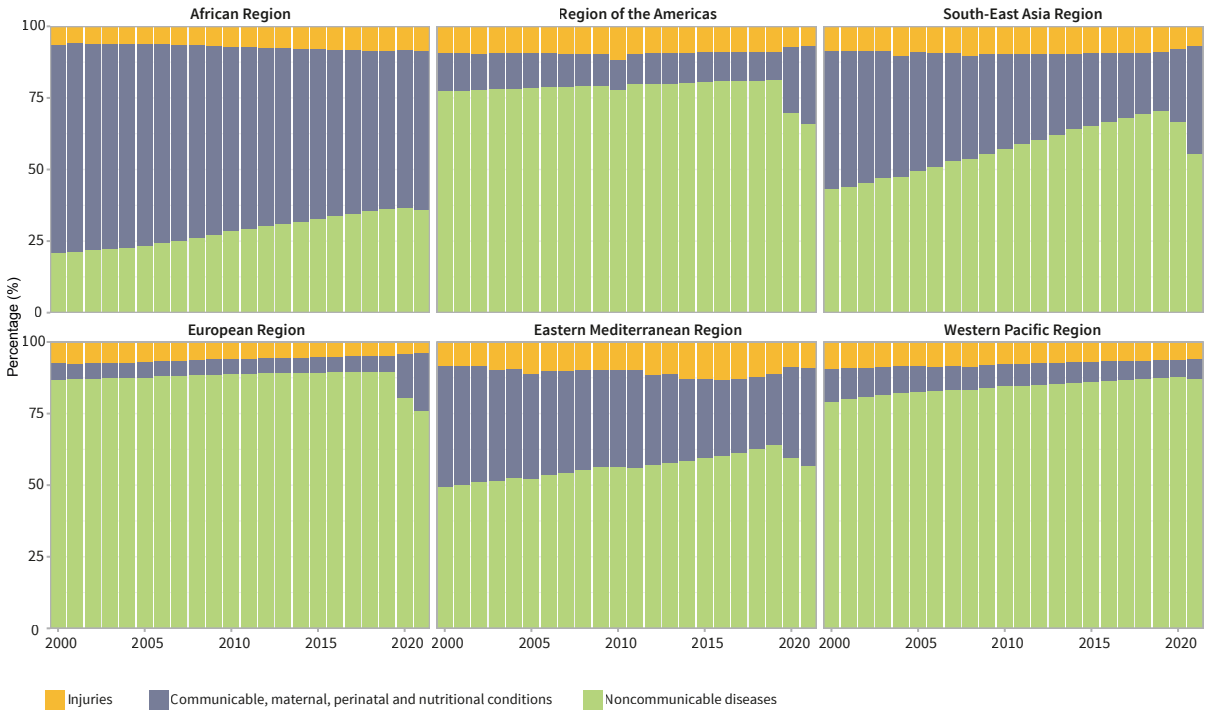
Source: WHO *(1)*.

Among WHO regions, the African Region still had the largest share (54.9%) of deaths attributable to communicable diseases before the pandemic, with NCDs accounting for only about 36% of all deaths in 2019. These levels remained largely stable in 2020 and 2021, indicating little impact of the COVID-19 pandemic on the broad distribution of causes of death. Similarly, the Western Pacific Region has seen limited change since 2019 in the distribution across the three categories, with NCDs accounting for about 88% and communicable diseases for about 6% of all deaths (Fig. 1.5) *(1)*.

However, the pandemic has been more disruptive to the expected trajectories in other WHO regions. The European Region, which had the highest share of NCD deaths among all deaths in 2019 (89.6%), experienced an abrupt shift of disease burden back to communicable diseases in 2020 and 2021, as the share of NCD deaths dropped to 75.9% in 2021 and the share of communicable diseases nearly quadrupled from 5.3% in 2019 to 20.0% in 2021. Other WHO regions also experienced sizable, reversed shift of disease burden from NCDs and injuries back to communicable diseases, leading to increases in its share ranging from about 10% (Eastern Mediterranean Region) to 18% (South-East Asia Region) *(1)*.

Similar disparity was also observed across World Bank income groups (Fig. 1.6). Bearing the largest share (nearly 50%) of deaths due to communicable diseases, low-income countries saw minimal change in the distribution of deaths from the three broad groups between 2019 and 2021. In contrast, NCDs in upper-middle-income and high-income countries were responsible for the largest share of deaths at 84.8% and 88.1%, respectively, in 2019, but these figures dropped by 9.9% and 8.1% between 2019 and 2021 *(1)*.

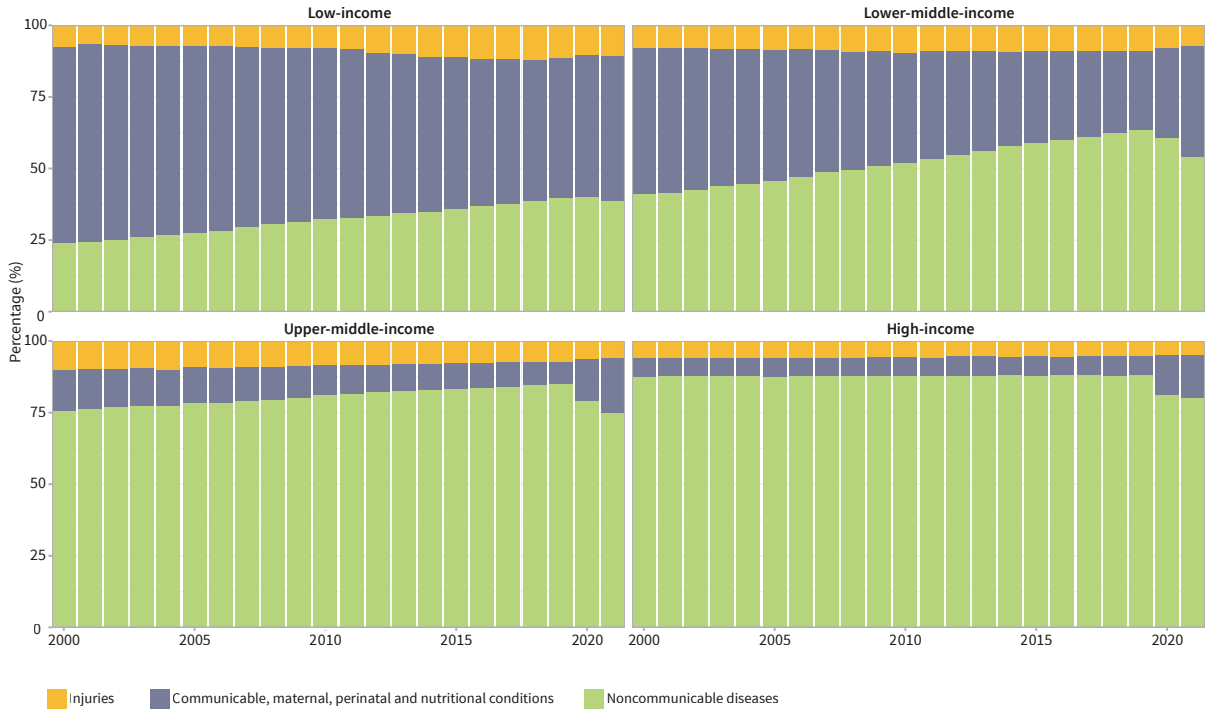
Figure 1.5 Composition of causes of death, by WHO region, 2000–2021



Note: In countries that have low-quality vital registration, WHO's current estimates include a cause of death category, "other pandemic-related mortality (OPRM)", which could include underlying causes of deaths from any of the three groups. The graph only shows the relative composition of the three groups; OPRM is not included.

Source: WHO *(1)*.

Figure 1.6 Composition of causes of death, by World Bank income group, 2000–2021



Note: In countries that have low-quality vital registration, WHO's current estimates include a cause of death category, "other pandemic-related mortality (OPRM)", which could include underlying causes of deaths from any of the three groups. The graph only shows the relative composition of the three groups; OPRM is not included.

Source: WHO *(1)*.

These patterns are the result of a combination of transitioning cause-of-death profiles and changing population structure. Examining age-standardized death rates (ASDR) exhibits more clearly the progress achieved prior to the COVID-19 pandemic and the setback it caused. Globally, the ASDR from communicable diseases was cut by about half from 244.5 (UI: 155.3–373.9) to 119.3 (UI: 72.8–189.1) per 100 000 population in 2000–2019. Yet, the pandemic brought back the rate to 160.4 (UI: 107.6–237.8) per 100 000 in 2020 and 211.4 (UI: 150.1–300.7) per 100 000 in 2021, representing 34.5% and 77.2% increases from the 2019 baseline. While the global improvement up to 2019 was primarily driven by the progress in the African Region (56.1% decline), South-East Asia Region (63.3% decline) and Eastern Mediterranean Region (47.4% decline), the Region of the Americas and the European Region were hardest hit by the pandemic in relative terms, with ASDR from communicable diseases more than tripled (3.4 and 3.8 times, respectively) between 2019 and 2021. The South-East Asia and Eastern Mediterranean regions also saw ASDR from communicable diseases more than doubled in the same period. In comparison, the African and Western Pacific regions only experienced moderate increases (14.3% and 11.9% increase, respectively) *(1)*.

Progress was also made in all WHO regions in 2000–2019 for mortality from NCDs (except for the South-East Asia Region) and mortality from injuries (except for the Eastern Mediterranean Region), leading to 18.8% reduction in ASDR from NCDs and 23.1% reduction in ASDR from injuries globally in 2000–2019. Limited impact was seen in ASDR from these two groups of cause of death in 2019–2021 compared with that from communicable diseases *(1)*.

Similar trends were observed across all World Bank income groups, with sizable reductions observed in ASDR for all three broad cause categories in 2000–2019 and little excess change brought by the pandemic in 2020 and 2021 for NCDs and injuries. The COVID-19 pandemic reversed the declining trend in ASDR for communicable diseases in all income groups to the extent that the level in 2021 that was above the 2000 level in upper-income countries and nearly double the 2000 level in high-income countries; thus, undoing over two decades of work *(1)*.

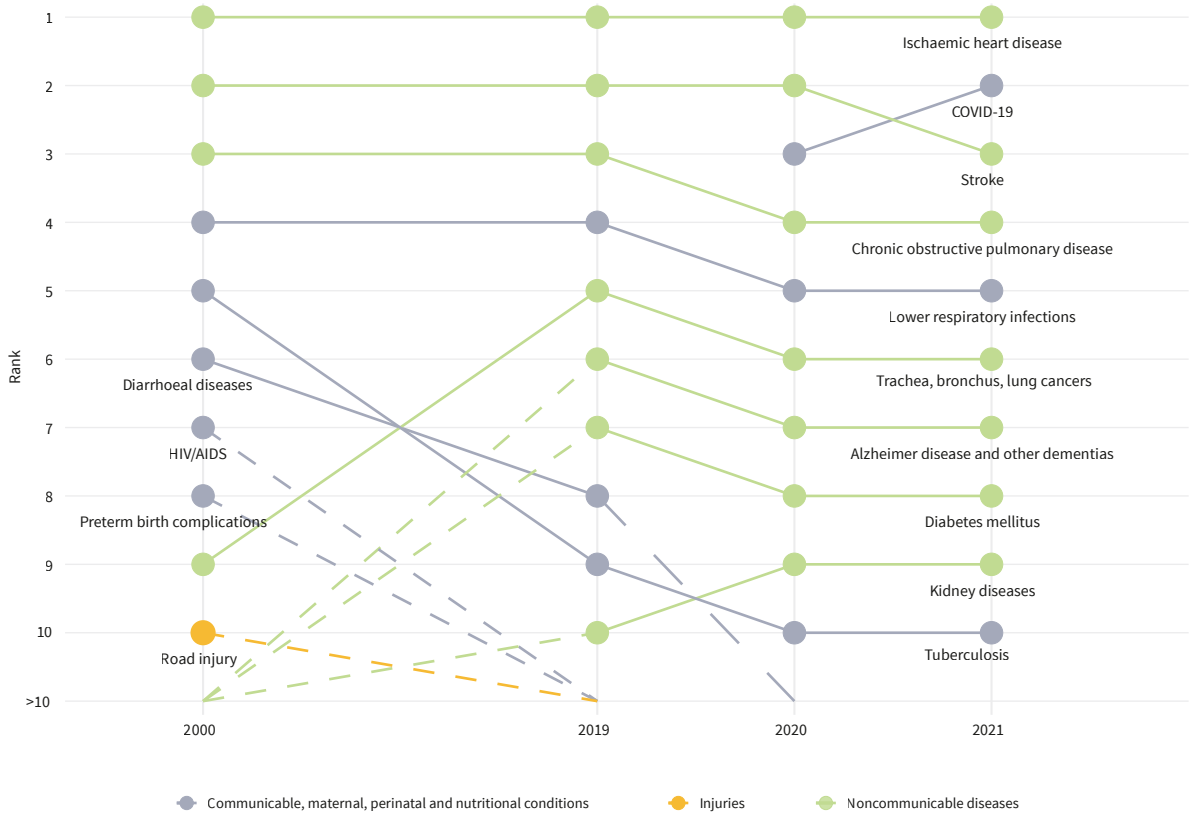
1.2.2 Leading causes of death

Looking at the leading causes of death, there was also a clear transition from communicable causes to NCDs. Globally, five of the 10 leading causes in 2000 were communicable and four were NCDs, with road injury being the only injury cause (Fig. 1.7). In 2019, seven of the 10 leading causes were NCDs and the remaining three communicable *(1)*.

The pace of transition was uneven across regions and income groups. In 2019, communicable diseases continued to take up seven of the top 10 causes of deaths along with two NCDs and one injury in the African Region and low-income countries *(1)*.

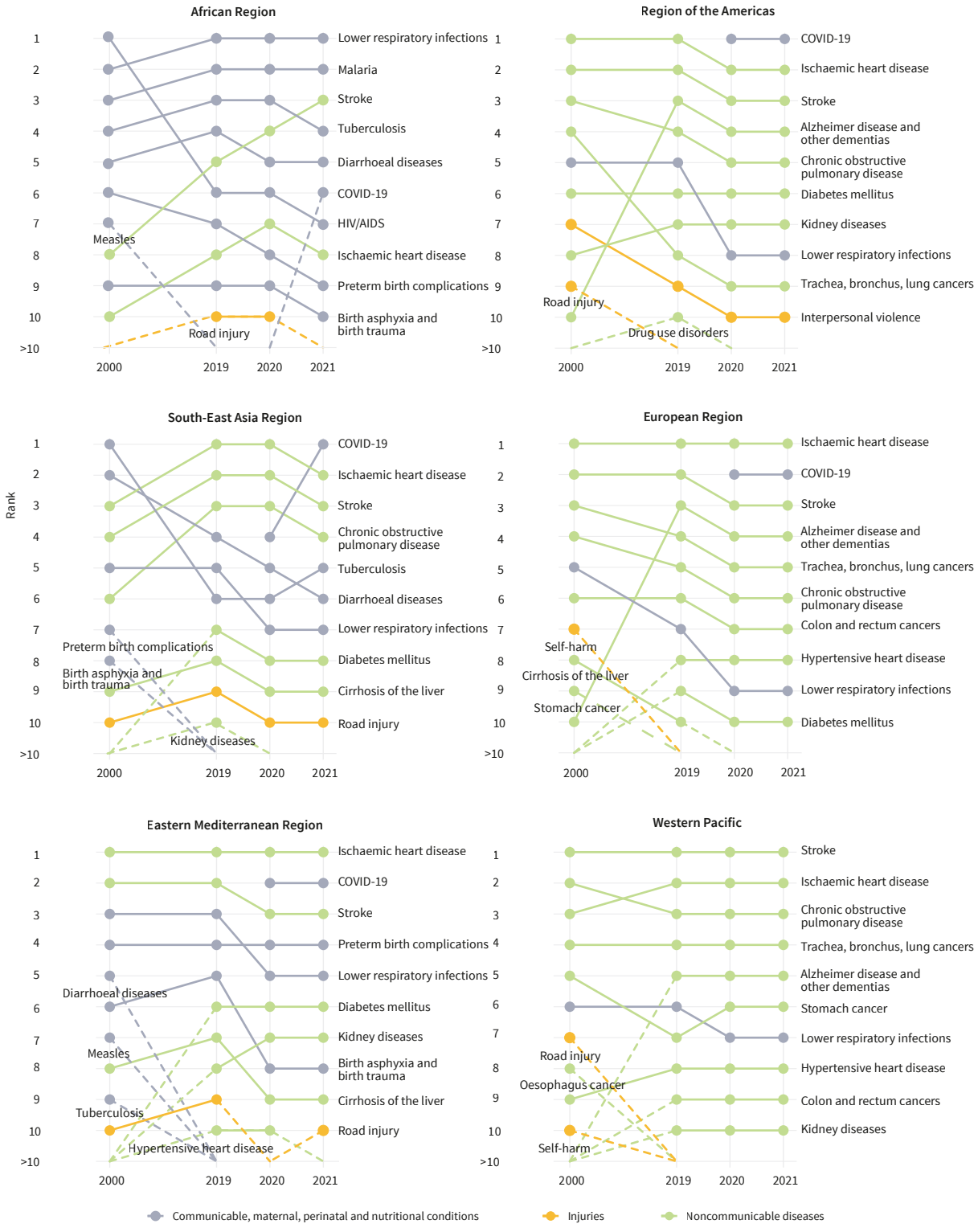
With communicable diseases being effectively prevented or treated, and populations surviving to older ages where NCDs become the predominant risk, NCDs already accounted for nine of the top 10 causes in 2019 in the European Region and the Western Pacific Region (Fig. 1.8), as well as in upper-middle-income and high-income countries (Fig. 1.9). The only communicable disease that ranked among the top 10 in these regions or income groups were lower respiratory infections *(1)*.

Figure 1.7 Top 10 causes of death globally in 2000, 2019, 2020 and 2021



Note: Solid lines represent movement within the top 10 causes of death. Dashed lines represent movement in or out of the top 10 causes of death.
Source: WHO *(1)*.

Figure 1.8 Top 10 causes of death, by WHO region, in 2000, 2019, 2020 and 2021

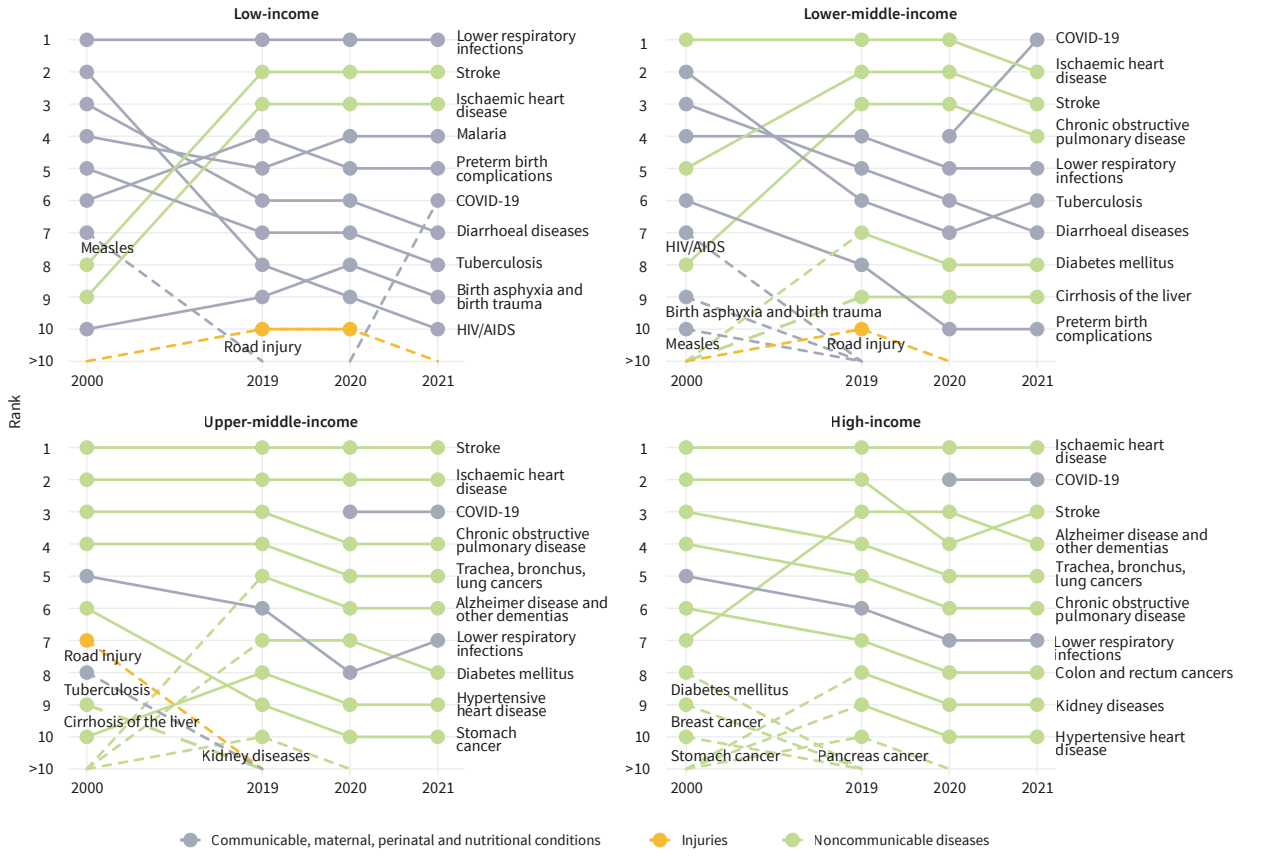


Note: Solid lines represent movement within the top 10 causes of death. Dashed lines represent movement in or out of the top 10 causes of death.

Source: WHO *(1)*.

This distribution of the leading 10 causes of death by broad cause group at global level remained unchanged from 2019 in 2020 and 2021; however, COVID-19 emerged as the third and second leading causes, respectively, claiming 4.1 million and 8.8 million lives globally. In all but two WHO regions (the African and Western Pacific regions), COVID-19 ranked among the top five causes of deaths in 2020 and 2021, responsible for the largest number of deaths in both years in the Region of the Americas, in 2021 in the South-East Asia Region and the second largest number of deaths in both years in the European and the Eastern Mediterranean regions. In the African Region, the disease only moved up from 12th to sixth in 2021. While in the Western Pacific Region it remained out of the top 10, it rose from being 50th in 2020 to 19th in 2021 *(1)*.

Figure 1.9 Top 10 causes of death, by World Bank income group, in 2000, 2019, 2020 and 2021



Note: Solid lines represent movement within the top 10 causes of death. Dashed lines represent movement in or out of the top 10 causes of death.
Source: WHO *(1)*.

1.3 Mortality-related SDG indicators

The SDG framework includes several indicators on mortality pertaining to specific age groups, such as young children, and mortality due to specific causes *(2)*. Overall progress has been observed for mortality-related SDG indicators; however, the current trends are not strong enough to reach the targets by 2030.

1.3.1 Maternal and child mortality

Since the turn of the millennium, enhancing the health of mothers and children has been a top priority for global development. Maternal and child mortality reductions

were among the Millennium Development Goals (MDGs), steering the global efforts through to the year 2015. They remain among the global targets in the SDG period, which runs from 2015 to 2030.

Maternal mortality

Marked reduction in maternal mortality was achieved during the MDG years between 2000 and 2015. The global maternal mortality ratio (MMR) (SDG indicator 3.1.1) dropped by a third from 339 (80% UI: 319–360) deaths per 100 000 live births in 2000 to 227 (80% UI: 211–246) deaths per 100 000 live births in 2015, equivalent to a 2.7% (80%, UI: 2.0–3.2%) average annual rate of reduction (ARR). However, progress has stagnated since, and the global MMR only dropped to 223 (80% UI: 202–255) deaths per 100 000 live births in 2020 as the ARR fell to –0.04% (80% UI: –1.6 to 1.1%) between 2016 and 2020 (Fig. 1.10). An estimated 287 000 (80% UI: 273 000–343 000) women globally died from a maternal cause in 2020, a number that remained unacceptably high and is equivalent to almost 800 deaths every day or one every two minutes *(3)*.

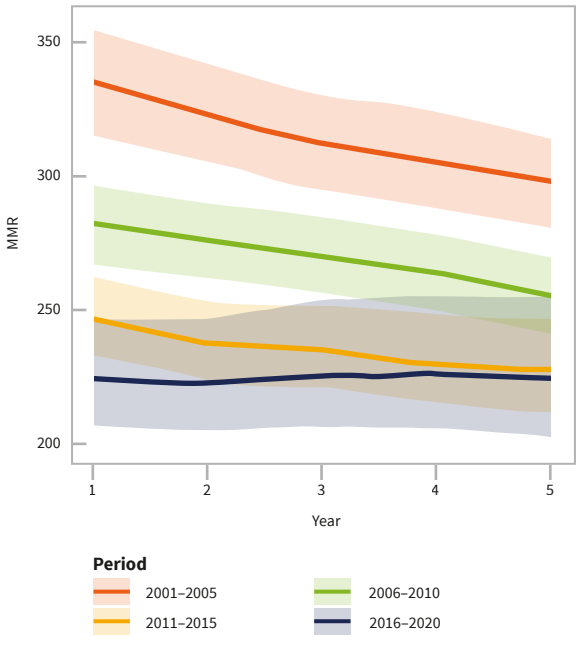
The African Region remained the region with the highest MMR throughout the two decades, despite a sustained decline with an ARR of 2%. The South-East Asia Region had experienced the steepest decline, reducing MMR from 372 (80% UI: 336–423) deaths per 100 000 live births in 2000 to 117 (80% UI: 106–133) deaths per 100 000 live births in 2020 and still maintaining an ARR at nearly 5% in the SDG era. Increasing MMRs were seen in the Region of the Americas, the European Region and Western Pacific Region between 2016 and 2020, despite the sizable decline during the MDG era. However, the levels of MMR have remained below 80 deaths per 100 000 live births in these three regions since 2000 *(3)*.

To achieve the SDG global target of MMR below 70 deaths per 100 000 live births by 2030, an ARR of 11.6% is required between 2021 and 2030, equivalent to over 1 million deaths averted, compared with a scenario where the 2016–2020 global stagnation continues *(2, 3)*.

Mortality among children under 5 years of age and among newborns

Substantial global progress has been made in reducing childhood mortality since 2000. The total number of deaths among children under 5 years of age worldwide declined from 9.9 million (90% UI: 9.8–10.1 million) in 2000 to 4.9 million (90% UI: 4.6–5.4 million) in 2022, reflecting a 51% decline in the global under-five mortality rate (U5MR, SDG indicator 3.2.1) from 76 (90% UI: 75–78) deaths per 1000 live births in 2000 to 37 (90% UI: 35–41) deaths per 1000 live births in 2022 *(4)*.

Figure 1.10 Global MMR stratified by five-year time period, 2000–2020



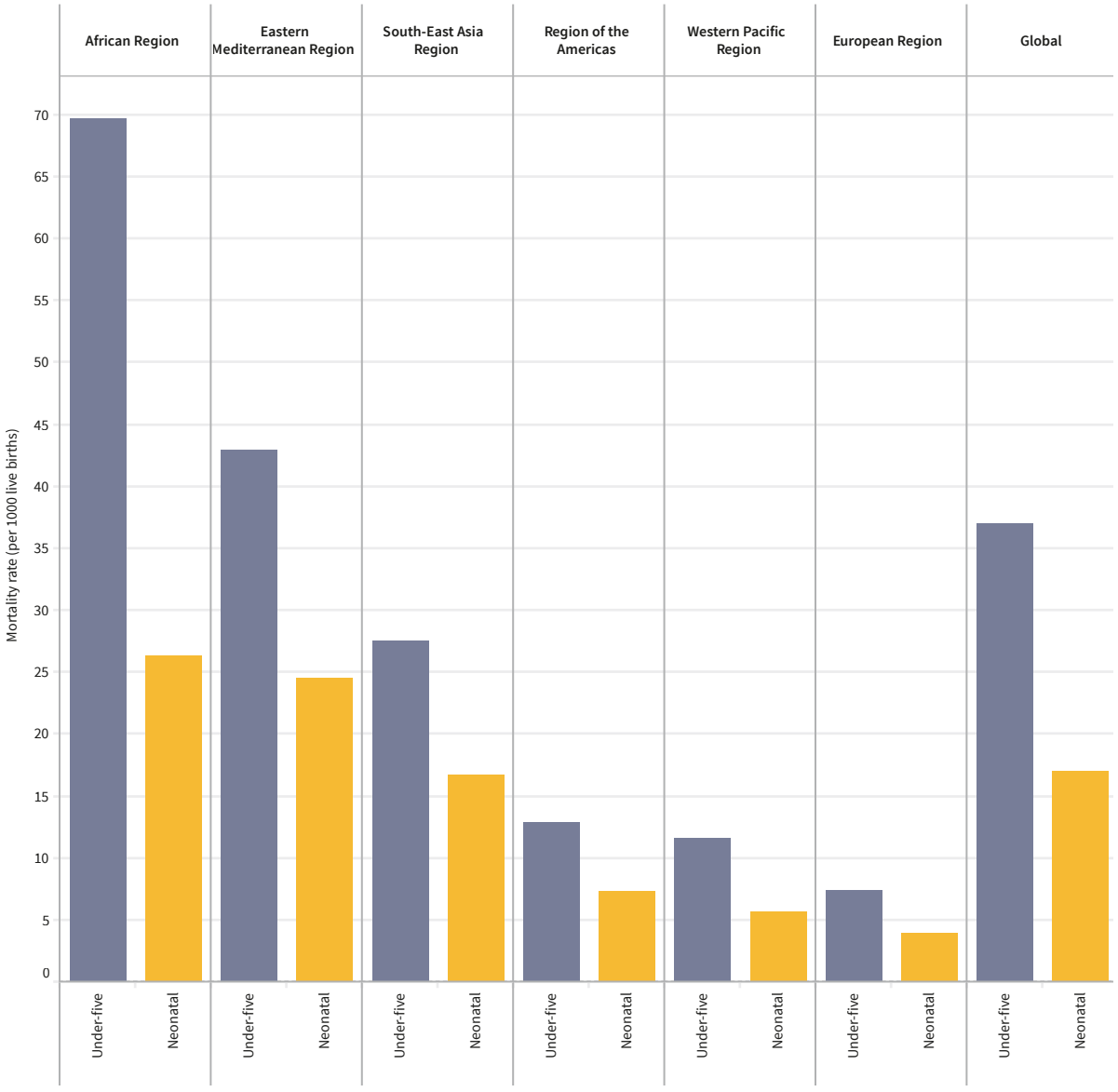
Shaded area indicates 80% uncertainty intervals.

Source: WHO et al. *(3)*.

Despite the noteworthy progress at the global level, inequality across regions persists. Children in the African Region continued to have the highest risk of dying before reaching the age of five. In 2022, the U5MR in the region was 70 (90% UI: 63–82) deaths per 1000 live births, 10 times the U5MR in the European Region (Fig. 1.11). In fact, the African Region accounted for over half (2.7 million, 90% UI: 2.5–3.2 million) of the total under-five deaths in 2022, while only accounting for 30% of the global live births *(4)*.

At the country level, U5MRs in 2022 ranged from 1.5 (90% UI: 0.7–3.1) deaths per 1000 live births to 117.3 (90% UI: 93.3–147.7) deaths per 1000 live births, which means that the risk of dying before turning five for a child born in the highest-mortality country was about 80 times that in the lowest-mortality country *(4)*.

Figure 1.11 U5MR and NMR, globally and by WHO region, 2022



Source: UNICEF et al. *(4)*.

Newborn deaths represent an increasing share of total under-five deaths, up from 41% in 2000 to 47% in 2022. Globally, 2.3 million (90% UI: 2.2–2.6 million) children died in the first month of life in 2022, down from 4.1 million (90% UI: 4.0–4.2 million) in 2000. However, the decline in global neonatal deaths from 2000 to 2020, at 44%, has been slower compared with the 56% drop in the number of deaths among children aged 1–59 months during the same period *(4)*.

The chances of survival from birth varies widely depending on where a child is born. The WHO African and Eastern Mediterranean regions had the highest neonatal mortality rates (NMR, SDG indicator 3.2.2) in 2022 at 26 (90% UI: 24–32) deaths per 1000 live births and 25 (90% UI: 21–30) deaths per 1000 live births, respectively (Fig. 1.11). With country-level NMRs in 2022 ranging from 0.7 (90% UI: 0.3–1.5) deaths per 1000 live births to 39.4 (90% UI: 10.8–108.7) deaths per 1000 live births across the world, the risk of a newborn dying before their 28th day of life in the highest-mortality country was almost 60 times that in the lowest-mortality country *(4)*.

Progress in reducing U5MR and NMR slowed in the first half of the SDG era (2015–2022) compared with what was achieved in the MDG era (2000–2015). Globally, the average ARR in U5MR decreased from 3.8% (UI: 3.6–4.0%) in 2000–2015 to 2.1% (90% UI: 0.9–2.7%) in 2015–2022. Similarly, the ARR for global NMR decreased from 3.0% (90% UI: 2.7–3.3%) in 2000–2015 to 1.8% (90% UI: 0.5–2.5%) in 2015–2022 *(4)*.

If current trends continue, 59 countries will not meet the SDG target for U5MR (25 or fewer deaths per 1000 live births by 2030). Even more countries are at risk of missing the SDG target for NMR (12 or fewer deaths per 1000 live births by 2030): 64 countries will need to accelerate the mortality decline to meet the target on time. The majority of the countries not on track to achieve the SDG targets are in the African Region, reinforcing the fact that children face different chances of survival depending on where they are born. Reaching the targets in all countries and areas will avert 9 million deaths among children under 5 years of age between 2023 and 2030, some 42% of which would be among neonates *(2, 4)*.

1.3.2 Mortality due to injury

Road injury

Despite the growth in the global population and number of vehicles, the global number of road traffic fatalities declined by 5.9% from 1.25 million (UI: 1.11–1.39 million) deaths in 2010 to 1.18 million (UI: 1.05–1.30 million) deaths in 2021 *(1, 5)*. While 10 countries in four regions achieved the target to halve the number of road traffic deaths during this period, at the global level the reduction fell far short of the target of the United Nations Decade of Action for Road Safety 2010–2020, and at this pace the global target of the United Nations Decade of Action for Road Safety 2021–2030 to halve deaths by 2030 would not be met either *(6, 7)*. In 2021, the South-East Asia and the Western Pacific regions shouldered more than half of the global burden of road traffic deaths, with 319 000 (UI: 284 000–354 000) deaths (27% of the global burden) and 298 000 (UI: 278 000–317 000) deaths (25% of the global burden), respectively *(1, 5)*.

The decline in the global number of deaths corresponds to a 17% decline from the crude death rate (CDR) due to road traffic injuries (SDG indicator 3.6.1) from 17.9 (UI: 16.0–19.8) deaths per 100 000 population in 2010 to 14.9 (UI: 13.3–16.4) deaths per 100 000 population in 2021. Declines in CDRs were observed in all regions in the period. However, the region with the highest CDR in 2021 (the African Region, at 19.4 [(UI: 16.4–22.4]) per 100 000 population) still had a CDR that was nearly three times as high as in the region with the lowest CDR (the European Region, at 6.7 [UI: 6.2–7.3] per 100 000 population). The slowest progress was seen in the Region of the Americas, yet still even this was down by 9.4% from 15.6 (UI: 14.5–16.6) per 100 000 population in 2010 to 14.1 (UI: 13.0–15.2) per 100 000 population in 2021. In 2021, low-income countries faced the highest CDR from road injuries at 21.3 (UI: 17.9–24.8) per 100 000 population, while high-income countries had the lowest CDR at 7.6 (UI: 7.1–8.2) per 100 000 population *(1, 5)*.

Suicide

The global total of suicide deaths decreased from an estimated 762 000 (UI: 590 000–892 000) in 2000 to 717 000 (UI: 545 000–913 000) in 2021. The CDR from suicide (SDG indicator 3.4.2) declined steadily between 2000 and 2020 from 12.4 (UI: 9.6–14.5) deaths per 100 000 population to 9.0 (UI: 7.0–11.3) deaths per 100 000 population, and then increased slightly to 9.1 (UI: 6.9–11.6) deaths per 100 000 population in 2021 *(1)*.

The highest burden of suicide deaths shifted from the Western Pacific Region in 2000 (243 000 deaths, UI: 168 000–282 000) to the South-East Asia Region (206 000 deaths, UI: 151 000–257 000) in 2021, with the former seeing over a third reduction in suicide CDR from 14.5 (UI: 10.1–16.8) per 100 000 population to 9.4 (UI: 7.0–12.1) per 100 000 population, and the latter seeing a one fifth reduction in CDR from 12.7 (UI: 9.4–15.1) per 100 000 population to 10.0 (UI: 7.4–12.5) per 100 000 population

between 2000 and 2021. The European Region also observed striking decline in suicide deaths, with CDR falling from 21.3 (UI: 19.8–22.9) per 100 000 population, the highest among all regions in 2000, to 12.3 (UI: 10.3–14.4) per 100 000 population in 2021. The African Region underwent a very modest decline in suicide CDR between 2000 and 2020 (7.0 [UI: 4.5–10.2] per 100 000 population to 6.9 [UI: 4.4–10.3] per 100 000 population), followed by an increase to 7.2 (UI: 4.6–10.9) per 100 000 population in 2021. The Eastern Mediterranean remained the region with the lowest CDR throughout the period. The Region of the Americas was the only region where overall increase was seen, rising from 7.2 (UI: 6.6–7.8) per 100 000 in 2000 to 9.8 (UI: 8.7–10.8) per 100 000 in 2021 *(1)*.

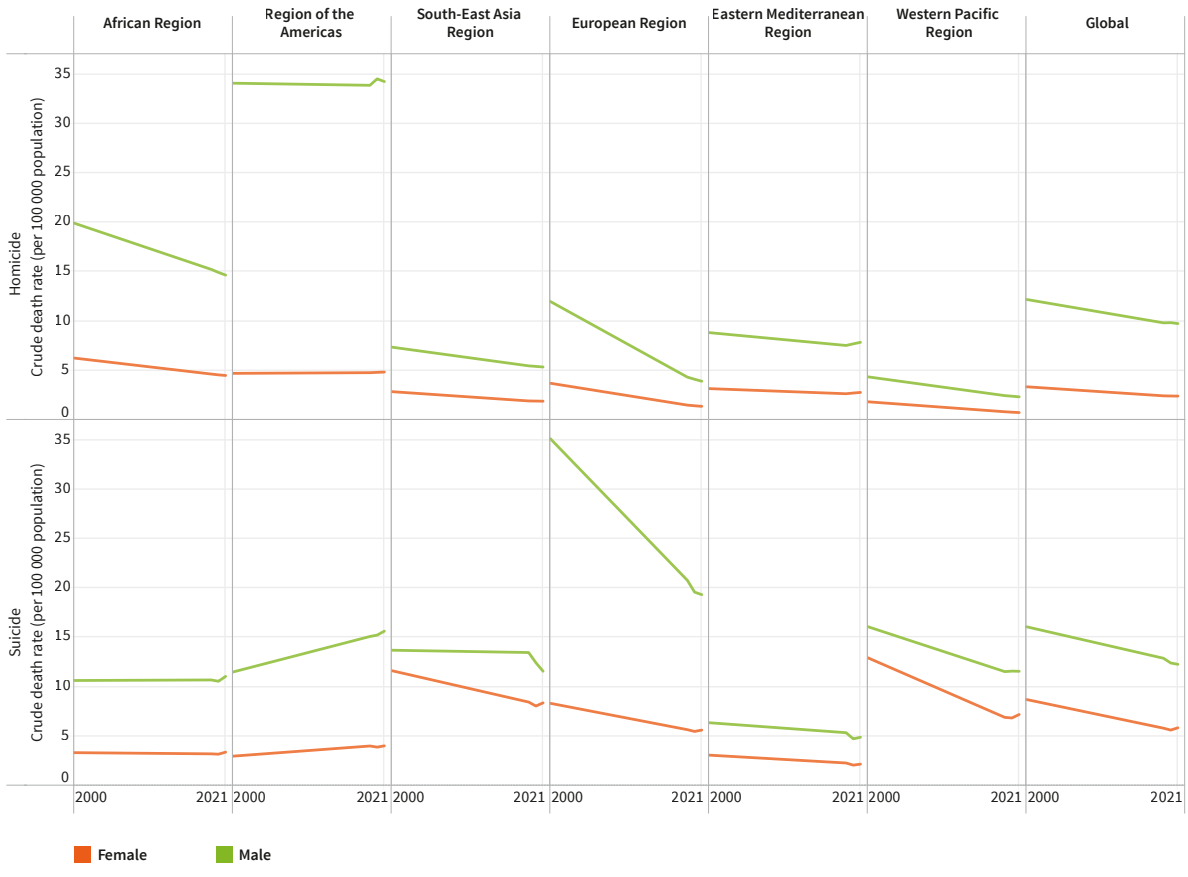
Globally, the rate of suicide deaths for men was more than double that for women in 2021 (CDR 12.3 [UI: 9.6–15.4] per 100 000 population versus 5.9 [UI: 4.2–7.7] per 100 000 population). However, the sex disparity was uneven across regions, with a male-to-female ratio ranging from as low as 1.4 in the South-East Asia Region to nearly 4.0 in the Region of the Americas (Fig. 1.12) *(1)*.

Homicide

Nearly 481 000 (UI: 360 000–649 000) people were homicide victims in 2021, although there was a slight increase (478 000 [UI: 400 000–578 000]) from 2000, corresponding to a decline in CDR by about 22%, from 7.8 (UI: 6.5–9.4) per 100 000 population in 2000 to 6.1 (UI: 4.6–8.2) per 100 000 population in 2021. About 80% of the victims were men *(1)*.

The WHO Region of the Americas had the highest mortality burden from homicide in 2021 with a total of 199 000 (UI: 169 000–233 000) deaths, accounting for 41.3% of the total global homicide deaths but only 13.0% of the global population. In contrast, about a quarter of the global population resides in the Western Pacific Region, but this region accounted for only 6.2% of global homicide deaths, with a CDR (1.6 [UI: 1.1–2.1] per 100 000 population) that was 8% of that in the highest region (Region of the Americas, 19.4 (UI: 16.5–22.7) per 100 000 population) and just about 16% of that in the second highest (African Region, 9.6 [UI: 5.9–15.1] per

Figure 1.12 Global and regional trends in the mortality rates due to suicide and homicide, 2000–2021



Source: WHO *(1)*.

100 000 population) in 2021. Compared with the Region of the Americas and the African Region, the CDR of homicide was also relatively low in the European, South-East Asia and Eastern Mediterranean regions, at 2.6 (UI: 2.1–3.3) per 100 000 population, 3.7 (UI: 2.7–5.0) per 100 000 population and 5.4 (UI: 3.2–8.6) per 100 000 population, respectively *(1)*.

Men and women face disproportionate risk of homicide deaths, and the sex disparity was unevenly distributed across WHO regions. Globally, the male-to-female ratio for CDR for homicide mortality in 2021 was 4.0, ranging from about 2.8 in the South-East Asia, Eastern Mediterranean and European regions to 7.1 in the Region of the Americas. A strong age pattern was also observed, with young adults at age 20–24 years having the highest age-specific mortality rate, peaking at 12.7 (UI: 9.5–17.1) deaths per 100 000 population globally and up to 40.6 (UI: 36.1–45.3) deaths per 100 000 population in the Region of the Americas (Fig. 1.12) *(1)*.

Unintentional poisoning

Globally, about 59 000 (UI: 32 000–90 000) people died from unintentional poisoning in 2021, approximately down by over 4000 from the figure in 2000. This represents a drop in the CDR from unintentional poisoning (SDG indicator 3.9.3) of a quarter, from 1.0 (UI: 0.8–1.5) per 100 000 population in 2000 to 0.7 (UI: 0.4–1.1) per 100 000 population in 2021. The highest CDR in 2021 was observed in the African Region at 1.2 (UI: 0.7–2.2) per 100 000 population, closely followed by the Western Pacific Region at just under 1.2 (UI: 0.5–1.7) per 100 000 population. The greatest decline in CDR was achieved in the European Region, with a nearly two thirds drop between 2000 and 2021. Slight increases were seen in the Region of the Americas and the Western Pacific Region *(1)*.

Sex and age disparity were observed. Men were dying at a rate that was 68% higher than women. The greatest male-to-female ratios were observed in the Region of the Americas and the European Region at 2.3 and 2.6, respectively, whereas the lowest ratio was in the African Region at 1.4. The youngest and the oldest population were at the highest risk of dying from unintentional poisoning, with population under 5 years old and 65 years old and over accounting for less than 20% of the global population but nearly 40% of the global deaths from unintentional poisoning in 2021 *(1)*.

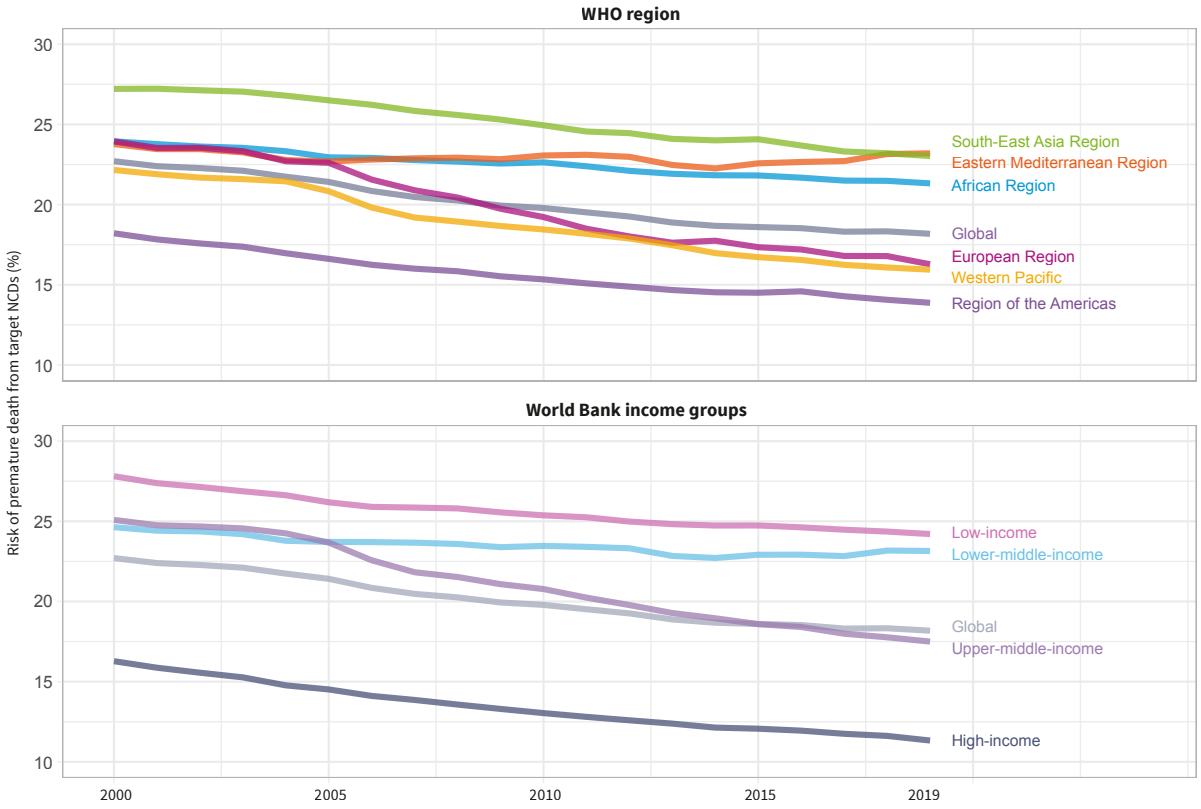
1.3.3 Mortality due to NCDs

Improved prevention, diagnosis and treatments has led to steady decline in premature mortality from NCDs. Globally, a person aged 30 years in 2000 had a 22.7% (UI: 18.7–27.2%) chance of dying from one of the four major NCDs (cardiovascular disease, cancer, chronic respiratory disease and diabetes) before the age of 70 years (SDG indicator 3.4.1). This risk fell to 18.2% (UI: 14.2–23.0%) in 2019 before the onset of the pandemic, corresponding to an approximately 20% reduction *(1)*.

Regional disparity exists in both the levels and pace of progress. The Eastern Mediterranean Region started with the highest risk of premature mortality (27.2% [UI: 19.4–36.4%]) in 2000 and, notwithstanding a 15.4% reduction, the risk in 2019 (23.0% [UI: 15.9–31.5%]) remained high compared with other regions except for the South-East Asia Region, where the progress stagnated in 2000–2019. In contrast, the Region of the Americas had the lowest risk of NCD premature mortality (18.2% [UI: 16.6–19.9%]) in 2000 among all regions and stayed at the lowest level (13.9% [UI: 12.3–15.7%]) in 2019, with a 23.8% reduction between 2000 and 2019. The other three regions started at similar levels (22.2–23.9%) in 2000; however, the African Region saw more moderate decline (10.9%) and reached a premature mortality risk of 21.3% (UI: 13.5–31.3%) in 2019, whereas the fastest declines among all regions were observed in the European and Western Pacific regions (32.0% and 28.0% decline, respectively) (Fig. 1.13) *(1)*.

Despite the progress made, the pace of change in most countries has slowed since the beginning of the SDG era in 2015. With the global ARR slowing significantly (more than halved compared with the first 15 years of the century) between 2015 and 2019 to under 1%, the world is not on track to reach the 2030 SDG target. The only region where some acceleration was seen was the Eastern Mediterranean Region, yet the accelerated ARR was still less than half of that required to meet the SDG target. The region of most concern in meeting the target is South-East Asia Region, where the previous overall slow but still declining trend in 2000–2015 has reversed, with an increase in premature NCD mortality in 2015–2019. The other regions all underwent major declines in ARR, ranging from a 8% reduction in the African Region to over a third reduction in the Western Pacific Region *(1)*.

Figure 1.13 Trends in the probability of dying between ages 30 and 69 years from one of the four major NCDs, globally, by WHO region and by World Bank income group, 2000–2019



Source: WHO *(1)*.

About 60 countries with good vital registration data that are available for 2020 and/or 2021 present a mixed picture of NCD premature mortality during the pandemic.[2] Some countries saw further slowdown of reduction or even increasing NCD mortality during the pandemic as a result of disruptions to NCD services, while other countries observed accelerated decline in NCD premature mortality. The latter may well be an artefact, as patients with NCDs are also at greater danger of dying prematurely from COVID-19 as a competing risk (and so recorded as COVID-19 deaths). There are still many unknowns around the progress in NCD premature mortality during the COVID-19 pandemic that can only be answered with more and better cause of death data to document the trends during and after the pandemic.

[2] Trajectories of NCD mortality after the onset of the COVID-19 pandemic are still being understood. In countries that have low-quality vital registration, WHO's current estimates include a cause of death category, "other pandemic-related mortality", that likely includes NCD mortality. Future work will explore how NCD mortality changed in these countries in 2020–2021 *(1)*.

1.3.4 Mortality attributable to environmental risk factors

Millions of deaths annually can be attributed to environmental factors, such as air pollution and unsafe drinking-water, sanitation and hygiene (WASH).

Mortality attributed to air pollution

Exposure to air pollution increases the risk for many negative health outcomes. Five health conditions – stroke, ischaemic heart disease, lung cancer and chronic obstructive pulmonary disease in adults, and acute lower respiratory infections at all ages – are included in the estimation of SDG indicator 3.9.1 on mortality attributed to air pollution.

Household and ambient air pollution are estimated to have jointly caused 6.7 million deaths worldwide in 2019, corresponding to 4.2 million attributable to ambient air pollution and 3.2 million to household air pollution. The global age-standardized mortality rate attributable to air pollution in 2019 was 104 (UI: 81–130) deaths per 100 000 population, a slight decline from 133 (UI: 106–162) deaths per 100 000 population in 2010. The African, Eastern Mediterranean and South-East Asia regions had the highest age-standardized mortality rates attributable to air pollution among WHO regions in 2019 *(8)*.

The causes of the observed differences in air pollution-attributable mortality rates between regions and countries are diverse. First, they are due to the different (population-weighted) ambient and household particulate matter concentrations, but the different population distribution by age and underlying mortality patterns by cause also play a role.

Mortality attributed to unsafe WASH

Unsafe WASH can lead to undesired health outcomes, including deaths. SDG indicator 3.9.2 is defined as mortality rate attributed to unsafe WASH, and considers four health conditions in the estimation, namely diarrhoea, acute respiratory infections, undernutrition and soil-transmitted helminthiases. The latest estimate suggests that globally in 2019, safe WASH could have prevented 1.4 million (UI: 1.3–1.5 million) deaths. An estimated 395 000 of these deaths were among children under 5 years of age *(9)*.

The global WASH-attributable mortality rate in 2019 was 18.3 deaths per 100 000 population, ranging from 3.7 deaths per 100 000 population in high-income countries up to 41.7 deaths per 100 000 population in low-income countries. Among WHO regions, the highest mortality rates in 2019 were in the African Region (46.7 deaths per 100 000 population) and the South-East Asia Region (29.6 deaths per 100 000 population) *(9)*.

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2. Health-related SDGs

The *World health statistics* 2023 revealed that not only have many advances attained in the MDG era (2000–2015) stalled since 2015, but the COVID-19 pandemic has further hampered improvements since 2020 *(1)*. This chapter presents the latest available evidence of trends in health-related SDG and WHO GPW13 indicators, assessing progress towards achieving the global targets. The topics covered in this chapter include infectious diseases, risk factors for health, and health systems as a key to UHC. SDG indicators related to mortality are discussed in Chapter 1.

2.1 Infectious diseases

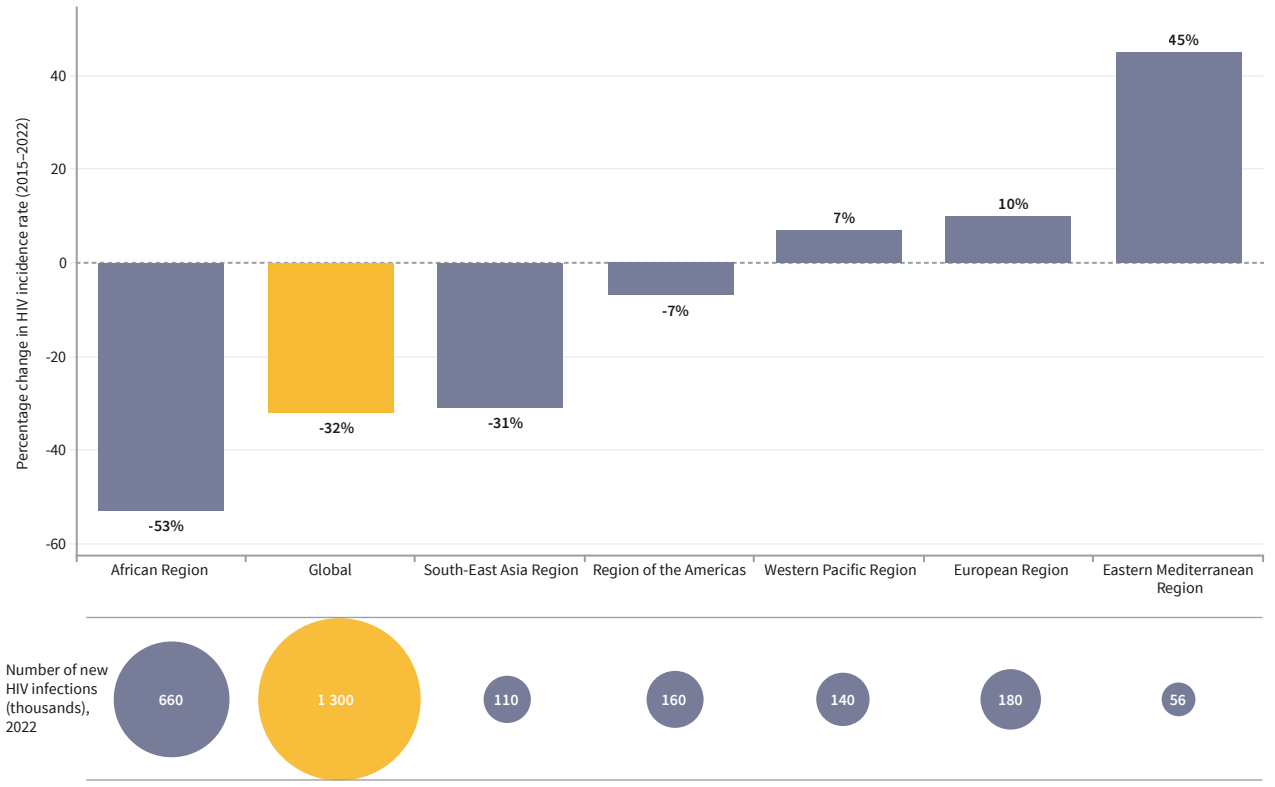
SDG target 3.3 advocates to end the epidemics of HIV/AIDS, tuberculosis (TB), malaria and neglected tropical diseases (NTDs), and to combat hepatitis, waterborne diseases and other communicable diseases. This section describes the status of progress in the related SDG indicators along with that in combating polio and antimicrobial resistance (AMR).

2.1.1 HIV

At the end of 2022, there were an estimated 39.0 million (UI: 33.1–45.7 million) people living with HIV globally, of which 37.5 million (UI: 31.8–43.6 million) were aged 15 years or older and 1.5 million (UI: 1.2–2.1 million) were children aged under 15 years *(2)*.

In 2022, there were 1.3 million (UI: 1.0–1.7 million) new HIV infections globally. This represents a 54% reduction from 2.8 million (UI: 2.2–3.8 million) in 2000, and 27% from 1.8 million (UI: 1.4–2.4 million) in 2015. The global HIV incidence rate (number of new HIV infections per 1000 uninfected population, SDG indicator 3.3.1) was 0.17 (UI: 0.13–0.23) in 2022, a 32% reduction from 0.25 (UI: 0.19–0.33) in 2015. However, progress varied across regions. The Eastern Mediterranean Region has seen a 45% increase in HIV incidence rate since 2015, although it still had the lowest number of new infections across WHO regions in 2022. HIV incidence rate declined by 31% during the same period in the South-East Asia Region, where both incidence rate and number are among the lowest. Despite impressive progress in reducing incidence, the African Region continued to bear the heaviest HIV burden (Fig. 2.1) *(2, 3)*.[1]

Figure 2.1 Percentage change in the number of new HIV infections per 1000 uninfected population,[a] 2015–2022, and number of new HIV infections, 2022, globally and by WHO region



[a] Percentage change in HIV incidence rate was calculated from unrounded incidence rates.

Source: Joint United Nations Programme on HIV/AIDS *(2, 3)*.

[1] Percentage change in HIV incidence rate was calculated from unrounded incidence rates.

Global initiatives call for curbing the number of new HIV infections to 370 000 in 2025 and 335 000 in 2030, equivalent to HIV incidence rates of 0.05 in 2025 and 0.025 in 2030 *(4, 5)*. The latest estimates suggest that while the world is moving in the right direction, it is still far from reaching these targets.

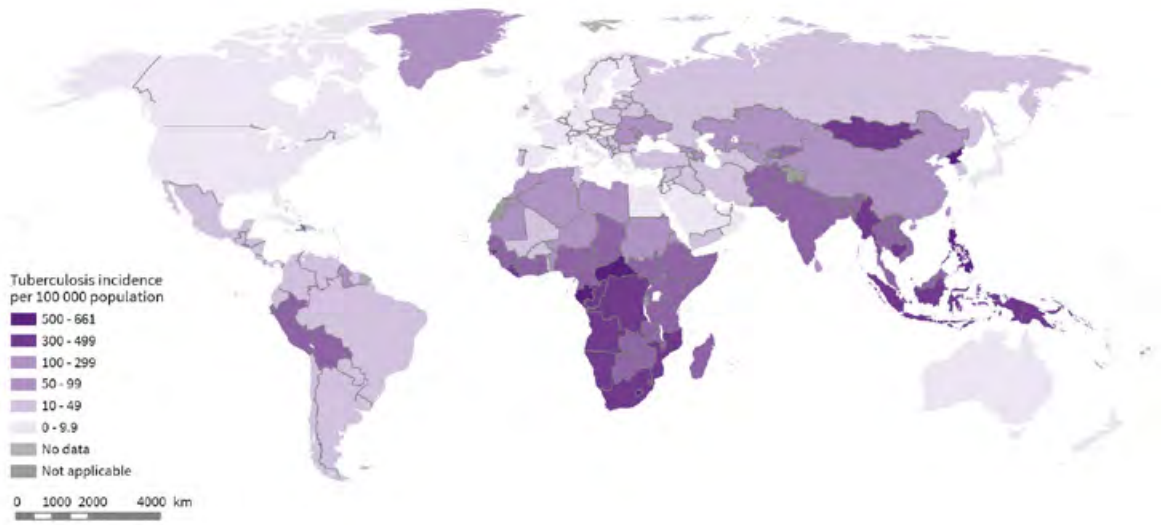
2.1.2 TB

An estimated 10.6 million (UI: 9.9–11.4 million) people developed TB globally in 2022, of which 55% were men, 33% were women and 12% were children under 15 years of age. The global TB incidence rate (SDG indicator 3.3.2) was 133 (UI: 124–143) per 100 000 population in 2022, down from 180 (UI: 134–233) per 100 000 population in 2000 and 146 (UI: 133–160) per 100 000 population in 2015. Figure 2.2 shows that TB incidence rates varied enormously across countries and areas in 2022 *(6)*.

The WHO End TB strategy calls for a 50% reduction of TB incidence rate by 2025 relative to the 2015 baseline, as a milestone towards the SDG 2030 and End TB 2035 targets *(7)*. While TB incidence rate had continuously declined for many years up to 2020, two consecutive years of global increases in TB incidence (in 2021 and 2022) led to the TB incidence rate in 2022 reverting to the level of 2019. Globally, the net relative reduction in the TB incidence rate from 2015 to 2022 was 8.7%, falling far behind the WHO *End TB strategy* milestone *(6)*.

Nevertheless, there were encouraging signs of progress. The global trends in the number of people diagnosed with TB and treated showed a major recovery in 2022, after a sharp drop in 2020 due to the disruptions related to the COVID-19 pandemic (see section 2.3.1).

Figure 2.2 TB incidence rate by country and area, 2022



Source: WHO *(6)*.

2.1.3 Malaria

In 2022, there were an estimated 249 million (UI: 225–278 million) malaria cases in 85 endemic countries and areas, leading to an estimated 631 000 (UI: 587 000–747 000) deaths *(8)*.

The *Global technical strategy for malaria 2016–2030* (GTS) calls for a reduction in malaria case incidence by at least 40% by 2020, 75% by 2025 and 90% by 2030 from a 2015 baseline, among other milestones and targets *(9)*. The global malaria incidence rate (malaria cases per 1000 population at risk, SDG indicator 3.3.3) was 59.8 (UI: 54.8–65.7) in 2015, having declined by 26% from 81.0 (UI: 75.7–87.7) in 2000. The incidence rate continued to fall until 2019, before rising by 3% in 2020 and remaining stable since. In 2022, the incidence rate was 58.4 (UI: 52.9–65.3); the expected rate was 26.2 if it was on trajectory to reach GTS targets. If the current trends continue, it is unlikely that the GTS incidence targets will be achieved) *(8)*.

The WHO African Region continues to bear the heaviest burden of malaria. In 2022, the region accounted for 94% of global malaria cases and 95% of global malaria deaths. Children under the age of five are particularly vulnerable; in 2022, almost four in every five malaria deaths in the region were among these young children *(8)*.

WHO recently added the programmatic use of malaria vaccines for children living in endemic areas to the malaria prevention toolbox. The first malaria vaccine, RTS,S/AS01 (RTS,S), was recommended by WHO in 2021 after successful pilot programmes in Ghana, Kenya and Malawi through the Malaria Vaccine Implementation Programme (Box 2.1). In 2023, WHO recommended a second safe and effective malaria vaccine, R21-Matrix-M (R21) *(10)*. Wide implementation of malaria vaccines is expected to save tens of thousands of lives each year.

Box 2.1 Malaria vaccine implementation in Ghana, Kenya and Malawi

The Malaria Vaccine Implementation Programme (MVIP) was established by WHO to evaluate the public health use of the first malaria vaccine, RTS,S/AS01 *(10)*. Findings from the pilot programme informed the historic WHO recommendation in October 2021 for a vaccine to prevent malaria in children.

Through the collaborative effort with the ministries of health in Ghana, Kenya and Malawi from 2019 to 2023, the RTS,S malaria vaccine was integrated into routine child immunization services as part of each country's national malaria control programme. Over 2 million children received the RTS,S malaria vaccine through the pilot. Findings from MVIP show that the RTS,S vaccine substantially reduces early childhood deaths and hospitalizations for severe malaria.

In October 2023, WHO recommended a second safe and effective malaria vaccine, R21, for routine use. This recommendation, resulting in sufficient vaccine supply to scale up malaria vaccines broadly, coupled with the high impact seen with the introduction of the RTS,S vaccine, underscores the potential of malaria vaccines as important interventions to act against *Plasmodium falciparum*, the deadliest malaria parasite globally and the most prevalent in Africa, and further supports the case for implementing the malaria vaccine as a routine child immunization.

The wide-scale implementation of the malaria vaccines, which began in early 2024, holds the potential to save tens of thousands of lives each year. This is not just a scientific breakthrough but a life-saving intervention that can significantly reduce the burden of malaria on our communities.

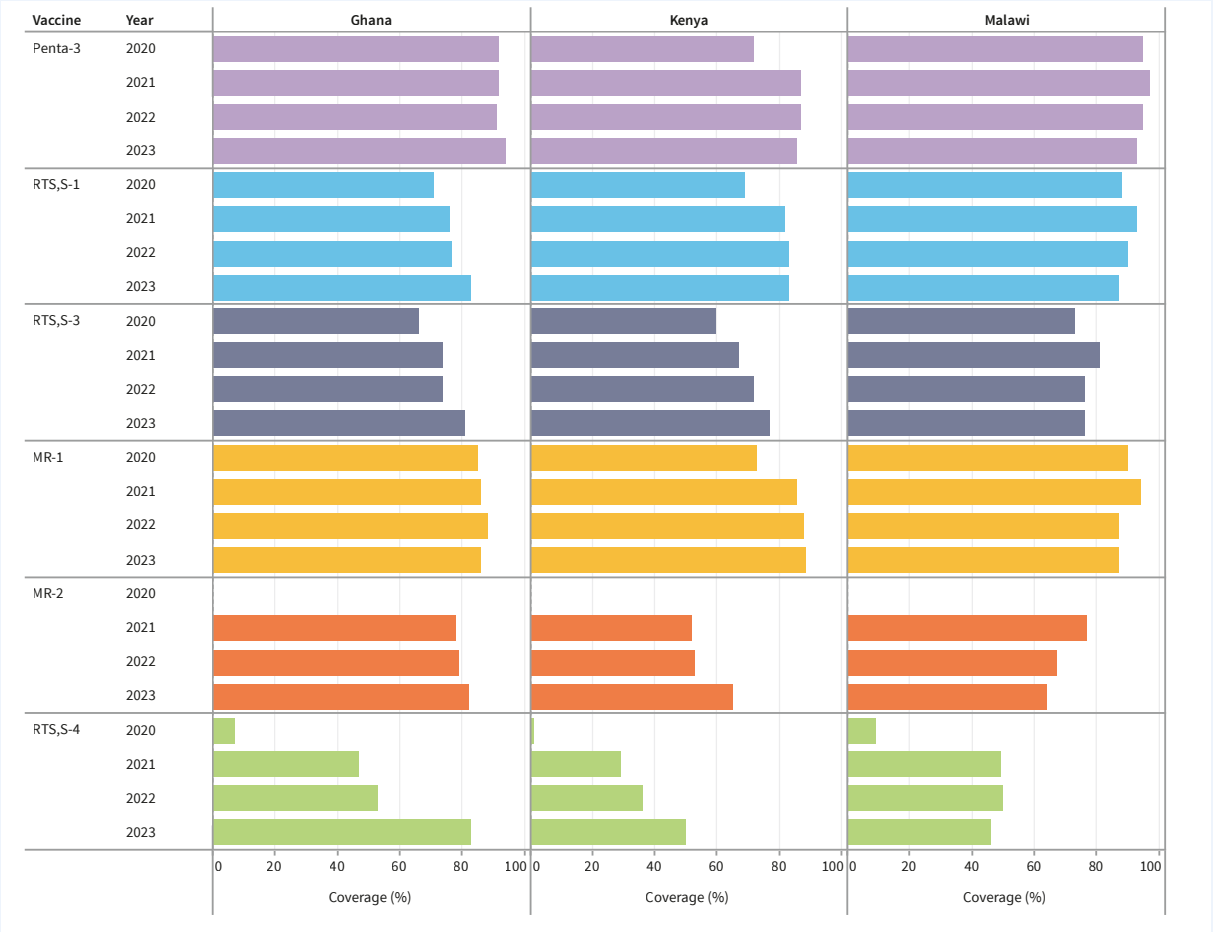
Key findings: substantial public health impact *(11)*

Disease surveillance during 46 months of RTS,S vaccine use and scale-up, as part of the MVIP, showed that malaria vaccine introduction resulted in a 13% vaccine-attributable reduction in all-cause mortality (excluding injury) among children age-eligible for vaccination compared with children living in areas where the vaccine was not in use. Substantial reductions in severe malaria and malaria hospitalizations of children were also documented. Measured impact was additional to the benefits from insecticide-treated mosquito net (ITN) use and access to other child health interventions and care.

These findings were measured in the context of vaccine scale-up, with an average third-dose coverage of about 68% and average fourth-dose coverage of about 40% across the three countries. The substantial public health impact of malaria vaccine is expected to increase as vaccine coverage increases.

Figure 2.3 shows the coverage of immunization with malaria and other vaccines in the MVIP areas in the three countries from 2020 to 2023.

Figure 2.3 Coverage of immunization with RTS,S vaccine (first, third and fourth dose), pentavalent vaccine (third dose) and measles–rubella vaccine (first and second dose) in the MVIP areas in Ghana, Kenya and Malawi, 2020–2023



Source: Administrative data, Essential Programme on Immunization, ministries of health of Ghana, Kenya and Malawi.

Other findings

- Malaria vaccine uptake is high, with no unintended consequences, such as reduction in ITN use, uptake of other childhood vaccines or change in health-seeking behaviour.
- Quantitative analysis shows that parents understand that malaria vaccine reduces malaria but does not prevent all cases of malaria, and continue to use other preventive and care-seeking measures .
- Community demand for and health worker acceptance of malaria vaccine is high.
- The malaria vaccine has a good safety profile – with more than 6 million doses provided.
- In the three pilot countries, malaria vaccine even reached children who were not using other forms of malaria prevention, thereby extending the programmatic reach of malaria prevention interventions.

The MVIP further established that a moderately efficacious malaria vaccine can have high effectiveness and impact and will be accepted by communities and health workers.

The MVIP also provided critical information to inform the recently updated WHO recommendation for malaria vaccines that applies to both RTS,S and R21 vaccines, and forged a pathway for future malaria vaccine development.

Next steps

The high demand for malaria vaccines is unprecedented. More than 20 countries have been approved for malaria vaccine introduction support by Gavi, the Vaccine Alliance, and wider implementation began in 2024.

As of 25 April 2024, eight countries in Africa offer the malaria vaccine as part of their childhood immunization programmes (Benin, Burkina Faso, Cameroon, Ghana, Kenya, Liberia, Malawi and Sierra Leone) and up to 10 additional countries are likely to introduce it this year. Implementing malaria vaccines in Africa represents an important step in the fight against the disease. At least 30 countries in Africa are interested in deploying malaria vaccines as part of their national malaria control plans.

Moreover, the ministers of health of 11 African countries representing the High Burden High Impact (HBHI) countries in Africa, met in Yaoundé, Cameroon, on 6 March 2024, and declared their unwavering commitment to the accelerated reduction of malaria mortality and pledged to hold each other and countries accountable for the commitments outlined in the Declaration for accelerated malaria mortality reduction in Africa: commitment that "No one shall die from malaria".

2.1.4 Hepatitis

Globally, an estimated 304 million people were living with chronic hepatitis B and C in 2022, of whom 254 million were living with hepatitis B and 50 million with hepatitis C. The estimated number of people newly infected by viral hepatitis B and C declined from 2.5 million in 2019 to 2.2 million in 2022 *(12)*. While this decline is encouraging, it is still far from the 2030 targets of 170 000 new hepatitis B infections and 350 000 new hepatitis C infections *(5)*. Of the 2.2 million new infections in 2022, more than 1.2 million (UI: 0.8–1.5 million) were hepatitis B and nearly 1.0 million (UI: 0.8–1.3 million) hepatitis C *(12)*.

The African Region saw an estimated 771 000 new hepatitis B infections in 2022, representing 63% of the global incidence (Fig. 2.4) *(12)*. It also had the highest hepatitis B surface antigen (HBsAg) prevalence among children under five years (SDG indicator 3.3.4)[2] in 2020, at 2.53% (UI: 2.10–3.07%), more than double the global prevalence of 0.94% (UI: 0.82–1.06%) *(13)*.

In 2022, the South-East Asia and the Eastern Mediterranean regions had the highest number of new hepatitis C infections, with 225 000 and 183 000 cases, respectively (Fig. 2.4). The Eastern Mediterranean Region also had the highest total chronic hepatitis C infections at 11.7 million, 23% of the global total in 2022 *(12)*. There is, however, promising momentum in the region, as Egypt became the first country to achieve the "gold tier" status on the path to eliminating hepatitis C infection (Box 2.2).

2.1.5 NTDs

Thirteen of the 21 diseases or groups of disease recognized by WHO as NTDs are targeted for eradication, elimination of transmission or elimination as a public health problem, and 50 countries have eliminated at least one NTD. Bangladesh, for example, has recently eliminated lymphatic filariasis and visceral leishmaniasis as a public health problem (Box 2.3). This is an encouraging sign that NTDs can be defeated by combining diverse interventions including mass and individual treatment, vector control, veterinary public health, and provision of safe water and sanitation.

The NTD roadmap 2021–2030 calls for a 90% reduction of the global population requiring NTD interventions between 2010 and 2030 *(16)*. Between 2010 and 2022, the reported number of people requiring mass or individual treatment and care for NTDs declined by 26% from 2.19 billion to 1.62 billion – progress in the right direction but not sufficient to reach the 2030 target without substantial acceleration (Fig. 2.5). In recent years, the world has faced multiple challenges in the fight against NTDs, including a slow recovery of NTD programmes after the massive service disruption at the start of the COVID-19 pandemic, an uncertain financial situation and the ever-increasing threat of climate change, which is likely to result in increased distribution of many NTDs *(17)*.

[2] The SDG framework currently uses "Hepatitis B surface antigen (HBsAg) prevalence among children under 5 years" as a proxy for the official indicator 3.3.4 (Hepatitis B incidence per 100 000 population), reflecting the high burden of Hepatitis B in this age group.

Figure 2.4 Number of new hepatitis B and hepatitis C infections, by WHO region, 2022

Source: WHO *(12)*.

Box 2.2 Egypt becomes the first country to achieve the "gold tier" status on the path to elimination of hepatitis C

In 2023, Egypt became the first country to achieve gold tier status on the path to eliminating hepatitis C in accordance with WHO criteria. This means that Egypt has fulfilled WHO's targets that will set the country up to achieve the reduced incidence and mortality targets of full elimination before 2030. Egypt has implemented one of the world's largest nationwide public health screening and treatment programmes for hepatitis C.

Egypt had one of the highest rates of viral hepatitis in the world. Between the 1950s and 1980s, inadvertent infection transmission associated with unsafe injection practices occurred in the attempt to control schistosomiasis, a parasitic disease carried by water snails.

Since the early 1990s, the government has put a huge effort into strengthening hepatitis prevention, with programmes covering blood safety, infection control and injection safety. It also worked on raising public awareness and running harm reduction programmes.

Egypt launched a network of specialized treatment centres in 2006 and, with the new antiviral medicines discovered in 2014, hepatitis testing and treatment were made accessible and free of charge for everyone.

In 2018, the government launched the presidential initiative "100 million seha" (100 million healthy lives), a massive and unprecedented nationwide campaign to detect and treat everyone with hepatitis C, escalating its elimination efforts.

Through the campaign, everyone over 18 was tested, later expanding to children 12 years and older. In addition to routine testing at all health facilities, the campaign used outreach in the community, with teams visiting big squares, markets, workplaces, sports clubs, mosques and churches, and popular meeting places such as barbershops. Vulnerable communities such as refugees and migrants, and persons with disabilities were also included, to leave no one behind.

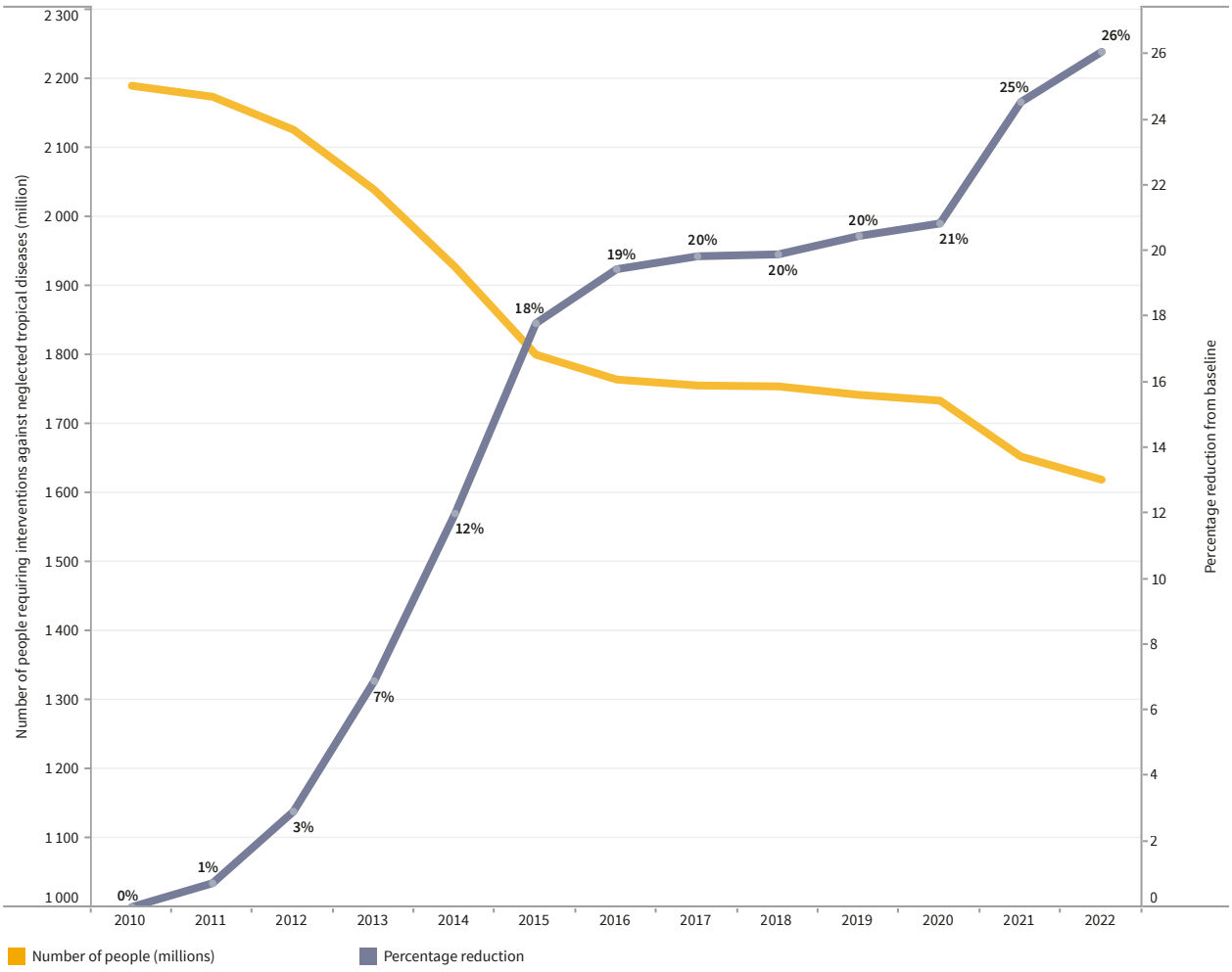
Between 2018 and 2022, over 60 million people were tested with WHO-approved rapid diagnostic tests. Patients were also assessed and treated for other chronic diseases, such as hypertension and diabetes. A total of 4.1 million received treatment for hepatitis C with locally manufactured medicines between 2014 and 2022, of which 98% were virally suppressed.

Expanding direct public health approaches to community prevention, testing and treatment, as shown by Egypt's successful public health programme to eliminate hepatitis C, can have a population-wide impact.

A case study concluded that five key elements contributed to Egypt's successful programme: the availability of sufficient and reliable epidemiological data; a robust public health care infrastructure; inclusive care that reached all sectors of society; political commitment with increased health-care spending and a comprehensive long-term strategy for viral hepatitis; and use of innovation and information technology *(14)*.

Source: WHO *(15)*.

Figure 2.5 **Global trend in the reported number of people requiring mass or individual treatment and care for NTDs, and its relative reduction, 2010–2022**



Source: WHO *(17)*.

Box 2.3 Bangladesh eliminates visceral leishmaniasis and lymphatic filariasis as a public health problem

In 2023, Bangladesh became the first country globally to be validated for elimination of visceral leishmaniasis, also called *kala azar*, as a public health problem. The country achieved the elimination target of less than one case per 10 000 population at the sub-district (*upazila*) level in 2017 and has sustained it to date despite disruptions related to the COVID-19 pandemic.

In 2005, Bangladesh, together with India and Nepal, launched a Regional Kala-azar Elimination Initiative with the aim of wiping out the disease. The Government of Bangladesh, WHO, the Special Programme for Research and Training in Tropical Diseases (TDR) and several other partners supported research and development of new diagnostic tools, effective treatments and vector control (especially indoor residual spraying), and facilitated their roll-out and access by all those in need through donation programmes, which helped the country meet the criteria set by WHO for elimination as a public health problem *(18)*.

Kala azar is the most severe form of leishmaniasis and is transmitted by sandflies; it is commonly prevalent among the most disadvantaged rural communities. The disease leads to symptoms such as fever, weight loss, and spleen and liver enlargement and, if left untreated, can prove fatal in over 95% of cases.

In 2023, Bangladesh was also validated as the fourth country in the WHO South-East Asia Region to eliminate lymphatic filariasis as a public health problem, after Maldives, Sri Lanka and Thailand.

Lymphatic filariasis, also known as elephantiasis, occurs when filarial parasites are transmitted to humans through mosquito bites. The infection is usually acquired in childhood with painful and disfiguring visible manifestations appearing much later in life, often in the form of enlargement of body parts, causing pain, severe disability and associated stigma.

Lymphatic filariasis was a major public health problem in Bangladesh and was endemic in 19 of its 64 districts. In 2001, the country established a national elimination programme. Between 2001 and 2015, high-coverage mass drug administration campaigns were carried out in all endemic districts. A series of transmission assessment surveys was carried out by programme personnel between 2011 and 2021, which demonstrated that transmission levels were below the threshold established by WHO for elimination as a public health problem.

To meet WHO's validation criteria on morbidity management and disability prevention *(19)*, Bangladesh also strengthened access to the recommended essential package of care in all endemic districts. Notably, over 31 000 people affected by lymphatic filariasis have been trained in self-care and provided with kits to manage their disease condition and improve their quality of life.

For both *kala azar* and lymphatic filariasis, Bangladesh will now focus on post-validation surveillance to sustain its hard-won status and prevent recurrence of infection.

Source: WHO *(20, 21)*.

2.1.6 Polio

Poliomyelitis (polio) is a highly infectious viral disease. It primarily affects children under 5 years of age, but an unvaccinated person at any age can contract the disease. Of the three strains of wild poliovirus (type 1, type 2 and type 3), wild poliovirus type 2 was eradicated in 1999 and wild poliovirus type 3 was eradicated in 2020. As at 2022, endemic wild poliovirus type 1 remains in two countries, Afghanistan and Pakistan.

In 2023, a total of 12 cases of wild poliovirus were reported in Afghanistan and Pakistan and, unlike in previous years, no cases were reported from non-endemic countries *(22)*.

Although immunization coverage, including polio, began to recover from the impact of the COVID-19 pandemic during 2022, progress is uneven. There were 14.3 million children missing out on any vaccination – the so-called "zero-dose children" – worldwide in 2022. Afghanistan and Pakistan were among the top 15 countries with the highest number of zero-dose children in 2022, highlighting the need for continued, intensified efforts to reach all remaining un- or under-immunized children in those endemic areas *(23)*.

2.1.7 Antimicrobial resistance

AMR affects countries in all regions and at all income levels. It is a complex problem that requires both sector-specific actions in the human health, food production, animal and environmental sectors, and a coordinated approach across these sectors. In 2015, the World Health Assembly adopted the Global Action Plan on AMR, committing, among other things, to the development and implementation of multisectoral national action plans *(24)*. As of November 2023, some 178 countries had such plans developed. However, in 2023 only 27% of countries reported implementing their national action plans effectively and only 11% had allocated national budgets to do so *(25)*.

SDG indicator 3.d.2 is defined as the percentage of bloodstream infections due to selected antimicrobial-resistant organisms. Median resistance to third-generation cephalosporins in *Escherichia coli (E. coli)* and methicillin resistance in *Staphylococcus aureus (S. aureus)* were 41% and 32% in 2021, respectively, compared with 26.9% and 13.4% in 2016. However, no conclusions can be made on whether changes in resistance have occurred over time. The reasons for this are twofold: first, the pool of reporting countries has changed significantly over the years. In 2016, only 16 countries contributed data on resistance to third-generation cephalosporins in *E. coli,* compared with 77 in 2021. Similarly, only 15 countries provided data in 2016 on methicillin resistance in *S. aureus* in 2016, compared with 78 in 2021. Second, the number of resource-limited settings providing data has increased in recent years. Testing coverage in these settings is often low, with data often limited to tertiary referral, private hospitals and/or research facilities, and biased towards complex infections and treatment failures. Higher median resistance in recent years is at least in part consistent with potential biases resulting from the convenience sampling of health facilities for reporting AMR data in many settings *(26)*.

Priorities to address AMR include surveillance of antimicrobial consumption. The Global Antimicrobial Resistance and Use Surveillance System (GLASS) provides a common and standardized set of methods for measuring and reporting. Of the 57 countries with data (2018–2021), 36 (63%) achieved the target of at least 60% of total antibiotic consumption being "Access" group antibiotics *(26)*. The overall goal is to reduce the use of "Watch and reserve" group antibiotics and to increase the relative benefit and the availability of Access group antibiotics, where needed.

2.2 Risk factors for health

Many factors affect the health of individuals and communities. A risk factor for health is any attribute, characteristic or exposure of an individual that increases their likelihood of developing a disease or injury. This section presents progress towards achieving SDG and GPW13 targets related to several risk factors for health.

2.2.1 Nutritional risk factors

Better nutrition is related to improved infant, child and maternal health, stronger immune systems, lower risk of NCDs, and longevity. Today, the world faces the multiple burden of malnutrition that comprises undernutrition, overweight (including obesity) and micronutrient deficiencies. Section 4.1 discusses the global trends in undernutrition and overweight or obesity. This section summarizes the global progress towards the reduction of anaemia among women and the consumption of trans-fatty acids (TFA).

Anaemia among women

Women with anaemia are more likely to experience fatigue and impaired physical capacity in their daily lives. Moderate and severe anaemia are also risk factors for adverse maternal and perinatal outcomes.

Global trends in the prevalence of anaemia among all women 15–49 years of age (SDG indicator 2.2.3) show no significant change from 31.2% (UI: 28.7–34.1) in 2000 to 29.9% (UI: 27.0–32.8) in 2019. With population growth, the total number of women aged 15–49 years affected increased from 493 million in 2000 to 571 million in 2019. While there was a slight decrease in anaemia prevalence among pregnant women from 40.9% (UI: 38.7–43.1) in 2000 to 36.5% (UI: 34.0–39.1) in 2019, prevalence among non-pregnant women remained stagnant, at 30.7% (UI: 28.1–33.7) in 2000 and 29.6% (UI: 26.6–32.5) in 2019 *(27)*. Across WHO regions, the decline in anaemia prevalence among women observed during the MDG era either halted or slowed after 2015. This latest evidence suggests that the global target of 50% reduction of anaemia in women of reproductive age by 2025 (from a 2012 baseline) is unlikely to be met *(27, 28)*.

Trans-fatty acids

Intake of TFA is associated with increased risk of heart attacks and death from coronary heart disease. WHO designated TFA elimination as one of its priority targets in 2018, calling for the global elimination of industrially produced TFA by 2023.

Mandatory TFA policies are currently in effect in 69 countries in all WHO regions, covering 55% of the global population (4.4 billion people). Of these countries, 53 have "best-practice" policies, which include mandatory national limit of 2 g of industrially produced TFA per 100 g of total fat in all foods and mandatory national ban on the production or use of partially hydrogenated oils as an ingredient in all foods. Population coverage by best-practice TFA policies has grown considerably. In 2018, best-practice policies were in effect for just 6% of the global population (480 million people). By the end of 2023, this has increased to 46% coverage (3.7 billion people) *(29)*. However, accelerated actions are needed to meet the target of 100% global population coverage *(30)*.

2.2.2 Behavioural risk factors

Modifiable behaviours such as tobacco use, alcohol consumption, physical inactivity and an unhealthy diet are among the known risk factors associated with NCDs. This section summarizes the global progress towards the reduction of tobacco use and alcohol consumption.

Tobacco use

The *Global action plan for the prevention and control of NCDs 2013–2020*, which has been extended until 2030, includes a target for reducing the global prevalence of tobacco use by 30% by the year 2025, relative to 2010 *(31, 32)*.

In 2022, the global age-standardized prevalence of current tobacco use among persons aged 15 years and older (SDG indicator 3.a.1) was estimated at 20.9% (UI: 18.8–22.9), a 21% relative decline from 26.4% in 2010. If current trends continue, the world will see a 25% relative reduction in prevalence by 2025. While this is short of the 30% reduction target, progress is encouraging as tobacco use has been declining in all WHO regions. The South-East Asia Region, having consistently the highest prevalence since 2000, is projected to achieve a 34% reduction by 2025 relative to 2010. The African Region is expected to reach a 32% relative reduction by 2025 and remain the region with the lowest prevalence. The European Region, in contrast, is projected to have the highest prevalence across all WHO regions in 2030 at 23.1% *(33)*. Owing to its long history of tobacco control, the

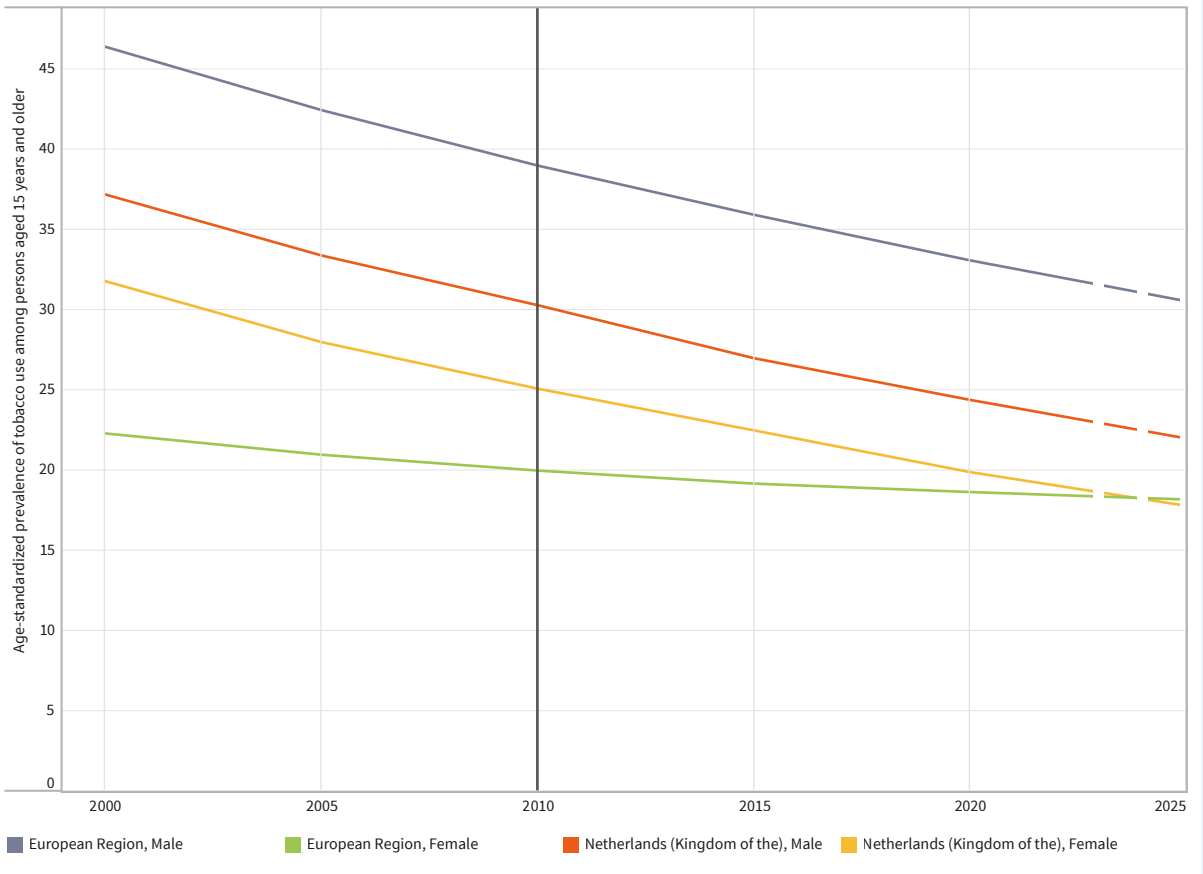
Netherlands (Kingdom of the) is among the countries to have experienced a decline in tobacco use faster than the European regional average, and one of only four countries worldwide to have attained best-practice level adoption of all MPOWER measures[3] (Box 2.4) *(33, 34)*.

Tobacco use prevalence differs markedly by sex. While the prevalence among both men and women has decreased since 2000, it has remained much higher among men than women in 2022, both globally and in all six WHO regions *(33)*.

Box 2.4 Tobacco control in the Netherlands (Kingdom of the)

The estimated age-standardized prevalence of tobacco use among persons aged 15 years and older in the Netherlands (Kingdom of the) declined from 34.5% (UI: 27.7–41.2) in 2000 to 27.7% (UI: 23.3–32.2) in 2010 and 21.3% (UI: 17.1–25.5) in 2022. If current trends continue, the prevalence is projected to reduce further to around 19.9% (UI: 15.8–24.1) in 2025 *(33)*. This would represent a 28% relative reduction over the period 2010–2025, close to the 30% voluntary reduction target under the *Global action plan for the prevention and control of NCDs (31)*. On average, prevalence in the WHO European Region is projected to reduce more slowly, by 17% over the same period. The prevalence among both men and women in the Netherlands (Kingdom of the) has been declining at a faster pace than the European Region averages; the prevalence among women in the Netherlands (Kingdom of the) has been declining remarkably faster than the European Region average (Fig. 2.6) *(33)*.

Figure 2.6 Age-standardized prevalence of tobacco use among persons aged 15 years and older, by sex, Netherlands (Kingdom of the) and the European Region, 2000–2025



Source: WHO *(33)*.

Dotted lines = projection; solid vertical line at 2010 indicates baseline date for comparison.

[3] MPOWER is WHO's technical package that assists countries to implement the evidence-based demand-reduction measures of the WHO Framework Convention on Tobacco Control.

The Netherlands (Kingdom of the) has a long history of tobacco control dating back to the 1950s. In more recent times, some examples of measures adopted in line with the WHO Framework Convention on Tobacco Control include *(34)*:

2005: Netherlands (Kingdom of the) became a Party to the WHO Framework Convention on Tobacco Control.

2008: Extension of a smoking ban to the hospitality sector (with some exceptions).

2014: Rise in the legal age for purchase of tobacco from 16 to 18 years of age.

2016: Implementation of EU Tobacco Products Directive II, restricting the use of flavourings and dangerous additives, and adding pictorial health warnings on tobacco packs. Establishment of a new, toll-free national quit-smoking line.

2018: Signing of National Prevention Agreement (NPA) by the government and 70 organizations to address tobacco use (among other risk factors), with the aim that, by 2040, the country would have less than 5% of its population as smokers, and no children or pregnant women smoking.

2019: Adoption of the NPA by the House of Representatives. Amendment to the Tobacco Act to include a ban on the display of tobacco products at point of sale, except inside specialized tobacconists, with different steps and transitional periods until mid-2022.

2020: Netherlands (Kingdom of the) became a Party to the Protocol to Eliminate Illicit Trade in Tobacco Products. Implementation of plain packaging and a ban on tobacco vending machines.

2021: Closing of long-standing tobacco control gaps, such as banning advertising of tobacco products at points of sale and allowing no designated smoking rooms in public places, workplaces and public transport.

Over recent years, the Netherlands (Kingdom of the) has increased excise tax on tobacco products, which has led to real price increases over time (14% above inflation over the past 10 years). In 2022, total taxes represented close to 77% of the retail price of the most sold brand.

In the 2023 *WHO report on the global tobacco epidemic*, the Netherlands (Kingdom of the) is featured as one of only four countries in the world that have attained best-practice level adoption of all MPOWER measures – WHO's technical package that assists countries to implement the evidence-based demand-reduction measures of the WHO Framework Convention on Tobacco Control *(34)*.

Alcohol consumption

SDG indicator 3.5.2 is defined as total (recorded and unrecorded) alcohol per capita consumption (APC) per year, adjusted for tourist consumption, in persons aged 15 years and older, measured in litres of pure alcohol. Globally in 2019, the total APC stood at 5.5 litres (UI: 4.8–6.2), a 4.5% decline from 5.7 litres (UI: 5.1–6.4) in 2010 *(35)*. Comparing this pace of decline with the global targets of at least 10% reduction by 2025 and at least 20% by 2030, it is evident that acceleration is needed *(31, 36, 37)*. Moreover, the 2019 global APC was still higher than the 2000 level (5.1 litres, UI: 4.6–5.6) *(35)*.

Despite consistent reduction since 2000, including 9.8% reduction since 2010, the European Region continued to have the highest total APC. The South-East Asia Region is the only region where total APC has continuously increased, although the rise has considerably slowed since 2010. Total APC remained very low in the Eastern Mediterranean Region, with total APC of 0.3 litres (UI: 0.2–0.5) in 2019. As with tobacco use, globally alcohol consumption among men has been consistently higher than among women. Box 2.5 presents an analysis of sex-related inequalities in alcohol consumption globally and by WHO region *(35)*.

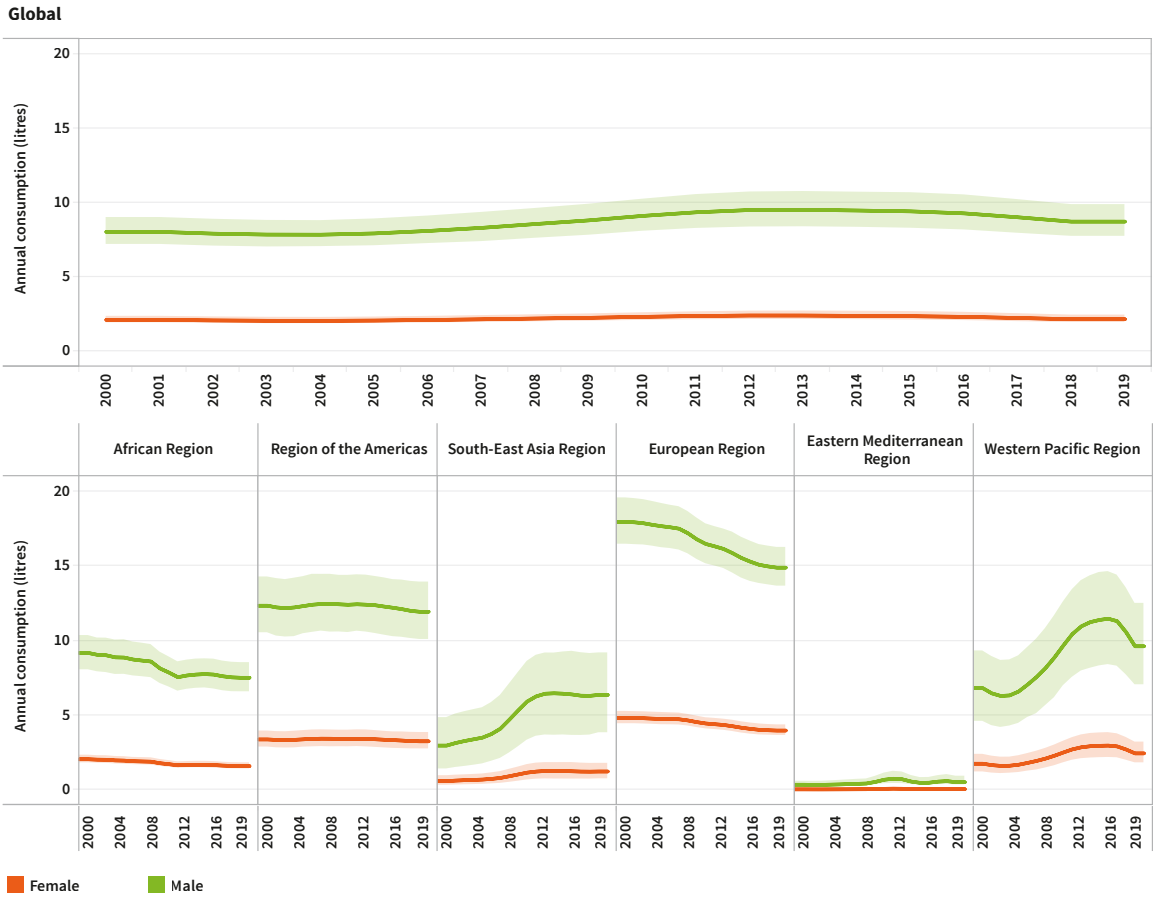
The COVID-19 pandemic had an apparent impact on alcohol consumption globally, although its magnitude and duration remain to be reliably defined. The preliminary global estimate for total APC in 2020 is 4.9 litres (UI: 4.3–5.6) *(38)*.

Box 2.5 Sex-related inequalities in the global and regional levels of alcohol consumption

Globally, there are sex-related inequalities in total APC among persons aged 15+ years, with higher alcohol consumption among men than women. In 2019, alcohol consumption among men was four times that among women. Between 2000 and 2019, alcohol consumption did not change substantially among men (from 8.0 litres of pure alcohol [UI: 7.2–9.0] in 2000 to 8.7 litres of pure alcohol [UI: 7.7–9.9] in 2019) and women (2.1 litres of pure alcohol [UI: 1.9–2.4] in 2000 and 2.2 litres of pure alcohol [UI: 2.0–2.5] in 2019).

The situation varied across WHO regions (Fig. 2.7). The largest absolute sex-related inequalities in 2019 were evident in the European Region (difference of 10.9 percentage points between men and women), followed by the Region of the Americas (difference 8.7 percentage points), the Western Pacific Region (difference 7.2 percentage points), the African Region (difference 5.9 percentage points) and the South-East Asia Region (difference 5.1 percentage points). Between 2000 and 2019, absolute sex-related inequality increased in the South-East Asia and Western Pacific regions due to a faster increase in alcohol consumption among men than women. Absolute sex-related inequality decreased in the African and European regions due to a faster decrease in alcohol consumption among men than women. Sex-related inequality did not change in the Region of the Americas (where inequality remained high) and the Eastern Mediterranean Region (where there was no inequality).

Figure 2.7 Total alcohol per capita consumption among persons aged 15+ years, by sex, globally and by WHO region, 2000–2019



Shaded areas represent 95% uncertainty intervals.

Source: WHO *(35)*.

2.2.3 Metabolic risk factors

Metabolic risk factors for NCDs include hypertension, overweight and obesity, high blood glucose levels and high levels of fat in the blood. This section summarizes the global progress towards the reduction of hypertension; overweight and obesity are discussed in section 4.1.

Hypertension

For the purpose of monitoring population health, hypertension is defined as having raised blood pressure[4] or taking medication for hypertension. The age-standardized prevalence of hypertension among adults aged 30–79 has changed little in the past three decades globally and in all WHO regions, with a notable exception in the European Region, where there has been a continuous decline. In 2019, the global prevalence stood at 33.1% (UI: 31.5–34.8%), and slightly higher among men (34.5%; UI: 32.0–36.9%) than women (31.7%; UI: 29.6–33.9%). However, available data suggests a higher treatment coverage among women globally, leading to a higher prevalence of controlled hypertension than for men (Box 2.6) *(39)*.

The voluntary global target on blood pressure envisages a 25% reduction in raised blood pressure (uncontrolled hypertension) by 2025 against a 2010 baseline *(31, 32)*. Globally, the age-standardized prevalence of uncontrolled hypertension declined slightly from 28.6% (UI: 28.0–29.3%) in 2010 to 26.2% (UI: 24.7–27.8%) in 2019, but this pace of decline is insufficient to achieve the global target by 2025 *(39)*.

2.2.4 Environmental risk factors

Human health is dependent on a variety of environmental factors, such as safe WASH, clean air, safe chemical use, healthy built environments, sound agricultural practices, and protected natural areas and water sources. This section outlines the global progress towards universal access to WASH and the reduction of air pollution. Trends in mortality attributable to environmental risk factors are discussed in Chapter 1.

WASH

Between 2000 and 2022, worldwide some 2.1 billion people gained access to safely managed drinking water (687 million increase since 2015) and 2.5 billion people gained access to safely managed sanitation (902 million increase since 2015). Since 2015, the number of people with basic hygiene services has increased by over 1 billion. Access to safe WASH services improved significantly in rural areas between 2015 and 2022, but progress is limited in urban areas, when measured by the proportion of the population gaining services. However, because of population growth in urban areas, the number of people who have gained access to safely managed drinking water and sanitation services since 2015 is higher in urban than in rural areas (Fig. 2.9) *(40)*.

Box 2.6 Global sex-related inequalities in hypertension

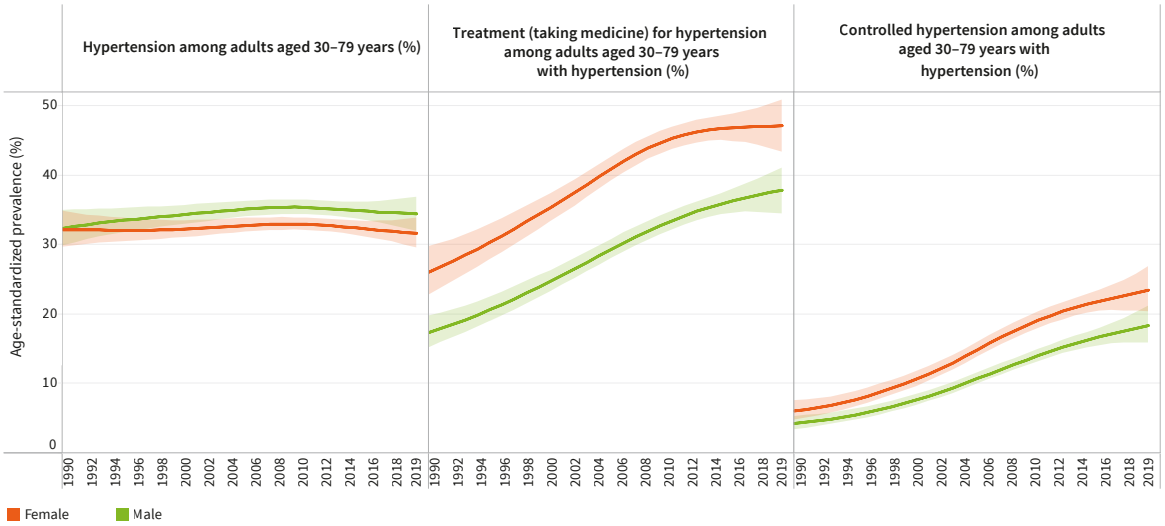
Globally, there are sex-related inequalities in age-standardized prevalence of hypertension among adults aged 30–79 years. While there was no sex-related inequality in 1990 (prevalence of 32.4% [UI: 29.9–35.0] among men and 32.2% [UI: 29.7–34.9] among women), hypertension prevalence was slightly higher among men (34.5%; UI: 32.0–36.9) than women (31.7%; UI: 29.6–33.9) in 2019 (Fig. 2.8).

Age-standardized coverage of treatment for hypertension among adults aged 30–79 years with hypertension largely increased between 1990 and 2019, with the pace of increase slowing down slightly during the past decade, among both men and women. In contrast to hypertension prevalence, which was 2.8 percentage points higher among men than women in 2019, treatment prevalence was 9.3 percentage points higher among women (47.2%; UI: 43.4–50.9) than men (37.9%; UI: 34.5–41.1) in 2019.

Consequently, age-standardized prevalence of controlled hypertension among adults aged 30–79 years with hypertension also increased between 1990 and 2019, with faster improvements among women than men, leading to an increase in sex-related absolute inequality over time. In 2019, controlled hypertension prevalence was 5.1 percentage points higher among women (23.5%; UI: 20.4–26.9) than men (18.4%; UI: 15.9–21.2).

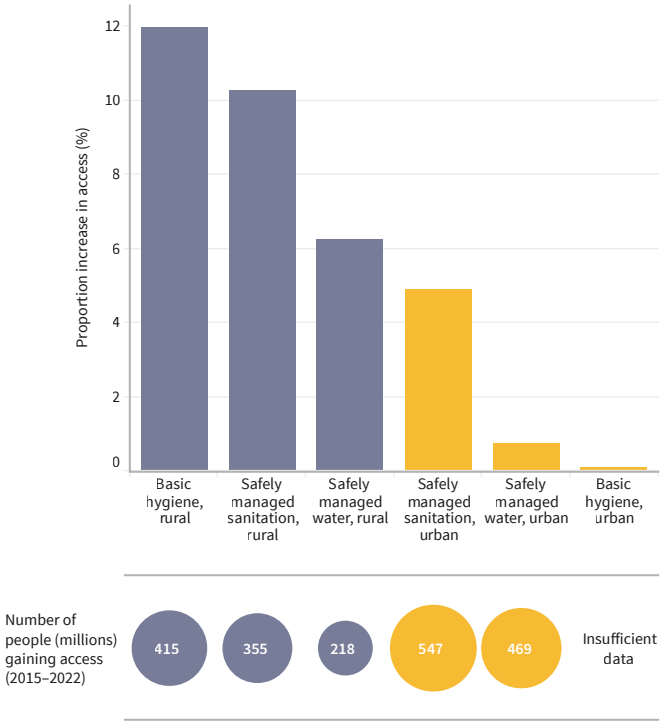
[4] Defined as systolic blood pressure (SBP) ≥ 140 mmHg or diastolic blood pressure (DBP) ≥ 90 mmHg, regardless of diagnosis or medication status.

Figure 2.8 **Global age-standardized prevalence, treatment coverage and controlled hypertension among adults aged 30–79 years, by sex, 1990–2019**



Shaded areas represent 95% uncertainty intervals.
Source: WHO *(39)*.

Figure 2.9 **Percentage increase in the proportion of global population with access to WASH services, and the number of people who gained access, 2015–2022**



Source: UNICEF and WHO *(40)*.

The global coverage of safely managed drinking water (SDG indicator 6.1.1) increased from 69% in 2015 to 73% in 2022, rising from 56% to 62% in rural areas and from 80% to 81% in urban areas. The coverage also varied greatly across WHO regions: in 2022, while nine out of 10 (92%) people in the European Region had access to safely managed drinking-water, only one third (33%) of people in the African Region did. To achieve the SDG target of universal access by 2030, the overall rate of progress will need to increase sixfold *(40)*.

Since 2015, the global coverage of safely managed sanitation (SDG indicator 6.2.1) has increased from 49% to 57% in 2022, rising from 36% to 46% in rural areas and from 60% to 65% in urban areas. The African Region remained the WHO region with the lowest overall coverage, from 23% in 2015 to 26% in 2022. The South-East Asia and Western Pacific regions experienced the largest increases during the same period, reaching 49% and 68%, respectively, in 2022. To achieve universal access by 2030, the global rate of progress will need to increase fivefold *(40)*.

In 2022, the global coverage of basic hygiene services (SDG indicator 6.2.2) reached 75%, up from 67% in 2015. The coverage rose from 53% to 65% in rural areas, but remained stable at around 83% in urban areas. Overall coverage also remained largely unchanged in the African Region at 26%, as the gain in rural areas was offset by the decline in coverage in urban areas from 40% in 2015 to 36% in 2022. To achieve universal access by 2030, the global rate of progress will need to increase threefold *(40)*.

The proportion of total, domestic and industrial wastewater flows that are safely treated is monitored by SDG indicator 6.3.1. Wastewater statistics, however, are at an early stage of development in many countries and there is a lack of reporting, especially from industrial sources. Among the 73 countries (representing 42% of the global population) reporting volumes of total wastewater generated and treated, 76% of total wastewater flows received some level of treatment in 2022. Among the 42 countries (representing 12% of the population) reporting the type of treatment received, 60% of total wastewater flows had at least secondary treatment. In a separate calculation based on data from 140 countries and areas (representing 92% of all household wastewater flows), an estimated 58% of household wastewater was safely treated in 2022 *(41)*.

Many low- and middle-income countries lack domestic resources to improve the water sector. Between 2021 and 2022, official development assistance (ODA) disbursements to the water sector (SDG indicator 6.a.1) rose by 11% to US$ 9.1 billion, a rebound from the declining trend seen over the previous five years. ODA commitments also increased by 16% to US$ 11.4 billion. However, water sector ODA disbursements as a percentage of total ODA across all sectors decreased to 3.2% in 2022, a historical low, and continuing a downwards trend which has accelerated since the start of the COVID-19 pandemic in 2020 *(42)*.

These trends show that while progress towards universal access to safe WASH has been made in some areas, there are still some gaps in data and service coverage. Sustained actions to promote equitable access to WASH services are necessary to tackle these challenges.

Air pollution

The use of clean cooking fuels and technologies significantly reduces exposure to household air pollution, particularly among women and children who spend the most time near the domestic hearth. Globally, the proportion of population with primary reliance on clean fuels and technologies for cooking (SDG indicator 7.1.2) steadily improved from 49% in 2000 to 64% in 2015 and 74% in 2022. The access deficit therefore decreased from about half of the world's population in 2000, to a little over a third in 2015 and about a quarter in 2022. However, this means that 2.1 billion people were still relying on polluting fuels and technologies for cooking in 2022, and the target of universal access by 2030 will not be met if current trends continue. Moreover, rural populations continued to have lower access than urban populations. Box 2.7 presents an analysis of the urban–rural inequalities globally and across WHO regions *(43)*.

Particulate matter (PM) is a common proxy indicator for air pollution. In 2019, almost all (99%) of the world's population was exposed to unhealthy levels of fine PM. Globally, the annual average population-weighted concentration of fine PM in urban areas (SDG indicator 11.6.2) was 33 μg/m^3 (UI: 32–34 μg/m^3) in 2019, over six times the recommended level for protecting public health according to the WHO air quality guidelines (5 μg/m^3). However, it stood at around interim target 1 of the guidelines (35 μg/m^3), and the five-year average level of 2015–2019 (36 μg/m^3) was 9% lower than that of 2010–2014 (39 μg/m^3), signalling improvement in outdoor air quality globally. The Western Pacific Region saw the largest reduction (16%) in the levels of fine PM between the two periods. The Region of the Americas and the European Region continued to have the lowest levels of fine PM since 2010 while simultaneously improving air quality over the years, thanks to regional cooperation and legislations *(43)*.

Addressing air pollution contributes significantly to safeguarding public health, promoting SDGs and mitigating climate change impacts.

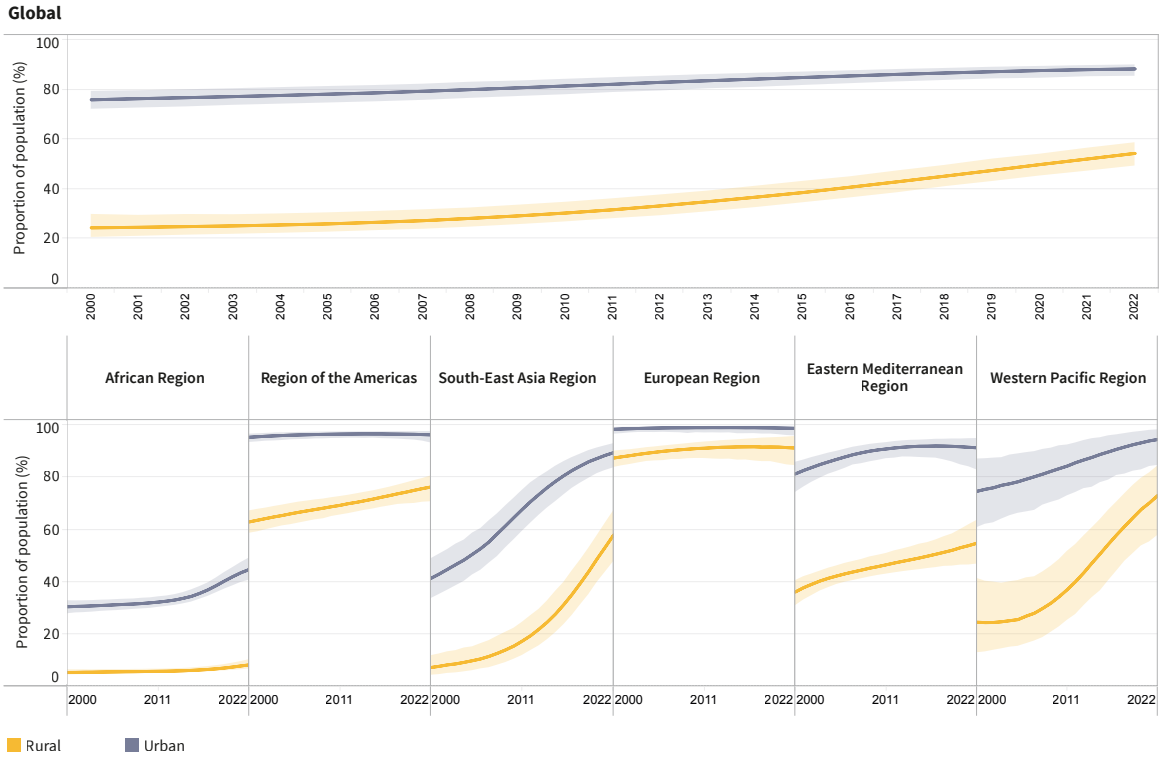
Box 2.7 Urban–rural inequalities in access to clean fuels and technologies, globally and by WHO region, 2000–2022

Globally, there are urban–rural inequalities in access to clean fuels and technologies for cooking, with higher access in urban than rural areas. In 2022, access to clean cooking was 34 percentage points higher among urban (88.3%; UI: 85.4–90.0) than rural areas (54.4%; UI: 49.3–58.7). However, this gap has been reducing continuously since 2000, due to a faster increase in access to clean cooking in rural than urban areas. While access to clean cooking was 51.5 percentage points higher among urban than rural areas in 2000, access in rural areas more than doubled between 2000 and 2022 (from 24.4% [UI: 20.5–29.8] in 2000 to 54.4% [UI: 49.3–58.7] in 2022), leading to a reduction in urban–rural inequality over time.

The situation varies across WHO regions (Fig. 2.10). Large absolute urban–rural inequalities occur in the African, Eastern Mediterranean and South-East Asia regions, where access was more than 30.0 percentage points higher in urban than in rural areas in 2022. Elevated absolute inequalities with a difference of 20.0 percentage points or more between urban and rural areas were also present in the Region of the Americas and the Western Pacific Region. Small inequalities occur in the European Region (difference of 7.5 percentage points between urban and rural areas).

Access to clean cooking was above 50% in both urban and rural areas in all WHO regions in 2022, except the African Region, where coverage was below 50% in both urban (44.7%; UI: 40.6–49.1) and rural areas (8.2%; UI: 6.6–10.2). The African Region was also the only region where absolute inequality has been increasing over time due to a faster increase in access to clean cooking in urban than rural areas (difference between urban and rural areas of 36.6 percentage points in 2022, up from 25.2 percentage points in 2000).

Figure 2.10 Proportion of population with primary reliance on clean fuels and technologies for cooking (%), by urban–rural place of residence, globally and by WHO region, 2000–2022



Shaded areas represent 95% uncertainty intervals.

Source: WHO *(43)*.

2.2.5 Risks to women's and girls' health

Women and girls face certain health risks as they are in a disadvantaged position not only due to biological factors, but also sociocultural factors in some societies. For example, an emphasis on women's reproductive roles, and potential or actual experience of physical, sexual and psychological violence, may prevent women and girls from fully accessing quality health services and attaining the best possible level of health.

Adolescent pregnancy

Child marriage and child sexual abuse place girls at increased risk of pregnancy, often unintended. In many places, barriers to obtaining and using contraceptives prevent adolescents from avoiding unintended pregnancies.

In 2023, there were an estimated 12.7 million births among teenage girls aged 15–19 years, and almost half a million births among very young girls aged 10–14 years, together representing 10% of all births worldwide. About one in six (16%) of all births in the WHO African Region, and about one in 10 (11%) in the Region of the Americas, was among adolescent mothers aged 10–19 years in 2023 (Fig. 2.11) *(44)*.

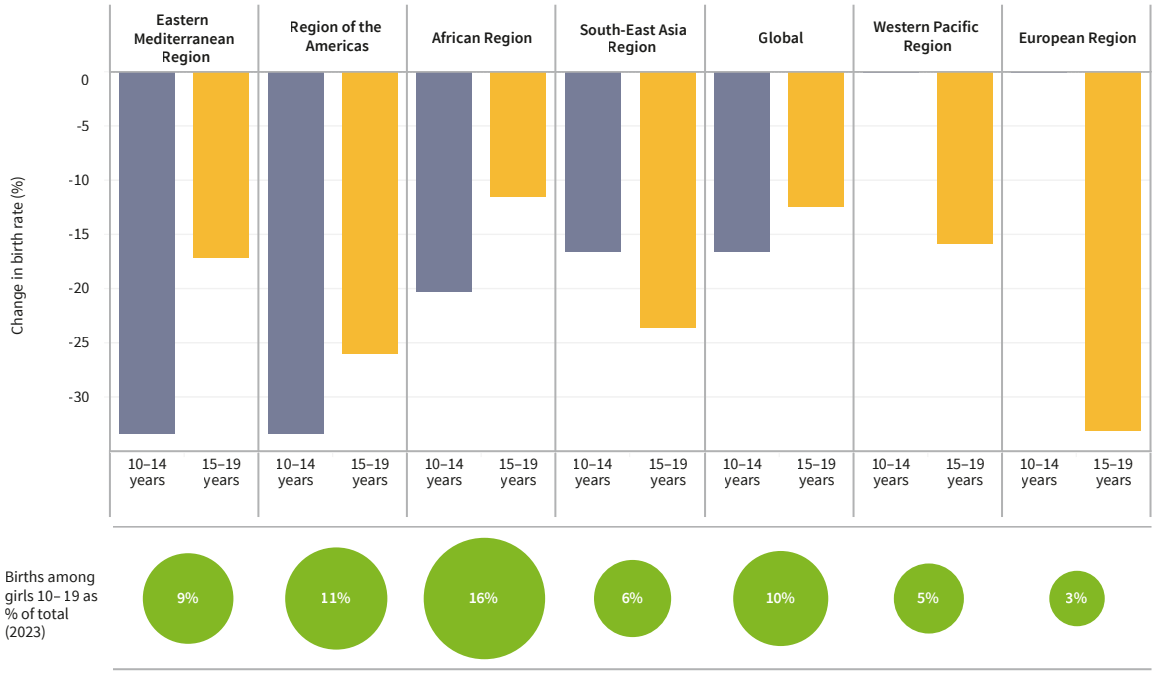
Adolescent birth rates (ABR) per 1000 girls (SDG indicator 3.7.2) have been falling since 2000, but the decrease has been slow and uneven. In 2023, the global ABR was 41.3 births per 1000 girls aged 15–19 years, representing a 36% decline since 2000, and 12% since 2015 (Fig. 2.11). Among girls aged 10–14 years, the global ABR declined from 3.3 in 2000 to 1.8 in 2015 and 1.5 in 2023. Since 2000, the European and Western Pacific regions have maintained the lowest ABR and the lowest proportion of births among adolescent girls out of all births, while the African Region continued to have the highest levels *(44)*.

Violence against women

Intimate partner violence (IPV) – including physical, sexual and psychological violence – and sexual violence against women and girls cause serious short- and long-term physical, mental, sexual and reproductive health problems for women and girls. They also affect the health and well-being of their children and families.

Trend analyses based on data up to 2018 suggest that there has been insufficient progress in reducing IPV against women and girls over the past two decades *(45)*. The latest estimates based on data from 161 countries and areas suggest that globally, in 2018, some 26% (UI: 22–30%) of ever-partnered women aged 15 years or older had experienced IPV at least once in their lifetime (SDG indicator 5.2.1) and 10% (UI: 8–12%) in the past 12 months. In the same year, 6% (UI: 4–9%) of all women aged 15 years or older had experienced lifetime non-partner sexual violence (SDG indicator 5.2.2) *(46)*. The estimates also suggest that violence starts early in the lives of women. Adolescent girls aged 15–19 years experienced high rates of IPV, with 24% (UI: 21–28%) of those partnered being subjected to physical and/or sexual violence from an intimate partner at least once in their lives and 16% (UI: 14–19%) within the past 12 months *(47)*. Emerging evidence also indicates that the prevalence of all forms of IPV is higher among women with disabilities than among women without disabilities (see section 4.2.3) *(48, 49)*.

Figure 2.11 **Percentage change in adolescent birth rate, by age group, and the proportion of births among adolescent girls out of total births, globally and by WHO region, 2015–2023**



Source: UN DESA *(44)*.

2.3 Health systems strengthening as a key means to achieve UHC

In September 2023, at the United Nations General Assembly high-level meeting on UHC, political leaders reaffirmed their commitment to taking action for UHC *(50)*. Building on the 2019 Political Declaration on UHC *(51)*, the 2023 Political Declaration provides a roadmap to accelerate implementation towards achieving health for everyone, everywhere, and ensuring that no one is left behind. It acknowledges the importance of health systems strengthening based on a primary health care (PHC) approach, which is critical not just for centring people and communities, but also for effective health emergency prevention, preparedness, response and recovery, which has never been more salient than during the COVID-19 pandemic.

UHC, grounded in the principle that all individuals and communities should have access to quality essential health services throughout the entire spectrum of care without enduring financial hardships, not only contributes to improving health outcomes (SDG 3) but also plays a pivotal role in other SDGs, including economic growth and job creation (SDG 8), gender equality (SDG 5), education (SDG 4), nutrition (SDG 2) and poverty reduction (SDG 1). Strengthening health systems and enhancing the sustainability and equity of health services and financing models are pivotal factors that contribute to the successful achievement of UHC. This section delves into SDG indicators related to service delivery and health financing, illustrating disparities across WHO regions and World Bank country income groups.

2.3.1 Service delivery

Service delivery, the primary interface between health systems and people, includes a wide range of health service providers, but also public health-care institutions and other actors responsible for essential public health functions and provision of health-care products.

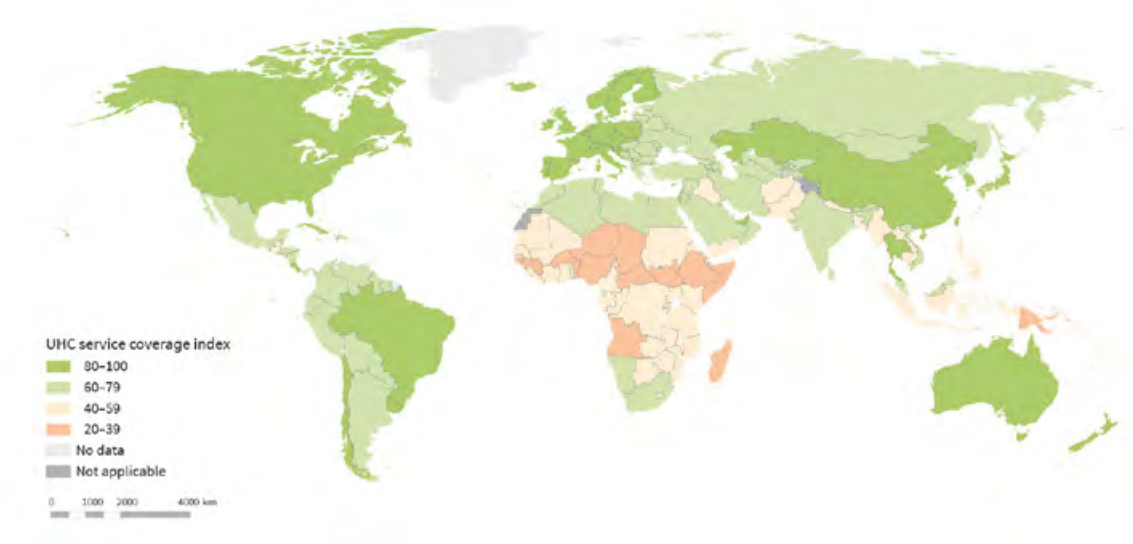
Scaling up the coverage of essential health services with an emphasis on PHC

Scaling up the coverage of effective essential health services is a fundamental strategy for achieving UHC. It aims not only to improve health outcomes but also to promote health equity and ensure that health care is universally accessible and of high quality.

SDG indicator 3.8.1, referred to as the UHC service coverage index, aims to measure the average coverage of essential services through a single index score based on 14 indicators across four domains: reproductive, maternal, newborn and child health (RMNCH); infectious diseases; NCDs; and service capacity and access. This score increased remarkably from 45 to 68 between 2000 and 2021 globally but progress has slowed since 2015 and even stagnated during the COVID-19 pandemic. The highest index scores were in the European Region, the Region of the Americas and the Western Pacific Region (around 80), followed by South-East Asia (62), Eastern Mediterranean (57) and African regions (44). Figure 2.12 shows the scores by country in 2021 *(52)*.

The most significant improvements in the average coverage of essential health services occurred in the infectious diseases domain. HIV antiretroviral therapy (ART) treatment coverage increased from 2% (UI: 2–2%) in 2000 to 76% (UI: 65–89%) in 2022, yet still far from the 95–95–95 targets[5] for 2025 *(2–4)*. There were also improvements in TB treatment coverage over the same period, from 34% (UI: 26–46%) in 2000 to 70% (UI: 66–76%) in 2022, with an apparent rebound in 2021 and 2022 after the sharp reversal of progress in 2020 (58%, UI: 55–62%) due to disruptions caused by the COVID-19 pandemic *(6)*. ITN use to prevent malaria also increased between 2000 and 2022, from 2% (UI: 2–3%) to 49% (UI: 47–51%), although a stagnation was observed after 2015 *(8)*.

Figure 2.12 UHC service coverage index, by country, 2021



Source: WHO and World Bank *(52)*.

[5] Achieving the 95–95–95 targets requires that 95% of people living with HIV know their HIV status, 95% of people who know their status are receiving ART, and 95% of people on ART have suppressed viral loads. This translates to 95% of people living with HIV knowing their HIV status, 90% of people living with HIV receiving ART, and 86% of people living with HIV having suppressed viral loads.

In the area of RMNCH, the proportion of women of reproductive age having their need for family planning met with modern methods (SDG indicator 3.7.1) saw a modest uptick from 74% in 2000 to 78% in 2023, still far from the target of universal access by 2030 *(53)*. Similarly, the proportion of children who received three doses of the vaccine against diphtheria, tetanus and pertussis (DTP) (SDG indicator 3.b.1 – DTP3) rose from 72% in 2000 to 84% in 2022. However, a notable 5 percentage points coverage drop occurred between 2019 and 2021, followed by a 3 percentage points increase in 2022. The coverage of the two doses of the vaccine for measles (SDG indicator 3.b.1 – MCV2) and three doses of pneumococcal conjugate vaccine (SDG indicator 3.b.1 – PCV3) also increased, reaching 74% and 60%, respectively, in 2022, with stagnations observed in 2020–2021. In contrast, global coverage of *Human papillomavirus* (HPV) vaccine (SDG indicator 3.b.1 – HPV), critical for women's and girls' health globally, only reached 15% in 2022, with 130 countries having introduced the HPV vaccine in their national immunization services by the end of 2022. The 90% target set by the Immunization Agenda is unlikely to be met for any of these vaccinations if current trends continue *(23, 54)*. Moreover, while there has been a positive increase in the proportion of births attended by skilled health personnel (SDG indicator 3.1.2), rising from 61% in 2000 to 86% in 2023 and notably improving outcomes in childbirth, it is important to acknowledge a slowdown in the pace of progress since 2015, and the global target of 90% coverage by 2025 is unlikely to be met unless progress is accelerated *(55, 56)*.

Positive advancements have been observed in service coverage of NCDs, which continue to contribute the highest proportion of the disease burden. For example, according to the latest estimates, the proportion of adults aged 30–70 years receiving treatment for hypertension increased from 30% in 2000 to 42% in 2019. The effective coverage for hypertension treatment is estimated to have more than doubled from 9% to 21% over the same period *(39)*.

Data on treatment coverage for alcohol and drug use disorders between 2015 and 2018 range from extremely low (0.3%) to a maximum of 35% for drug use disorders and 14% for alcohol use disorders in the 20 countries that were able to report these data in 2019. To address challenges in estimating treatment coverage for substance use disorders (SDG indicator 3.5.1), a service capacity index has been introduced as a complementary measure (index range 0–100). This index varied significantly among countries, with values ranging from 1 to 80 in 2019. The highest index values were observed in the European Region (49), while the lowest were in the African Region (25) *(38)*.

In most settings, efficiency and equity in the delivery of health services requires an increased emphasis on frontline services, particularly PHC.

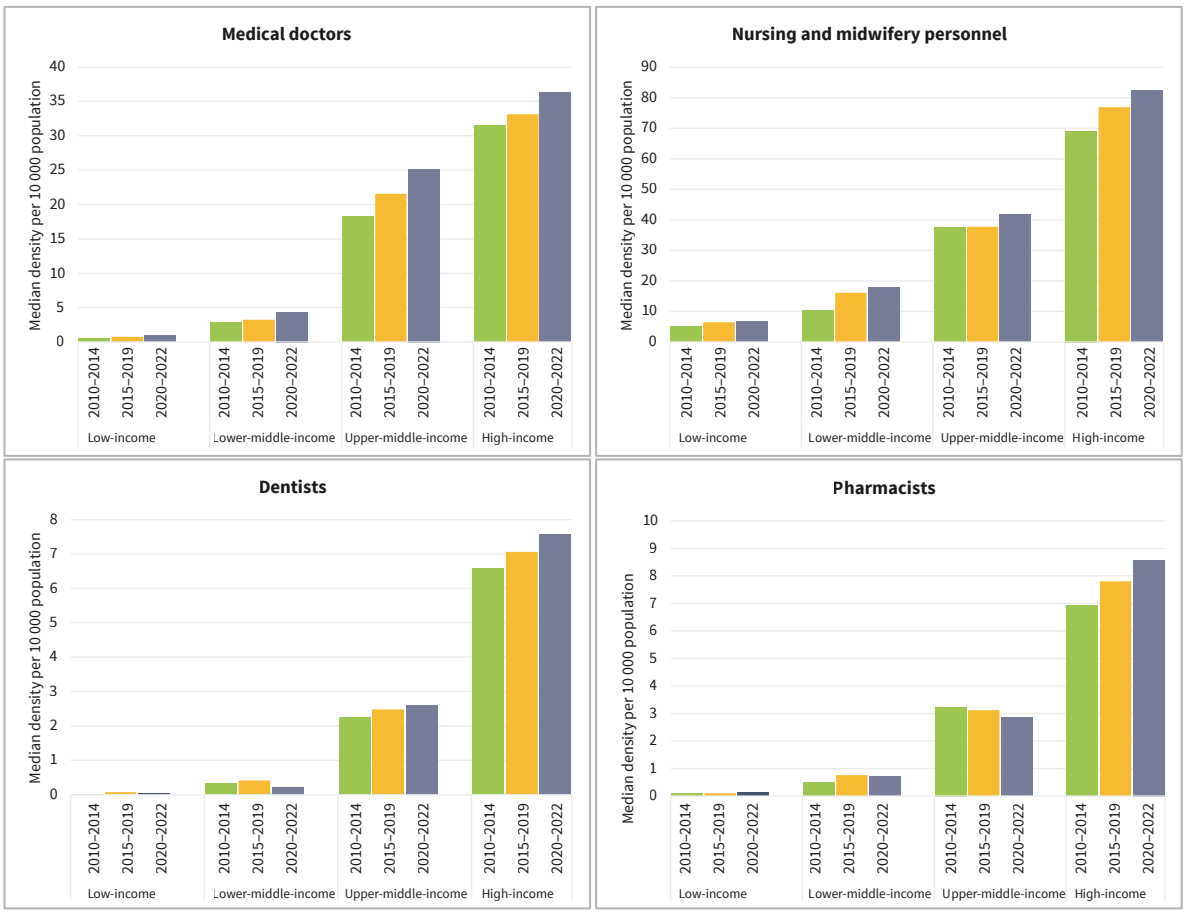
Increasing the recruitment, development, training and retention of the health workforce

Health workers are the cornerstone of a resilient health system, and the demand for health workers continues to increase as global health challenges become more complex and the world's population grows and ages. To make progress towards UHC, it is critical to address the global shortage of health workers, so that adequate numbers of health workers are available in the right quantity in the right places, in alignment with population health needs *(57)*. Based on the latest data available over the period 2015–2022 for each country, low-income countries had the lowest health worker density and distribution (SDG indicator 3.c.1) with a median of only 1.1 medical doctors (interquartile range [IQR]: 0.7–1.9), 7.5 (IQR: 5.0–11.2) nursing and midwifery personnel, 0.04 dentists (IQR: 0.01–0.20) and 0.2 (IQR: 0.1–0.4) pharmacists per 10 000 population, compared with medians of 35.6 (IQR: 29.3–43.5), 76.8 (IQR: 55.1–109.3), 7.0 (IQR: 4.8–9.1) and 8.8 (IQR: 6.7–11.1), respectively, in high-income countries. An analysis of countries with available data over three consecutive time periods (2010–2014, 2015–2019, 2020–2022) reveals a consistent increase in the density and distribution of health workers across all income groups, except for dentists in low-income and lower-middle-income countries, and pharmacists in middle-income countries (Fig. 2.13) *(58)*. However, even when national densities seem adequate, disparities persist at subnational level.

Improving access to medicines and health technologies

To achieve equitable access to medicines and health technologies, major attention is required to this subsystem within health systems. Since 2015, the proportion of health facilities that have a core set of relevant essential medicines available and affordable on a sustainable basis (SDG indicator 3.b.3) has been estimated for only 17 countries in the WHO Africa Region, Region of the Americas and European Region, with a median value of 8% across the 17 countries (IQR: 0–22%) *(60)*. Work is ongoing to improve the methodology to measure access to essential medicines and other health-care products to enable sustained global monitoring. The COVID-19 pandemic highlighted the huge and growing divide between high- and low-income countries in accessing medicines and health-care products, and the need for innovation and local production to enhance the equitable distribution of health-care products (i.e. medicines, vaccines, diagnostics and devices) *(61)*.

Figure 2.13 Health worker density and distribution, by World Bank income group, 2010–2022 (median values)[a]



[a] Data were available for the three periods in 123 countries (46 high-income countries [HIC], 30 upper-middle-income countries [UMC], 33 lower-middle-income countries [LMC], 14 low-income countries [LICs]) for medical doctors, 119 countries (45 HIC, 33 UMC, 27 LMC, 14 LIC) for nursing and midwifery personnel, 98 countries (43 HIC, 26 UMC, 23 LMC, 6 LIC) for dentists and 100 countries (43 HIC, 20 UMC, 25 LMC, 12 LIC) for pharmacists. The income grouping refers to the World Bank analytical income of economies as of 1 July 2023, based on gross national income (GNI) per capita estimates for the year 2022 *(59)*.

Source: WHO *(58)*.

Implementing the International Health Regulations (IHR) and service delivery models that promote resilience

The ability to prevent, detect and respond to health emergencies is a critical component of UHC. Service delivery models that are truly fit for purpose need to be equipped to implement the IHR and to develop a clear sense of the types of threats they may face and to prepare for them.

The IHR States Parties Self-Assessment Annual Report (SPAR) tool consists of 35 indicators for the 15 IHR capacities needed to detect, assess, notify, report and respond to public health risks and acute events of domestic and international concern (SDG indicator 3.d.1). Based on the analysis of the latest annual reporting data, the top challenges at the global level are policy, legal and normative instruments to implement IHR (C.1), chemical events (C.14), radiation emergencies (C.15) and human resources (C.6); while the top strengths are laboratory (C.4), surveillance (C.5), health emergency management (C.7) and health services provision (C8). The European Region had the highest scores for the capacities related to zoonotic diseases (C.12), food safety (C.13), chemical events (C.14) and radiation emergencies (C.15), while the South-East Asia Region did particularly well for capacities related to policy, legal and normative instruments to implement IHR (C.1) and coordination and advocacy (C.2). The African Region had the lowest scores for all capacities with the exception of zoonotic diseases (C.12) (Fig. 2.14) *(62)*.

SPAR serves as a barometer for a nation's preparedness and response, and helps understand not only national capacities in health security but also how they fit in a regional and international context. Box 2.8 describes the latest situation in Kiribati and how it relates to other Pacific island countries.

Figure 2.14 IHR capacity scores, by WHO region, 2023

Source: WHO *(62)*.

Box 2.8 Towards stronger health security in the Pacific island countries

Understanding the national capacities in health security in a regional and international context is especially important in regions that face distinctive health security challenges, such as the South Pacific. The South Pacific spans one third of the Earth's surface, yet it is inhabited by less than 1% of the global population. The remoteness of the region often functions as a gatekeeper for infectious diseases but makes it more likely for outbreaks of waterborne and foodborne diseases. The South Pacific is prone to extreme weather events, such as cyclones and flooding, which are increasing in intensity and frequency. Additionally, the South Pacific's rising sea levels exceed the global mean rate (reaching about 4 mm per year), further increasing the region's vulnerability *(63)*.

Until 2023, a limited number of Pacific island countries submitted a SPAR regularly, making it difficult to identify, address and strengthen health security in the region. In August 2023, thirteen Pacific island countries committed to bolstering health security reporting mechanisms during a meeting of Pacific IHR national focal points.

One of the Pacific island countries with a complex set of challenges is Kiribati, which comprises 33 atolls scattered across the equator and over 5 million square kilometres of water. In addition to infectious diseases, natural disasters such as the 2022 drought and the 2015 cyclone Pam have severely impacted Kiribati's health security. The drought affected water and food access for 119 000 of the 131 000 people in Kiribati, while cyclone Pam caused widespread flooding and damage, including in the capital, Tarawa *(63, 64)*.

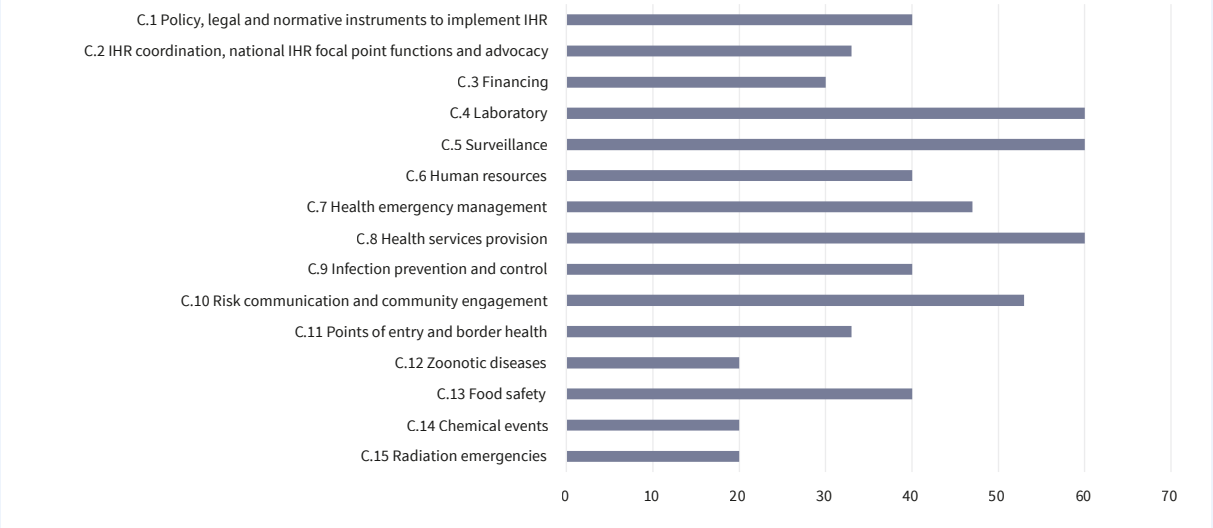
In preparation for Kiribati's Ministry of Health to submit IHR SPAR, a multisectoral consultation was organized in collaboration with WHO in December 2023. The involvement of representatives from different sectors such as emergency response, agriculture, financing and legislation helped to ensure that the SPAR scores accurately reflected the country's situation.

By February 2024, Kiribati – together with 11 other Pacific island countries (Cook Islands, Fiji, Marshall Islands, the Federated States of Micronesia, Nauru, Niue, Palau, Samoa, Solomon Islands, Tonga, Vanuatu) – submitted their SPARs. This has been the highest number of SPAR submissions in the region so far, shedding light on areas for improvement. Areas with the biggest gaps in the South Pacific, scoring on average less than 60 out of 100 points per area, are policy, legal and normative instruments to implement IHR; infection prevention and control (IPC); points of entry (PoEs) and border health; health services provision; zoonotic diseases; food safety; chemical events; and radiation emergencies. Countries also declared gaps in financing, human resources, IHR coordination, national IHR Focal Point functions and advocacy.

Kiribati SPAR results in 2023 identified areas where more attention would be needed in cross-sectoral approaches, including for zoonotic diseases, radiation emergencies and chemical events (Fig. 2.15). The review process for completing the SPAR helped to map out where there were capacity gaps and opportunities for strengthening in coming years.

Recognizing the importance of IHR, Kiribati integrates the SPAR score average as one of the indicators in its National Health Strategic Plan 2024–2027, with the 2023 assessment as the baseline (Fig. 2.15). There is a commitment in the National Health Strategic Plan to improve on the SPAR score in the coming four years with annual monitoring.

Figure 2.15 SPAR scores by capacity in Kiribati, 2023



Source: WHO *(62)*.

2.3.2 Health financing

Health financing arrangements determine the ability of health systems to respond to health needs, pool financial risks, and operate efficiently and equitably. They span choices and decisions in three interlinked financing functions – mobilizing resources, pooling them and using them to strategically purchase health services.

Mobilizing resources and prioritizing health

The Addis Ababa Action Agenda (AAAA) recognized that the primary mechanism for meeting resource needs for achieving the SDGs should be domestic *(65)*.

In 2021, global government health spending (the health component of SDG indicator 1.a.2) surged, except in low-income countries (Fig. 2.16). High- and upper-middle-income nations increased health priority due to COVID-19-related expenditures. In lower-middle-income countries, slower growth in health spending compared with general government spending resulted in reduced health priority in almost half of them, though outliers boosted the average. Among low-income countries, half saw declining health priority as reduced government health spending coincided with higher general spending. External aid likely played a significant role in financing health-care expenses related to the COVID-19 pandemic in low- and lower-middle-income nations, echoing a trend where higher external funding in low-income countries correlated with lower health priority in government budgets during the MDG period *(66)*.

Development assistance for health (DAH) to complement domestic financing

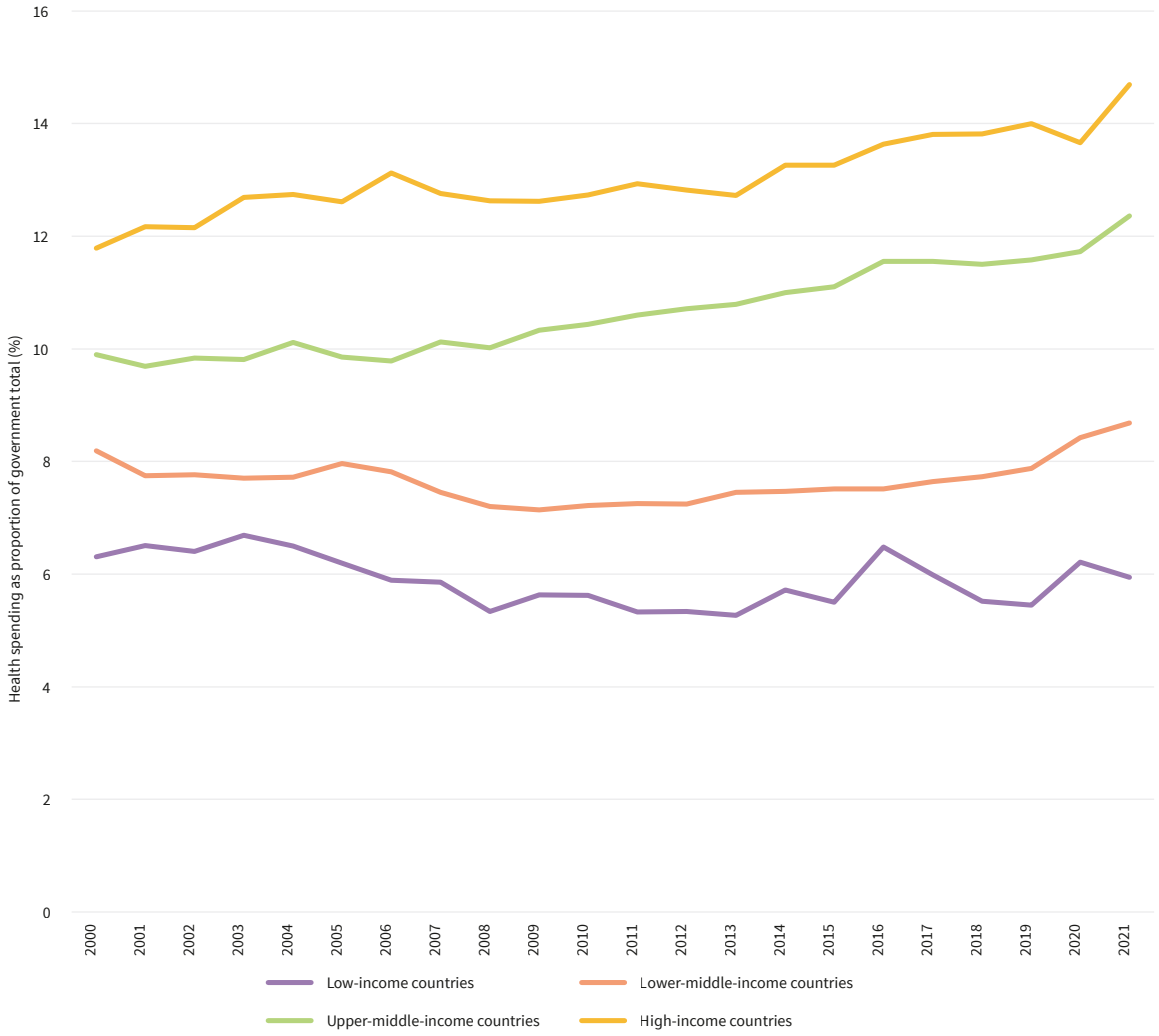
As part of the AAAA, countries committed to reverse the decline in aid to the poorest and fragile countries, many of which will require sustained DAH to address capacity constraints and continue progress toward UHC. However, DAH must add to domestic resources rather than crowding them out, and support efforts to increase the effectiveness and efficiency of domestic resources utilization.

In 2022, the African Region received the highest weighted average health ODA per capita (US$ 5.35) compared with countries in other regions (less than US$ 3 per capita) (SDG indicator 3.b.2) *(42)*. While DAH has undeniably contributed to noteworthy health improvements, the current architecture and incentives associated with such assistance have inadvertently led many nations to neglect funding for basic health services in their own budgets and become overly aid-dependent *(68)*. The COVID-19 pandemic has shown the perils of overdependence on external sources of finance and distant suppliers for critical health needs *(69)*.

Improve financial protection for all

Expanding pooling arrangements is essential to provide protection from the economic consequences of ill health and enhance equity in service use – to reduce foregone care for financial reasons, financial hardship due to out-of-pocket (OOP) health payments and indebtedness due to health cost. In many countries, direct household OOP

Figure 2.16 Proportion of total government spending on health (%), by World Bank income group, 2000–2021



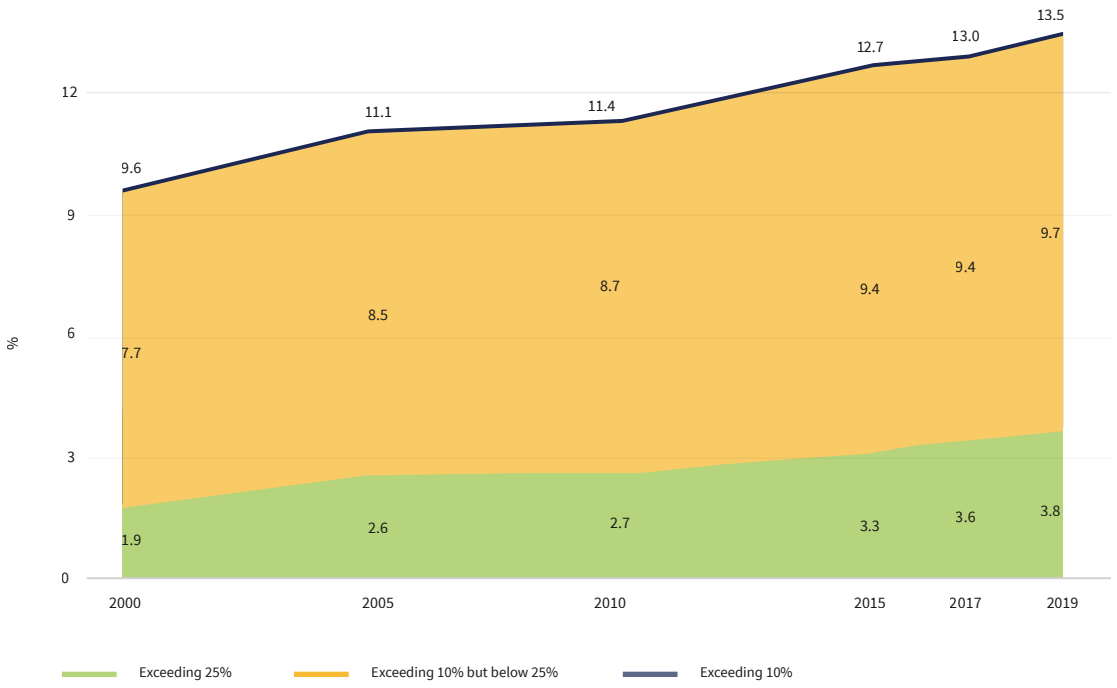
Note: The income grouping refers to the World Bank analytical income of economies as of 1 July 2022, based on GNI per capita estimates for the year 2021.
Source: WHO *(67)*

continues to constitute the largest share of health financing; the latest data shows that 2 billion people suffer financial hardship (impoverishing out-of-pocket health spending, catastrophic health spending or both) *(52)*.

The global proportion of the population with catastrophic OOP health spending at 10% thresholds (SDG indicator 3.8.2) continuously increased from 9.6% in 2000 to 12.7% in 2015 at the beginning of the SDG era and reached 13.5% in 2019, representing over 1 billion people (Fig. 2.17). The largest shares were reported in the Western Pacific Region (19.8%) and South-East Asia Region (16.1%); the lowest shares were reported in the Region of the Americas (7.8%) and the European Region (7.9%) *(52)*.

Even prior to the COVID-19 pandemic, and despite long-standing high-level commitments to health for all and UHC, progress was largely off-track. Many governments have neglected foundational investments in health systems. Consequently, health services have been disrupted and inequities between and within countries have worsened during the COVID-19 pandemic. Achieving UHC requires targeted resource allocation and a renewed commitment to building resilient health systems that prioritize access to essential services for the poor and most vulnerable.

Figure 2.17 Proportion of the population with out-of-pocket health spending exceeding 10% or 25% of the household budget



Source: WHO and World Bank *(52)*.

2.4 SDG progress to date

Midway through the SDG period, there has been mixed progress in the health-related areas. Among the 53 health-related SDG indicators reviewed in this report, 32 have numeric SDG or other global targets. None of these targets has been achieved thus far, and none is likely to be met if current trends continue. However, most of the indicators (42 out of 53) are showing progress in the right direction globally; the remaining indicators are either moving in the wrong direction or cannot be assessed due to limited data. New and refocused commitment and capacities at national, regional and global levels are key to accelerate progress and reverse worrying trends.

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3.

Progress towards WHO Triple Billion targets

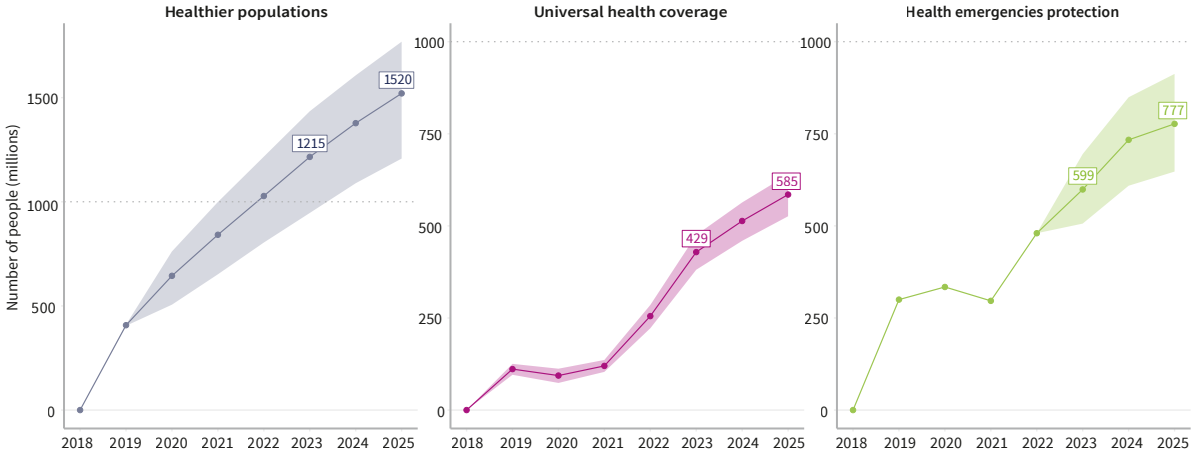
The WHO Triple Billion targets, outlined in and as the foundation of the WHO GPW13, are a set of ambitious goals aimed at improving global health by 2025: one billion more people benefitting from UHC, one billion more people better protected from health emergencies and one billion more people enjoying better health and well-being *(1, 2)*. Functioning as both an impact measurement tool and a policy strategy, they are an integral part of the GPW13 Results Framework. The targets focus on achieving measurable impacts on people's health at the country, regional and global levels. They are tangible, related to human lives and able to drive changes.

Triple Billion targets are based on 46 outcome indicators to track the progress that WHO and its Member States achieve in improving population health at the country level. The indicators include 39 SDG indicators, and seven non-SDG indicators approved by WHO Member States to address country priorities during the 72nd World Health Assembly (WHA 72) in 2019 *(3, 4)*. The close alignment between the Triple Billion and SDGs enables countries to apply Triple Billion targets in delivering their commitments on the SDGs.

Triple Billion projections were calculated for the years 2019–2025 relative to a 2018 baseline, providing much-needed milestones for progress made at the global, regional and country levels in providing, promoting and protecting global health. This chapter focuses on the global and regional results to date *(5)*.

Overall, the world has collectively achieved the healthier population billion target, but is lagging on the other two billions. Relative to 2018, there was an estimated 1.2 billion (UI: 0.9–1.4 billion) more people enjoying better health and well-being in 2023; this will likely rise to more than 1.5 billion (UI: 1.2–1.8 billion) by 2025. In contrast, there was only 0.4 billion (UI: 0.4–0.5 billion) more people in 2023 benefitting from UHC, and only 0.6 billion (0.5–0.7 billion) better protected from health emergencies. These figures will likely rise to 0.6 billion (0.5–0.6 billion) and 0.8 billion (UI: 0.6–0.9 billion) by 2025, respectively – far below the target of one billion *(5)*. The overall contribution of the UHC billion was disaggregated and the contribution of each underlying tracer indicator calculated, allowing for precise assessment of the impact of these individual indicators *(6)*.

Figure 3.1 WHO Triple Billion target progress and forecast, 2018–2025



Key: main line and circles: actual numbers and projections; shaded areas: confidence intervals for projections.
Source: WHO *(5)*.

3.1 Healthier populations billion

The healthier populations (HPOP) billion aims to improve population health and well-being by promoting healthier behaviours, lifestyles and environments. Achieving this billion relies on multisectoral intervention through advocacy and changes in public policy and regulation. The calculation of this billion comprised 21 tracer indicators (including four disaggregated indicators) that cover a wide range of health topics, including clean air, safe water, road safety, tobacco and alcohol consumption, obesity, violence, child nutrition and development.

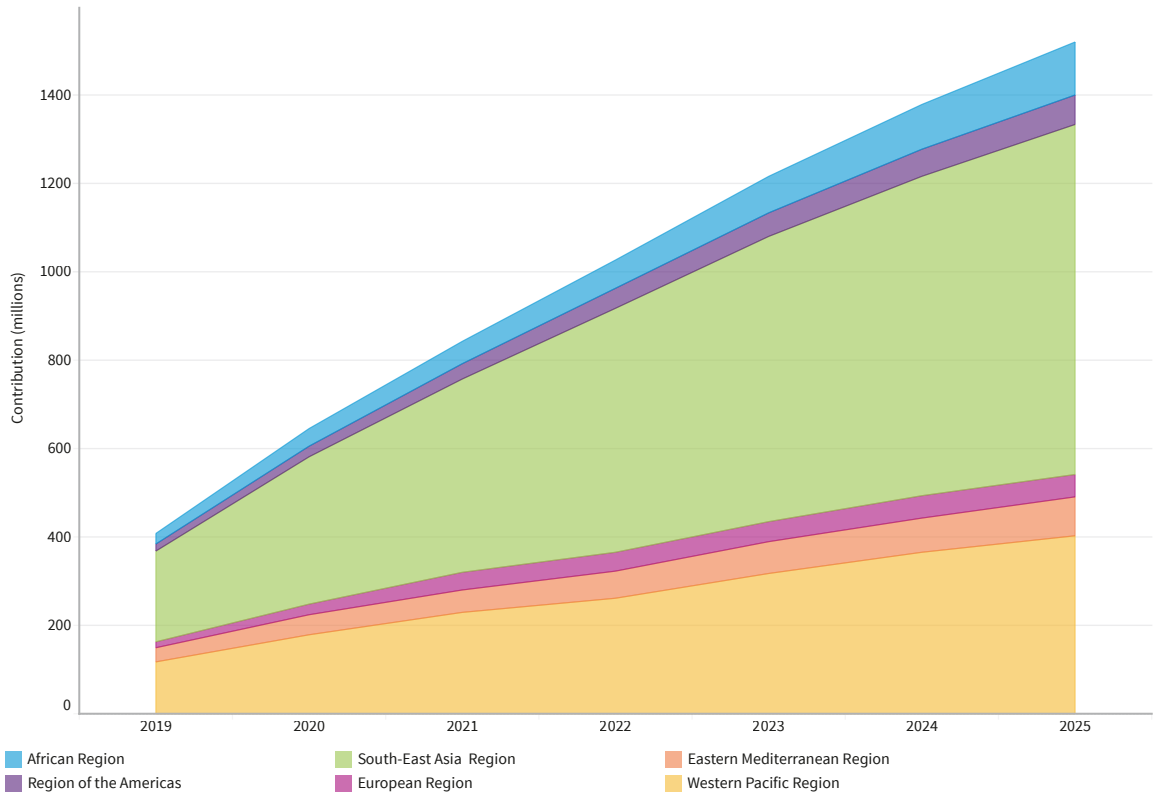
Overall, the world has been progressing steadily towards the HPOP billion target since 2018. This target was achieved in 2023 with 1.2 billion (UI: 0.9–1.4 billion) more people enjoying better health and well-being compared with 2018. Although this trend was not reversed, progress slowed considerably during the 2020–2022 COVID-19 pandemic. The year-to-year change of HPOP contribution was 407 million from 2018 to 2019, but was only 237 million from 2019 to 2020, followed by 198 million in 2021 and 186 million in 2022. Relative to 2018, the

number of additional people living a healthier life is projected to surpass 1.5 billion (UI: 1.2–1.8 billion) by 2025 (Fig. 3.1) *(5)*.

All six WHO regions have progressed well towards HPOP target since 2018. The greatest improvement has been in the South-East Asia and Western Pacific regions.

Compared with 2018, in 2023 there were 644 million (UI: 536–744 million) and 318 million (UI: 71–503 million) more people in these two regions, respectively, enjoying better health and well-being, accounting for 53.0% and 26.1% of the global total HPOP contribution, respectively *(5)*.

Figure 3.2 HPOP billion contribution by WHO region, 2019–2025



Source: *WHO (5).*

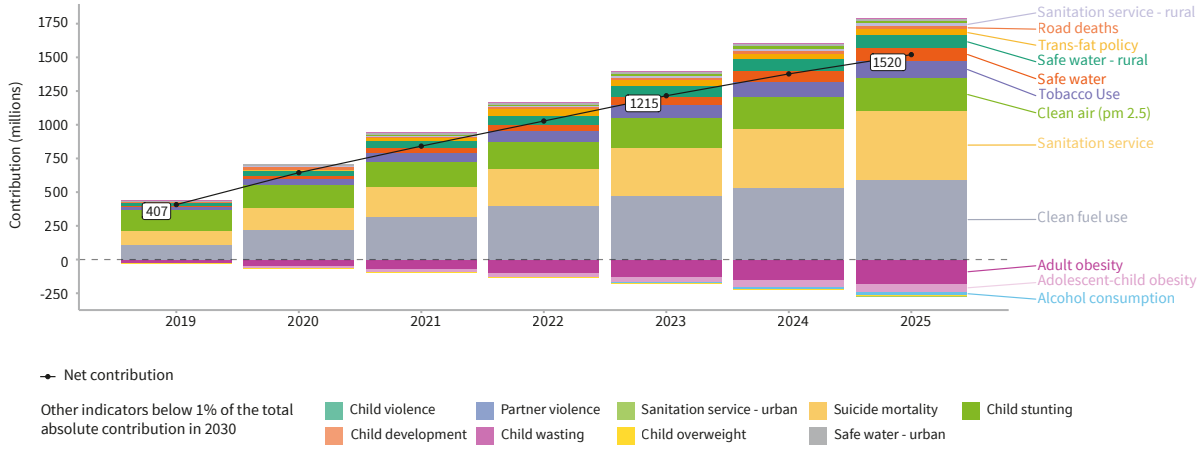
Among the 21 tracer indicators included in the computation of the HPOP billion, the three indicators with the greatest contributions are clean fuels, safely managed sanitation services and clean air (Fig. 3.3). In 2019, the shares of these indicators in overall HPOP contribution were 27.1% (UI: 27.1–27.1%), 24.7% (UI: 24.7–24.7%) and 37.5% (UI: 37.5–37.5%), respectively; in 2023, they were 38.7% (UI: 36.9–40.5%), 29.8% (UI: 27.6–32.0%) and 17.8% (UI: –4.6 to 35.3%). The indicator that had the least contribution to HPOP was adult obesity: its contribution was –5.9% (UI: –6.6 to –5.2%) in 2019, and –10.5% (UI: –11.8 to –9.3%) in 2023 *(5)*.

There was considerable heterogeneity in terms of contributions from tracer indicators across the WHO regions in 2023. Changes in the coverage of clean household fuel contributed positively to the HPOP billion in all but one region. The greatest contribution was seen in the African Region (61.7%, UI: 54.5–69.5%), followed by the South-East Asia (43.7%, UI: 41.3–46.2%), Eastern Mediterranean (39.2%, UI: 37.2–41.2%) and Western Pacific (37.4%, UI: 34.1–40.8%) regions. In the European Region, the decline in the use of clean household fuels by 2023 caused a negative impact, –36.7% (UI: –47.1 to –25.6%), to the HPOP billion. The contribution of safely managed sanitation was greatest in the Region of the Americas (49.0%, UI: 45.6–52.1%) followed by the Western Pacific Region (44.4%, UI: 39.1–49.7%). For clean air, the contribution was greatest in the European Region (52.2%, UI: 40.8–64.5%), the Eastern Mediterranean Region (31.4%, UI: –4.1 to 64.2%) and the Region of the Americas (28.9%, UI: 6.3–48.0%), but lowest in the African Region (0.1%, UI: –15.8 to 14.3%). The contribution of safely managed water was prominent in the African Region, the Region of the Americas and the Eastern

Mediterranean Region, all above 20%. Obesity in adults made negative contribution across all six regions, which was largest in magnitude in the Region of the Americas (–48.0%, UI: –58.0 to –36.9%), followed by the Eastern Mediterranean Region (–26.0%, UI: –31.2 to –20.6%). Obesity in adolescents and children also made a negative contribution across all six regions, but to a much lower degree *(5)*.

Trans-fat regulation and lower road traffic mortality (road deaths) had more noticeable positive contribution in the European Region than in other regions. The impact of tobacco use among adults was salient across all six regions, especially in the European Region (27.7%, UI: 27.5–27.8%) and the Region of the Americas (24.6%, UI: 24.6–24.8%). Changes in alcohol consumption also led to minor changes in the HPOP billion, with the greatest impact found in the African Region (–4.7%, UI: –12.7 to 3.7%) *(5)*.

Figure 3.3 Contribution of tracer indicators to the HPOP billion, 2019–2025



Source: WHO *(5)*.

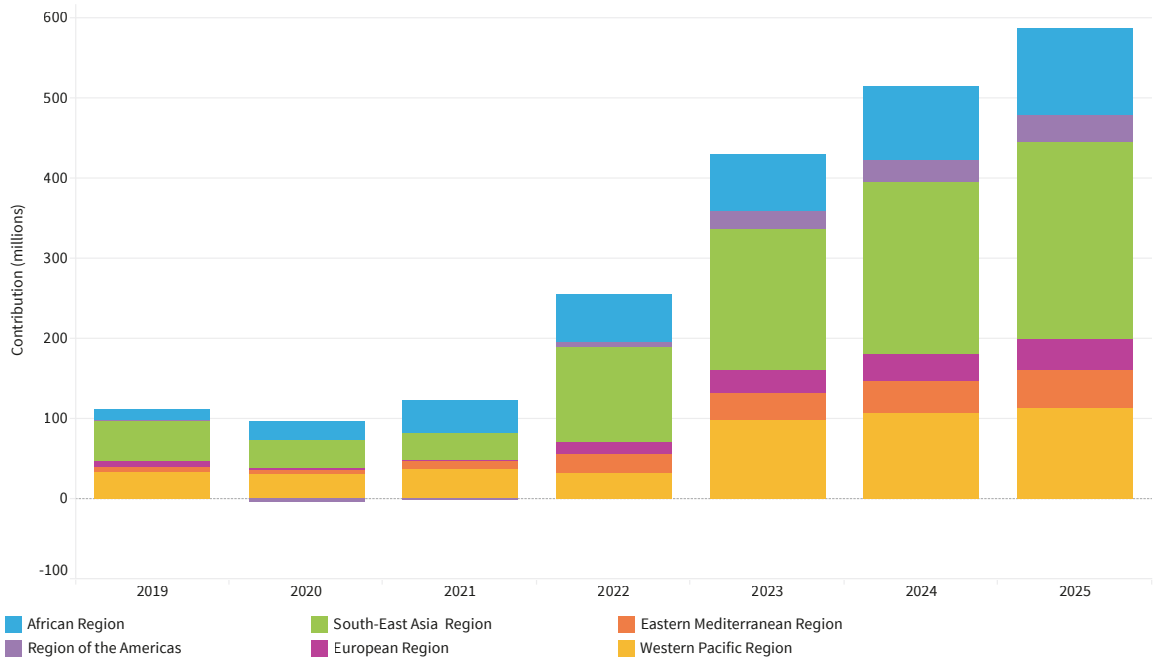
3.2 UHC billion

The UHC billion is for improvement in the number of people having access to essential health services but without inflicting financial hardship. The calculation of progress towards the UHC billion relied on the assessment of two components: (1) average service coverage measured through 14 tracer indicators, and (2) financial hardship measured through an indicator of catastrophic health spending, defined as the proportion of population whose household expenditure on health is greater than 10% of total household expenditure or income.

By 2023, there were only 429 million more people benefitting from UHC without incurring catastrophic health spending compared with 2018, not even reaching half of the UHC billion target. The projection for 2025 is a mere 585 million, suggesting that the world is seriously off the mark in achieving the UHC billion target. The impact of COVID-19 pandemic was salient, as the UHC billion reduced or stalled in 2020 and 2021 before reversing the negative trend in 2022. The situation called for accelerated efforts and dramatic changes in public policies to expand UHC *(5)*.

Among the six WHO regions, the Region of the Americas was the only region where the number of people benefitting from UHC decreased in 2020 and 2021 compared with 2018 (Fig. 3.4). The European Region also experienced setbacks in the two pandemic years, as shown by the near-zero UHC billion estimates *(5)*.

Figure 3.4 UHC billions contribution by WHO region, 2019–2025

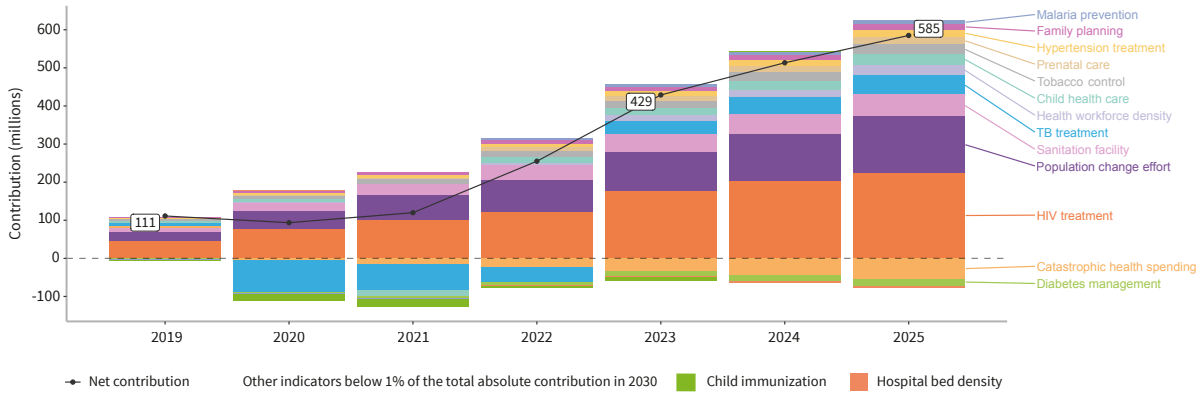


Source: WHO *(5)*.

Among the tracer indicators included in the calculation of progress for the UHC billion, receiving HIV treatment, a proxy for measuring infectious disease health care, contributed the most at global level (Fig. 3.5), the contribution of which was over 40% in both 2019 and 2023. By 2023, it had the highest share of contribution in the Region of the Americas (93.1%, UI: 73.5–110.9%), followed by the European (76.4%, UI: 61.8–88.7%), Western Pacific (63.7%, UI: 60.0–66.9%) and Eastern Mediterranean (37.1%, UI: 32.0–42.7%) regions, with the lowest share in the African (16.5%, UI: 15.3–17.6%) and South-East Asia (28.0%, UI: 24.8–31.3%) regions. By 2023, catastrophic health spending made a negative contribution to the UHC billion globally (–7.9%, UI: –8.0 to –7.8%); the magnitude was highest in the Western Pacific (–20.6%, UI: –20.8 to –20.4%) and European (–11.5%, UI: –11.6 to –11.4%) regions. Diabetes, measured by elevated plasma glucose level, contributed negatively to the UHC billion in all six regions in 2023. However, the impact was minor. Slight regression was also found in 2023 relative to 2018 with two other indicators – hospital beds density and DTP vaccination *(5)*.

By 2023, changes in health workforce density made largest negative contribution to the UHC billion in the Region of the Americas (–45.4%, UI: –45.7 to –45.0%), while making largest positive contribution in the Western Pacific Region (14.9%, UI: 14.8–15.0%). The share of TB treatment was 8.6% (UI: 3.0–18.0%) globally, with the largest share in the South-East Asia Region (16.3%, UI: 7.4–23.5%). The contribution of households using basic sanitation facilities was 10.4% (UI: 10.1–10.8%) globally, and highest in the Western Pacific Region (15.5%, UI: 14.7–16.3%). The share of reduced prevalence in tobacco use among adults was 4.2% (UI: 4.1–4.3%) globally; this was largest in the Region of the Americas (15.0%, UI: 14.8–15.1%) and the European Region (10.2%, UI: 10.1–10.3%) *(5)*.

Figure 3.5 Contribution of tracer indicators to the UHC billion, 2019–2025



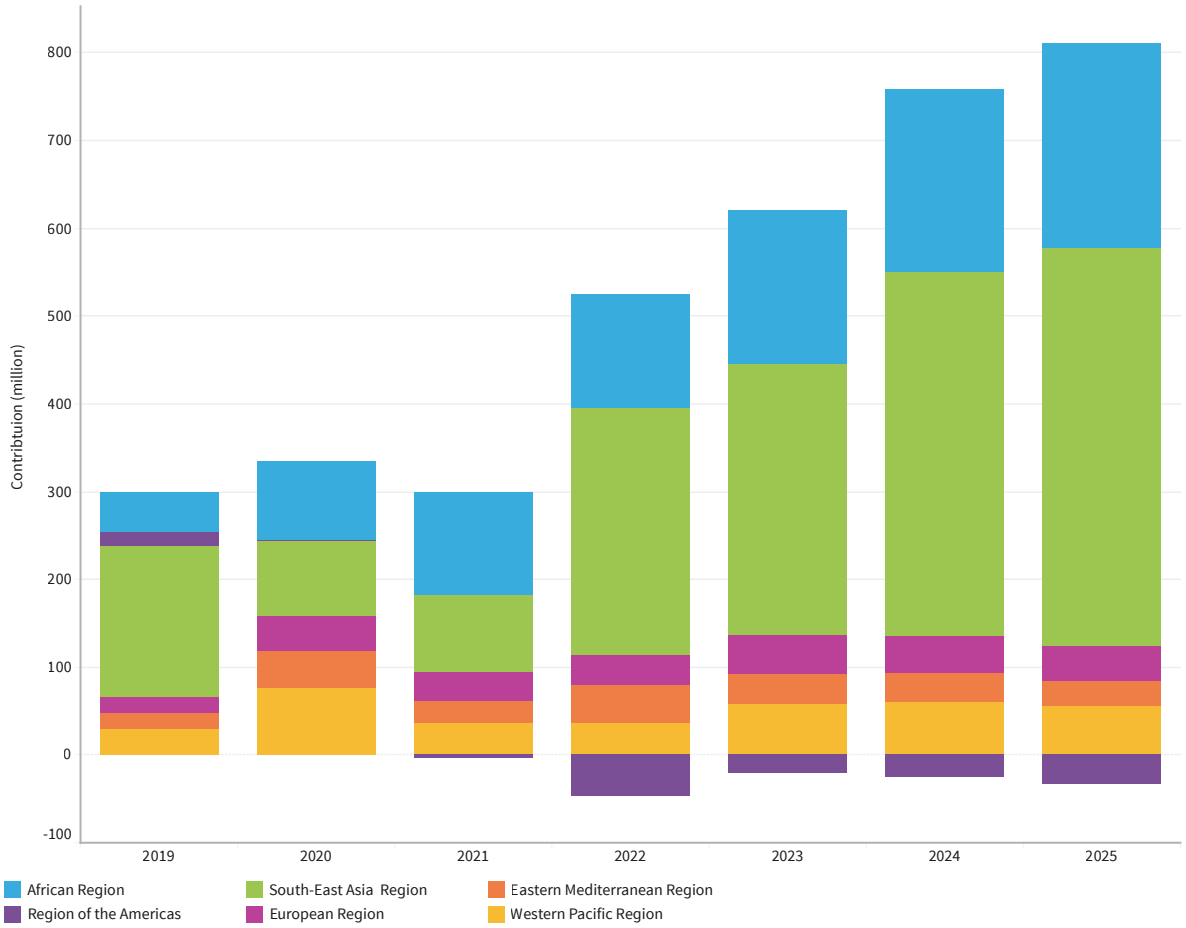
Source: WHO *(5)*.

3.3 Health emergencies protection billion

The health emergencies protection (HEP) billion aims to have one billion more people better protected from health emergencies. The index for this billion was calculated based on SDG 3 by measuring three indices: (i) emergency preparation, (ii) emergency prevention, and (iii) emergency detection and responses.

At the global level, there has been consistent improvement in the HEP billion since 2018 (Fig. 3.6). However, such progress is still not sufficient to achieve the HEP billion target by 2025. Progress towards the HEP billion even stalled or regressed in 2020 and 2021 in multiple WHO regions. The Region of the Americas saw a downward trend starting from 2020 that extended through 2023. The improvement in the HEP billion was relatively small in the Western Pacific, European and Eastern Mediterranean regions compared with other regions. Most of the improvement in the HEP billion between 2018 and 2025 will come from the WHO African and the South-East Asia regions *(5)*.

Figure 3.6 Contributions to the HEP billion by WHO region, 2019–2025



Source: WHO *(5)*.

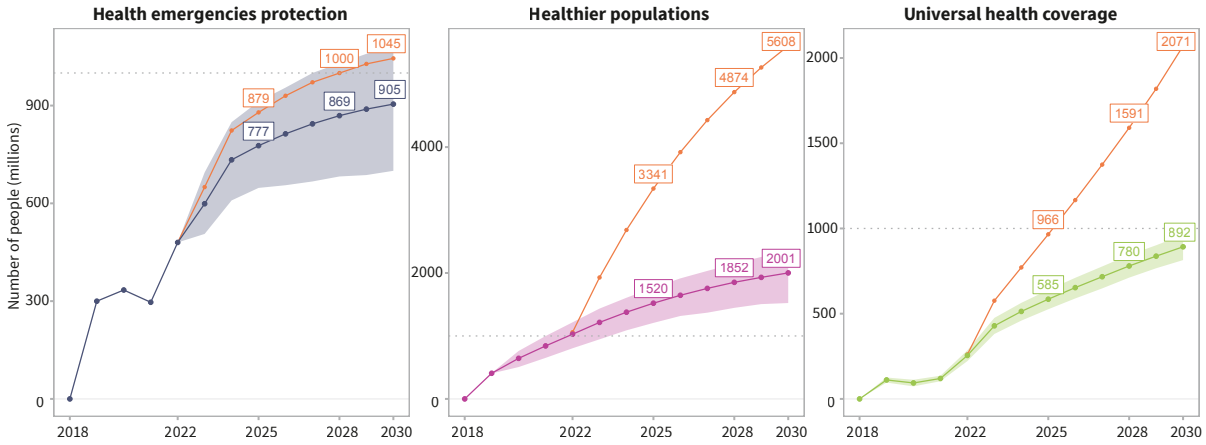
3.4 Health-related SDGs and health information system

The Triple Billion targets leverage the global and national commitments to meet the health-related SDGs. Given the centrality of the health-related SDGs in the Triple Billion target construct, the Triple Billion target projections allow WHO and its Member States to assess their progress towards the 2030 targets for SDG indicators.

The projected Triple Billion progress since 2019, the first year of the GPW13, showed that significant progress has been achieved for all three of the billions, particularly the HPOP billion as the world has likely already achieved the target of having one billion more people living healthier lives by 2023 (Fig. 3.7). However, such progress is far from sufficient to ensure the health-related SDG targets are achieved globally. Figure 3.7 illustrates the gap between Triple Billion projections based on current trends and an alternative scenario where hypothetical annualized rate of changes at the country level are applied such that each SDG indicator target is met by 2030 *(5)*.

If current trajectories hold, relative to 2018, some 1.5 billion more people will live healthier lives by 2025, and 2.0 billion by 2030. However, the figure would be 3.3 billion by 2025 and 5.6 billion by 2030 if the world meets all global indicator targets. Meeting the global targets annually would also mean 1.0 billion more people having access to essential health services without incurring catastrophic health spending by 2025 instead of 0.6 billion under the current trajectory, and an additional 0.9 billion people safeguarded against health emergencies instead of 0.8 billion *(5)*.

Figure 3.7 Triple Billion target contribution scenario by achieving health-related SDGs



Key: main line and circles: actual numbers and projections; shaded areas: confidence intervals for projections; orange lines: progress required to reach the SDG targets.

Source: WHO *(5)*.

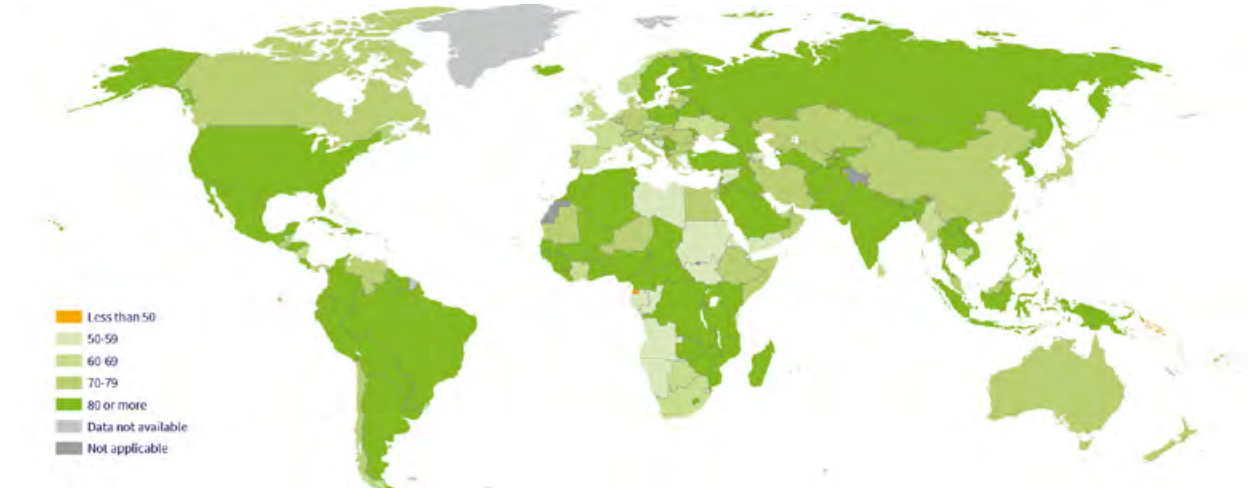
The world needs to intensify efforts to achieve the health-related SDG targets by 2030, which is vital for building healthier, more equitable and prosperous societies globally. For such efforts, timely and accurate monitoring of the progress based on robust data is vital for effective policy changes and interventions.

However, lack of timely reporting and delay in producing health estimates using the most recent empirical data could bring great challenges in delivering accurate assessment for many health outcomes.

Figure 3.8 shows the percentage of UHC service coverage index tracers for which primary data were available for years 2017–2021. It is evident that most indicators suffered from a data shortage at various degrees across countries. A lot could be done to enhance the data input for the Triple Billion computation. More often than not, the lack of data will not be limited to the data required by the Triple Billion; rather, it is deeply entrenched in poorly performing health information systems. Thus, efforts should be made to strengthen the general health information systems in countries to generate reliable data for the effective tracking of and policy changes regarding health-related SDGs.

WHO is committed to work with Member States to strengthen their system capacity to collect, analyse and use health data. Various tools have been developed by WHO to enhance countries' data capacity. For example, the WHO SCORE for health data technical package was designed to assess the performance of national health information systems, identify the data gaps and provide a toolbox to improve various areas of a functioning health information system *(7)*. The *Data management competency framework* (DMCF) developed by the WHO Regional Office for the Western Pacific is another example of such a tool; it enables health information managers to identify capacity gaps and drive competency development at various levels (Box 3.1).

Figure 3.8 **Percentage of UHC service coverage index tracers for which primary data were available for years 2017–2021**



Source: WHO and World Bank *(8)*.

Box 3.1 Strategic and integrated capacity-building of the health information workforce in the Western Pacific Region

Strategic use of data for decision-making is critical for measuring and driving progress towards global and national health indicator targets. Capacity limitations of health information workers (HIW) often hinder the ability to effectively produce and use health data, despite significant improvements in health information systems. HIWs often do not possess the required capacities to participate consistently and in a timely manner in the data management cycle. To systematically assess such capacity gaps, the WHO Regional Office for the Western Pacific, with support from WHO headquarters, country offices and in collaboration with partner organizations, launched the DMCF in May 2023 *(9)*. This framework is a comprehensive, integrated and coherent tool that can be used to define and assess current and future competency needs of HIWs across the region and beyond. This tool will enable health information managers in countries to identify capacity gaps and plan and drive the competency development of their HIWs across different levels of their health system.

Papua New Guinea has set out a clear path as the first country to adopt the framework. As a direct outcome of a national health information workshop held in October 2022, Papua New Guinea National Department of Health collaborated with WHO to establish a standardized set of competencies required for health information positions at both national and provincial levels based on the ideally required skills and competencies spelled out in the WHO DMCF. These competency profiles are invaluable as they provide a clear foundation for developing tools to assess training needs and formulating comprehensive, long-term capacity-building strategies. The national data management competency profiles were officially launched together with the Provincial Health Authority Monitoring & Evaluation toolkit in September 2023.

China followed suit by identifying the framework's value in improving health information workforce capacity in a systematic and sustainable manner. The Center for Health Statistics and Information of the National Health Commission of China collaborated with WHO in translating the framework into Chinese and conducted a series of workshops at both national and provincial levels in preparation for conducting competency gap assessments among different types of health workers across different provinces.

The adoption of the framework in Papua New Guinea and China serves as pivotal examples, highlighting how the WHO DMCF could be applied to each Member State's unique context. This ability to contextualize and apply the framework is essential, given the diverse nature of Member States' health information systems and their diverse priorities and needs in addressing both present and future health challenges.

3.5 Conclusion

The WHO Triple Billion is a framework and a strategy aiming to drive timely improvement of global health. The targets, although set at the global level, were simply the aggregation of country-level estimates that were calculated based on underlying tracer indicators. The Triple Billion projections provide WHO, its Member States and partners with the much-needed assessment of progress towards fulfilling their commitment on Triple Billion targets and the health-related SDGs. Tracer indicators are the cornerstone of the Triple Billion targets, but also a critical tool for countries to identify and prioritize strategies to enhance the health of their populations. By examining the projected contributions at indicator level, policy-makers can make informed course adjustments to achieve the SDGs set by the global community.

As the GPW13 is drawing to a close in 2025, continuous tracking of the Triple Billion targets and a proper transition from GPW13 to GPW14 is vital for WHO to ensure accountability, adaptability and efficiency in achieving the ambitious goals it set jointly with its Member States. All three levels of WHO – headquarters, regional and country offices – should make every effort to align their priorities. Through these priorities that will be reflected in the new programmatic and outcome indicators for the upcoming GPW14, WHO will reaffirm its commitment to address evolving global health needs, enhance collaboration with stakeholders and strengthen its role in advancing global health equity and security. Committed investment in improving data and health information systems across the globe will be essential for such endeavours.

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4

Key issues and trends in global health

The global population and economic growth, the advancement of science and technology, and the ever-increasing interconnectedness of the world have brought about enormous societal changes along with unprecedented progress, but also multiple and complex challenges affecting the health of billions of people worldwide. This chapter looks at selected key global health issues, such as the double burden of malnutrition, where undernutrition coexists in parallel with overweight and obesity globally. It also highlights the health challenges faced by persons with disabilities, and refugees and international migrants.

4.1 The double burden of malnutrition

Combating malnutrition in all its forms is one of the greatest global health challenges. Today, the world faces the double burden of malnutrition, characterized by the coexistence of undernutrition along with overweight and obesity within individuals, households and populations, and across the life course. This section highlights the global and regional trends in the population-level burden of stunting, wasting and overweight among children under 5 years of age, and the double burden of thinness or underweight and obesity among older children, adolescents and adults. Box 4.1 summarizes the definitions of the indicators of malnutrition used in this section.

Child stunting stems from poor nutrition during pregnancy and early childhood. It can lead to severe physical and cognitive damage that may last a lifetime. A child who is moderately or severely wasted (due to recent rapid weight loss or a failure to gain weight) has an increased risk of death. In contrast, a child may be overweight due to excessive caloric intake, which may be due to poor access to nutritious foods, consumption of nutrient-poor ultra-processed foods and/or inadequate physical activity.

In childhood and adolescence, obesity is associated with greater risks and earlier onset of various NCDs, such as type 2 diabetes and cardiovascular disease. In addition, children and teenagers living with obesity may experience psychosocial consequences from stigma, discrimination and bullying. Undernutrition, as measured by thinness among children aged 5–19 years, lowers learning potential, weakens the immune system, and increases the risk of morbidity and mortality. Micronutrient deficiencies and anaemia in adolescent girls amplify the risk of life-threatening complications during pregnancy and childbirth.

In adults, obesity is associated with increased risk of morbidity and mortality from a variety of NCDs, such as cardiovascular diseases, diabetes, cancers, neurological disorders, chronic respiratory diseases and digestive disorders. Undernutrition in adults, as captured by the underweight indicator, is critical for adult women during pregnancy, with repercussions for both mother and child. In older adults, undernutrition can lead to increased risk of impaired immune response, and physical and cognitive impairment. In turn, ageing brings physiological changes with sensory impairment, poor oral health, isolation, loneliness and depression, which further exacerbate the risk of undernutrition.

Box 4.1 Definitions of metrics and measures used in this section

For children under 5 years of age:

- Stunting: height-for-age lower than 2 standard deviations below WHO Child Growth Standards median
- Wasting: weight-for-height lower than 2 standard deviations below WHO Child Growth Standards median
- Overweight: weight-for-height greater than 2 standard deviations above WHO Child Growth Standards median.

For children and adolescents aged 5–19 years:

- Thinness: BMI-for-age lower than 2 standard deviations below the WHO Growth Reference median
- Obesity: BMI-for-age greater than 2 standard deviations above the WHO Growth Reference median.

For adults aged 18 years and older:

- Underweight: BMI less than 18.5
- Obesity: BMI greater than or equal to 30.

BMI: body mass index, calculated as weight (kg)/height^2 (m^2).

Crude prevalence is used for children and adolescents aged 0–19 years, and age-standardized prevalence is used for adults aged 18 years and older.

4.1.1 The magnitude of the problem

In 2022, an estimated 148 million (UI: 144–152 million) children under 5 years of age globally were affected by stunting (too short for age) and 45 million (UI: 36–54 million) were affected by wasting (too thin for height), revealing the vast extent of undernutrition among the youngest population. However, an estimated 37 million (UI: 34–41 million) children under 5 years of age were overweight in 2022 *(1)*.

In the same year, among older children and adolescents aged 5–19 years, an estimated 190 million (UI: 180–200 million) were living with thinness, while 160 million (UI: 150–170 million) were living with obesity. Among adults aged 20 years and older, an estimated 350 million were underweight, while 880 million were living with obesity. This means that over one billion people aged 5 years and older worldwide are living with obesity, while over half a billion others are living with underweight or thinness *(2)*.

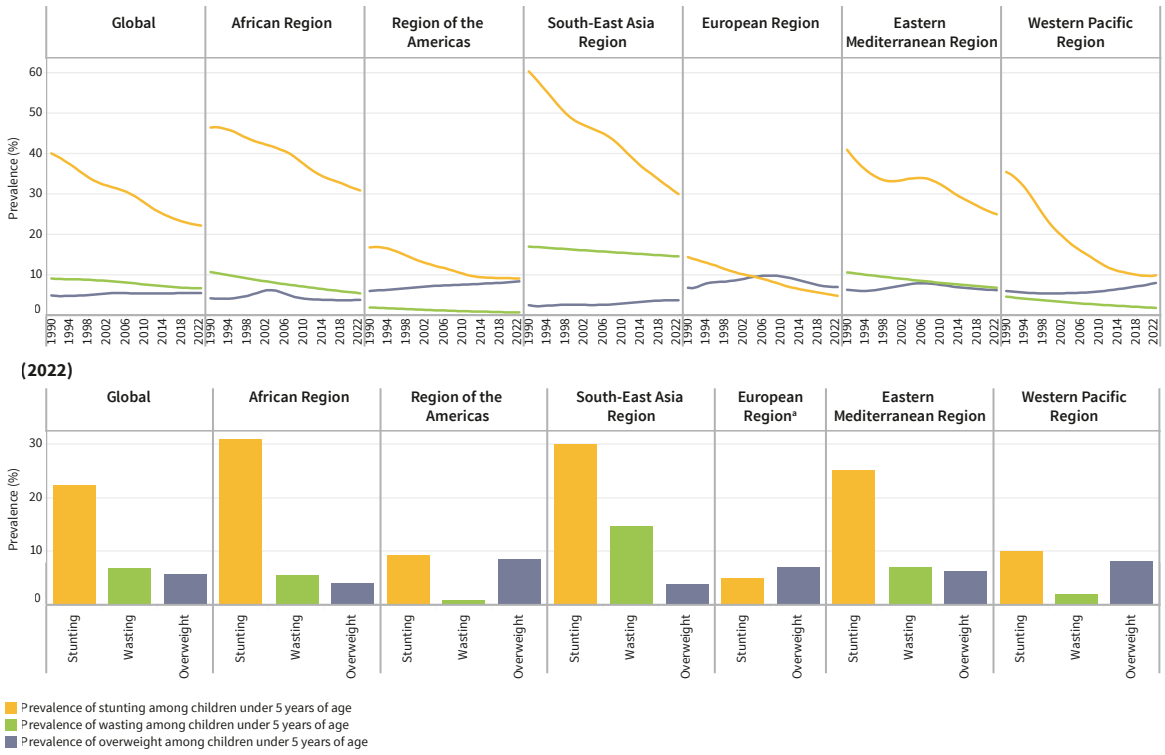
These numbers, along with the health implications described above, indicate that the world is dealing with a public health problem not only at a massive scale but also a complex one.

4.1.2 Stunting, wasting and overweight among children under 5 years of age

Undernutrition among children under 5 years of age globally, as reflected by the number affected by stunting and wasting, has declined in the past three decades. The number affected by stunting declined from 259 million (UI: 252–266 million) in 1990 to 148 million (UI: 144–152 million) in 2022. Over the same period, the number affected by wasting declined from 59 million (UI: 54–64 million) to 45 million (UI: 36–54 million), and the number of overweight rose from 32 million (UI: 30–35 million) to 37 million (UI: 34–41 million) *(1)*.

The global prevalence of stunting (SDG indicator 2.2.1) almost halved from 40.2% (UI: 39.1–41.3%) in 1990 to 22.3% (UI: 21.8–22.9%) in 2022, and the prevalence of wasting (SDG indicator 2.2.2) declined by 26%, from 9.2% (UI: 8.4–10.0%) to 6.8% (UI: 5.5–8.1%). However, the prevalence of overweight (SDG indicator 2.2.2) increased by 12% from 5.0% (UI: 4.6–5.4%) to 5.6% (UI: 5.1–6.1%) during the same period (Fig. 4.1) *(1)*.

Figure 4.1 Prevalence of stunting, wasting and overweight among children under 5 years of age, globally and by WHO region, 1990–2022



[a] No data for wasting for European region.

Source: WHO et al. *(1)*.

At this pace of change, the world is off-track to meet the 2030 global targets to halve the number of children under 5 years of age affected by stunting (from the 2012 baseline) and to reduce the prevalence of wasting and overweight to less than 3% *(1, 3)*.

Almost all WHO regions are experiencing a considerable burden of both undernutrition (in the form of stunting and wasting) and overweight among the youngest population. In the South-East Asia Region, the prevalence of overweight nearly doubled in the past three decades, reaching 3.8% (UI: 3.1–4.6%) in 2022, while the prevalence of wasting continued to be the highest across all WHO regions despite having declined from 17.1% (UI: 13.6–21.3%) in 1990 to 14.7% (UI: 11.0–19.3%) in 2022. This means that in 2022 almost one in five (18.5%) children in this region were either too thin or too heavy for their height. In addition, three out of 10 (30.1%, UI: 28.3–32.0%) children were affected by stunting, even though its prevalence had halved since 1990 when it stood at 60.5% (UI: 57.5–63.5%) (Fig. 4.1) *(1)*.

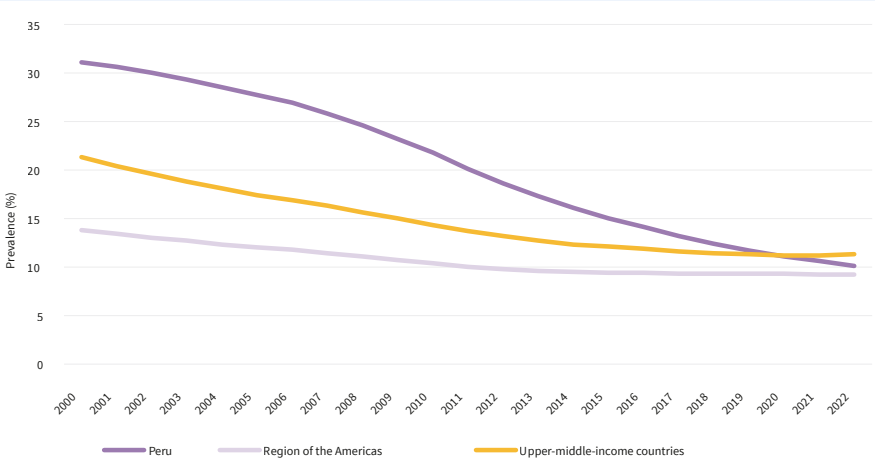
In the Eastern Mediterranean Region, approximately the same proportion of children were affected by wasting (6.9%, UI: 5.4–8.7%) and overweight (6.3%, UI: 5.2–7.7%) in 2022, while a quarter (25.1%, UI: 23.4–26.8%) of all children under 5 years of age were affected by stunting. The Region of the Americas had the highest prevalence of overweight (8.5%, UI: 7.4–9.7%) across all WHO regions in 2022, and very low prevalence of wasting (0.8%, UI: 0.3–1.9%). However, about one in 11 (9.2%, UI: 8.7–9.6%) children in this region were affected by stunting that year (Fig. 4.1). Peru is notable, both regionally and globally, for a massive reduction in stunting prevalence (Box 4.2) *(1)*.

Box 4.2 A dramatic reduction in childhood stunting in Peru

Since 2000, few countries have reduced the prevalence of stunting among children under 5 years of age as dramatically as Peru. It is estimated to have declined from a very high prevalence of 31.1% (UI: 29.4–32.8%) in 2000, to 10.1% (UI: 9.5–10.8%) in 2022, which is considered a medium prevalence. The ARR (5.5% per year) substantially surpasses that in the Region of the Americas (2.0% per year) as well as in the upper-middle-income countries (3.1% per year) (Fig. 4.2) *(1)*.

An analysis of drivers of the decline in stunting prevalence in Peru from 2000 to 2016 identified multiple determinants of stunting reduction, including socioeconomic class, parental education, parental health, and differences in maternal and newborn health care. Reducing the equity gap contributed greatly to this reduction, with the greatest reductions observed in the lowest wealth quintile, in rural areas and among children with the least-educated mothers. The slope index of inequality, a measure of absolute wealth-related inequality, indicates that the gap in stunting prevalence among children under 5 years of age between the richest and poorest households reduced by half between 2000 and 2016, leading to greater equity. Peru's experience offers useful lessons in tackling the problem of stunting with the participation of multiple sectors *(4)*.

Figure 4.2 Prevalence of stunting among children under 5 years of age in Peru, WHO Region of the Americas, and upper-middle-income countries, 2000–2022



Source: WHO et al. *(1)*.

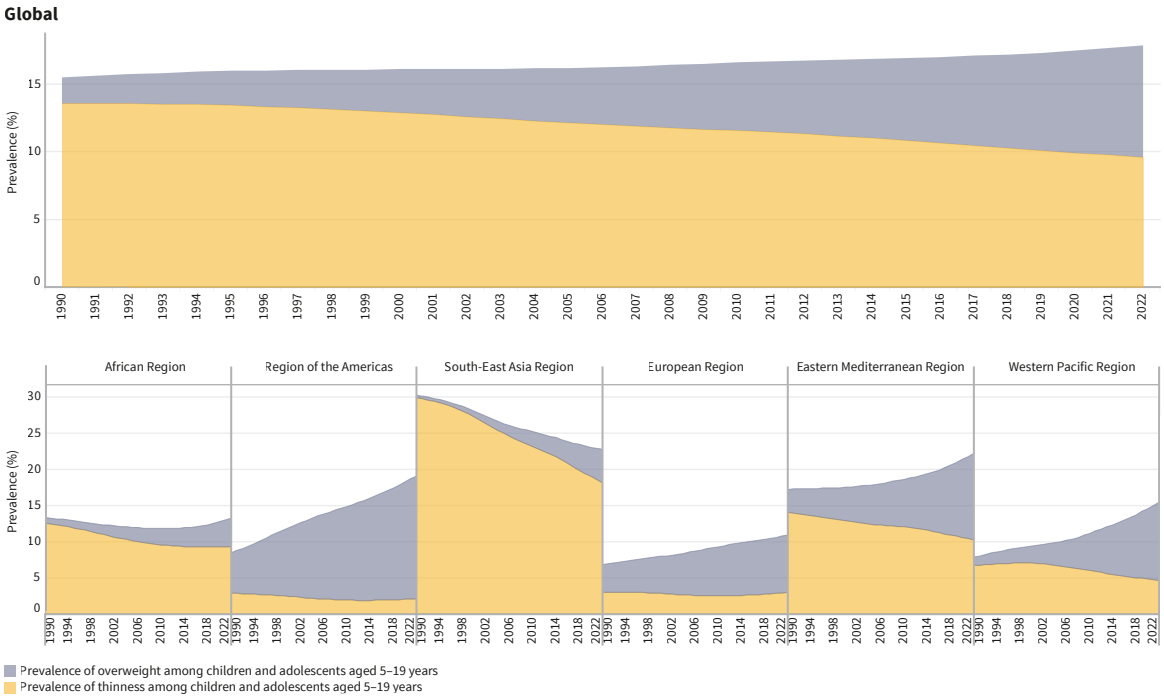
4.1.3 Thinness and obesity among children and adolescents aged 5–19 years

Globally in 1990, an estimated 220 million (UI: 210–230 million) children and adolescents aged 5–19 years were living with thinness and 31 million (UI: 29–34 million) were living with obesity. In 2022, the corresponding numbers were 190 million (UI: 180–200 million) and 160 million (UI: 150–170 million). This means that from 1990 to 2022, the numbers of children and adolescents in this age group living with obesity increased by 130 million, while the number living with thinness decreased by just 30 million *(2)*.

Globally, the estimated combined prevalence of thinness and obesity among children and adolescents aged 5–19 years increased from 15.5% in 1990 to 17.8% in 2022. Thinness was dominant in the double burden of malnutrition in this age group in 1990, with a prevalence of 13.5% (UI: 12.9–14.2%) (compare obesity: 1.9%, UI: 1.8–2.1%). Obesity prevalence quadrupled to reach 8.2% (UI: 7.7–8.8%) in 2022, only slightly lower than the prevalence of thinness in that year (9.6%, UI: 8.9–10.3%) (Fig. 4.3) *(2)*.

Among WHO regions, the Region of the Americas saw the largest increase in the double burden of malnutrition among children and adolescents aged 5–19 years since 1990. This was driven by the rise in obesity, which tripled to 17.0% (UI: 15.6–18.3%) in 2022, while thinness prevalence decreased only slightly from 2.9% (UI: 2.5–3.5%) to 2.1% (UI: 1.9–2.4%). The Western Pacific Region also experienced a large increase in the double burden, as the obesity prevalence increased almost tenfold to reach 10.8% (UI: 9.1–12.7%) in 2022, largely overtaking the dominance of thinness. The South-East Asia Region was the only region where the double burden decreased, as thinness prevalence fell sharply from 29.9% (UI: 28.1–31.7%) to 18.2% (UI: 16.3–20.1%); however, the region continued to have the highest thinness prevalence while obesity prevalence increased at an alarming rate from 0.3% (UI: 0.3–0.5%) in 1990 to 4.6% (UI: 3.9–5.5%) in 2022 (Fig. 4.3) *(2)*.

Figure 4.3 Prevalence of thinness and overweight among children and adolescents aged 5–19 years, globally and by WHO region, 1990–2022



Source: NCD Risk Factor Collaboration *(2)*.

4.1.4 Underweight and obesity among adults aged 18 years and older

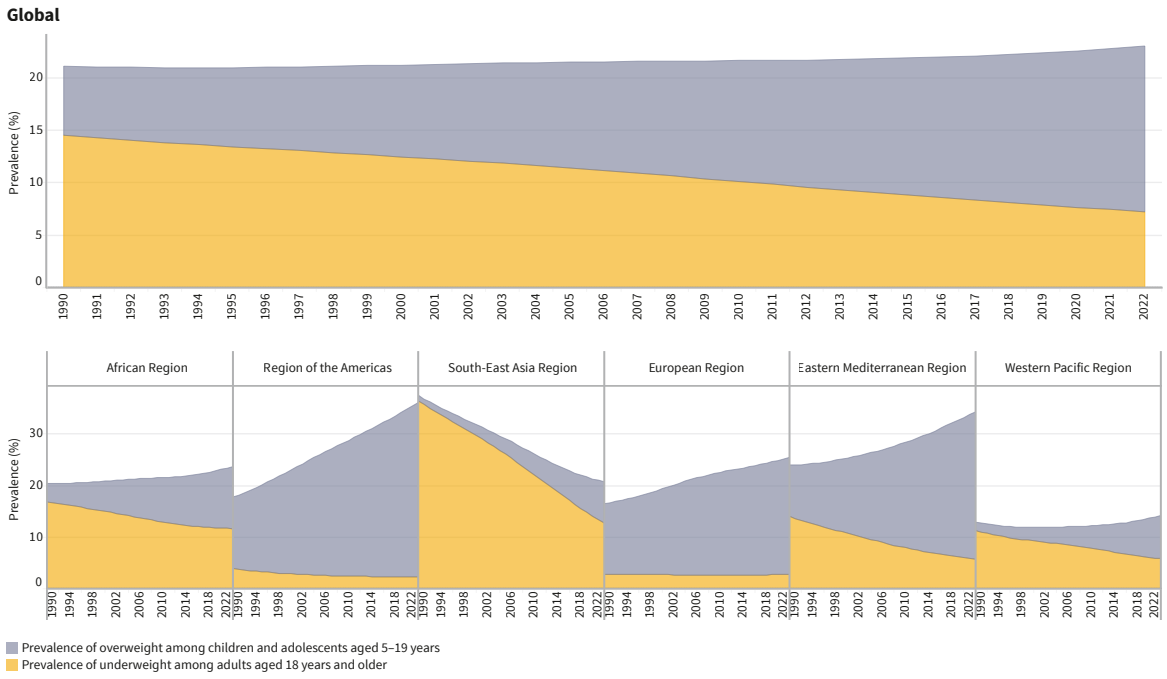
In 1990, globally an estimated 490 million (UI: 470–500 million) adults aged 18 years and older were living with underweight, while 200 million (UI: 190–200 million) were living with obesity. Between 1990 and 2022, the number of adults aged 18 years and older living with obesity increased dramatically by almost 700 million, reaching 890 million (UI: 870–920 million), while the number living with underweight decreased by 90 million to 400 million (UI: 370–420 million) *(2)*.

Globally, the combined age-standardized prevalence of underweight and obesity among adults aged 18 years and older increased from 21.1% in 1990 to 23.0% in 2022. This increase has been driven by the rise in obesity, the age-standardized prevalence of which more than doubled from 6.6% (UI: 6.4–6.8%) in 1990 to 15.8% (UI: 15.4–16.2%) in 2022. The age-standardized prevalence of underweight halved in the same period, from 14.5% (UI: 14.1–15.0%) in 1990 to 7.2% (UI: 6.8–7.7%) in 2022. This means that obesity has taken over the dominance in the double burden of malnutrition among adults globally in the past three decades (Fig. 4.4) *(2)*.

Obesity prevalence among adults aged 18 years and older increased in all WHO regions. The Region of the Americas and the Eastern Mediterranean Region have experienced the largest absolute increase in obesity prevalence since 1990, leading to the highest obesity prevalence across WHO regions in 2022, affecting one third of adults in the Region of the Americas and almost three in 10 in the Eastern Mediterranean Region. In the European Region, the 8.9 percentage point increase in the double burden was due entirely to the rise in obesity prevalence, as thinness prevalence remained low. About half of the double burden in the African Region was due to obesity in 2022, up from about one fifth in 1990. The Western Pacific Region remained the region with the lowest combined prevalence of underweight and obesity among adults, but obesity is becoming dominant. Underweight prevalence decreased markedly in the South-East Asia Region from 36.5% (UI: 35.0–37.9%) in 1990 to 12.7% (UI: 11.5–14.0%) in 2022, driving the only decrease of the double burden among adults across all WHO regions. However, underweight remained highly prevalent among adults, while obesity prevalence increased eightfold since 1990 to reach 8.0% (UI: 7.4–8.6%) in 2022 (Fig. 4.4) *(2)*.

Obesity prevalence tends to differ among men and women, and this difference also varies across regions and over time. Box 4.3 highlights the sex-related inequalities globally and by WHO region since 1990.

Figure 4.4 Prevalence of underweight and obesity among adults aged 18 years and older, globally and by WHO region, 1990–2022



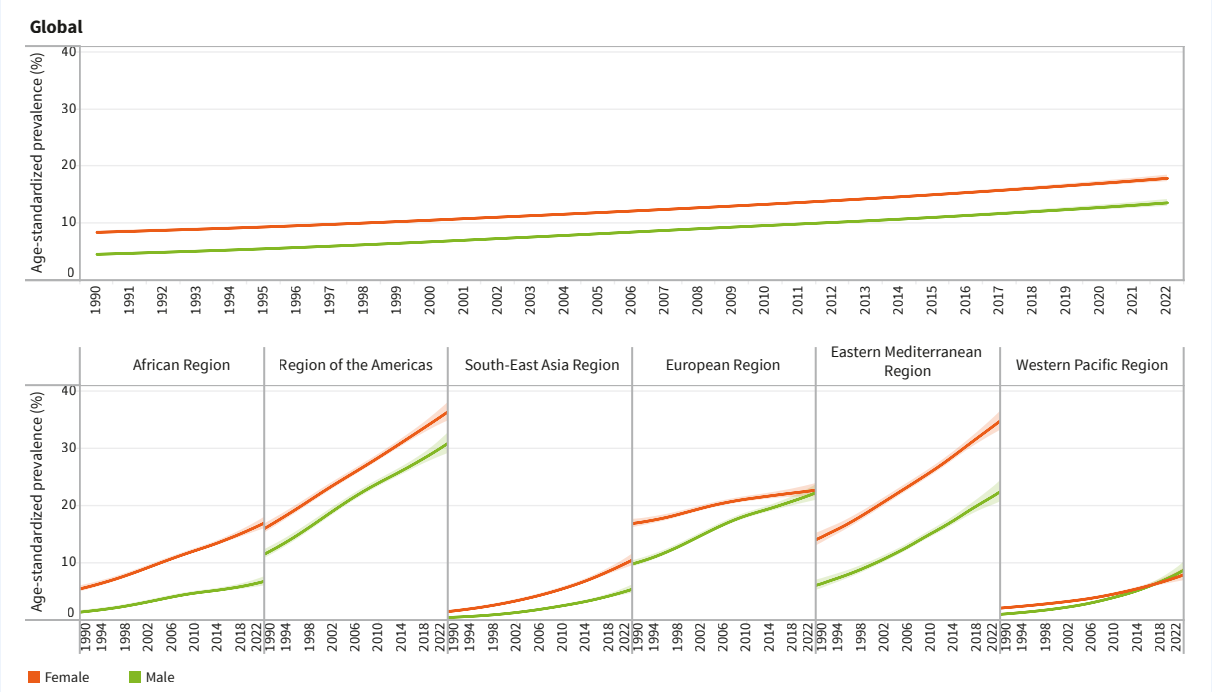
Source: NCD Risk Factor Collaboration *(2)*.

Box 4.3 Sex-related inequalities in the prevalence of obesity among adults

Globally, between 1990 and 2022, age-standardized obesity prevalence among adults aged 18 years and older increased steadily among both men and women, with continuously higher obesity prevalence among women than men. In 2022, obesity prevalence among women was a third or 4.3 percentage points higher among women (17.9%; UI: 17.3–18.5%) than among men (13.6%; UI: 13.0–14.2%) (Fig 4.5) *(2)*.

Different patterns are observed across the six WHO regions. The Region of the Americas and the Eastern Mediterranean Region demonstrated large increases in obesity prevalence among both men and women. The Eastern Mediterranean Region consistently demonstrated the largest absolute sex-related inequalities in obesity over the past three decades (difference of 12.4 percentage points between women and men in 2022). In the African and South-East Asia regions, obesity prevalence increased faster among women than men, leading to an increase in sex-related absolute inequalities over time (differences of 10.2 and 5.1 percentage points between women and men in the African and South-East Asia regions in 2022, respectively). Conversely, in the European and Western Pacific regions, obesity prevalence increased faster among men than women leading to no sex-related inequalities in 2022 (Fig 4.5) *(2)*.

Figure 4.5 Age-standardized obesity prevalence among adults aged 18 years and older, by sex, globally and by WHO region, 1990–2022



Shaded areas represent 95% uncertainty intervals.

Source: NCD Risk Factor Collaboration *(2)*.

4.1.5 Double-duty actions to tackle the double burden of malnutrition

The coexistence of undernutrition, overweight and obesity can be addressed by taking advantage of the shared drivers across forms of malnutrition, including biological, environmental and social factors, to design and implement policies and programmes using a life-course, multi-generational approach. These double-duty actions are evidence-based, efficient and effective interventions that can make the most of often limited time, fiscal and human resources. Common delivery platforms that can be leveraged for double-duty actions include national dietary guidelines, health systems, urban food systems, humanitarian settings and social policies *(5–7)*.

Double-duty actions need not necessarily be new actions. Rather, policy-makers can capitalize on existing government buy-in and resources, by reviewing and refocusing existing food and agriculture policies. They often already exist to address single forms of malnutrition, but need to be refocused to address multiple forms simultaneously. Strong opportunities for double-duty actions include the following examples: school feeding programmes that focus only on addressing undernutrition or overweight can be redesigned to ensure that they instead provide and promote a healthy diet; scaling up the WHO antenatal care recommendations; protecting and promoting breastfeeding; revising complementary feeding guidelines and educating care-givers on the risks of unhealthy complementary foods; designing social support and welfare programmes to reduce risks from unhealthy foods; and ensuring that food systems and food environment policies facilitate the purchase and consumption of a healthy diet by increasing access to and attractiveness of nutritious foods.

Nutrition and food safety are closely interlinked and essential for achieving positive health outcomes from food systems. There is a linkage between subclinical infection with enteropathogens and stunting *(8, 9)*. Food must be safe, available, accessible, nutritious, culturally acceptable and ingested regularly to ensure growth, health and well-being. Unsafe food increases infection and intoxication, creating a vicious cycle of disease, malnutrition and disability, particularly affecting vulnerable groups.

4.2 Disability-related health inequities

Disability results from the interaction between health conditions and/or impairments that a person experiences, such as dementia, blindness or spinal cord injury, and a range of contextual factors related to different environmental and personal factors including societal attitudes, access to infrastructure, discriminatory policies, poverty, age and gender. This understanding of disability is grounded in the WHO *International classification of functioning, disability and health* (ICF), published in 2001 *(10)*.

According to the WHO *Global report on health equity for persons with disabilities*, approximately 1.3 billion persons in 2021 – about 16% of the global population – had disability. The global number of persons with disabilities has increased substantially in the past decade due to demographic and epidemiological changes such as population growth and the increase in the number of persons with NCDs who are living longer and ageing with limitations in functioning *(11)*.

Persons with disabilities often experience health inequities due to avoidable, unjust and unfair conditions. They die younger, have poorer health and increased disease risk, and more limitations in their everyday functioning. The contributing factors to these inequities can be (i) health-system-related factors, such as barriers in physical infrastructure and communication, negative attitudes by health workers or lack of disability data in the health information system; (ii) structural factors, such as stigma and discrimination; (iii) social determinants, such as poverty and lack of education; and (iv) disease risk factors such as tobacco consumption and obesity.

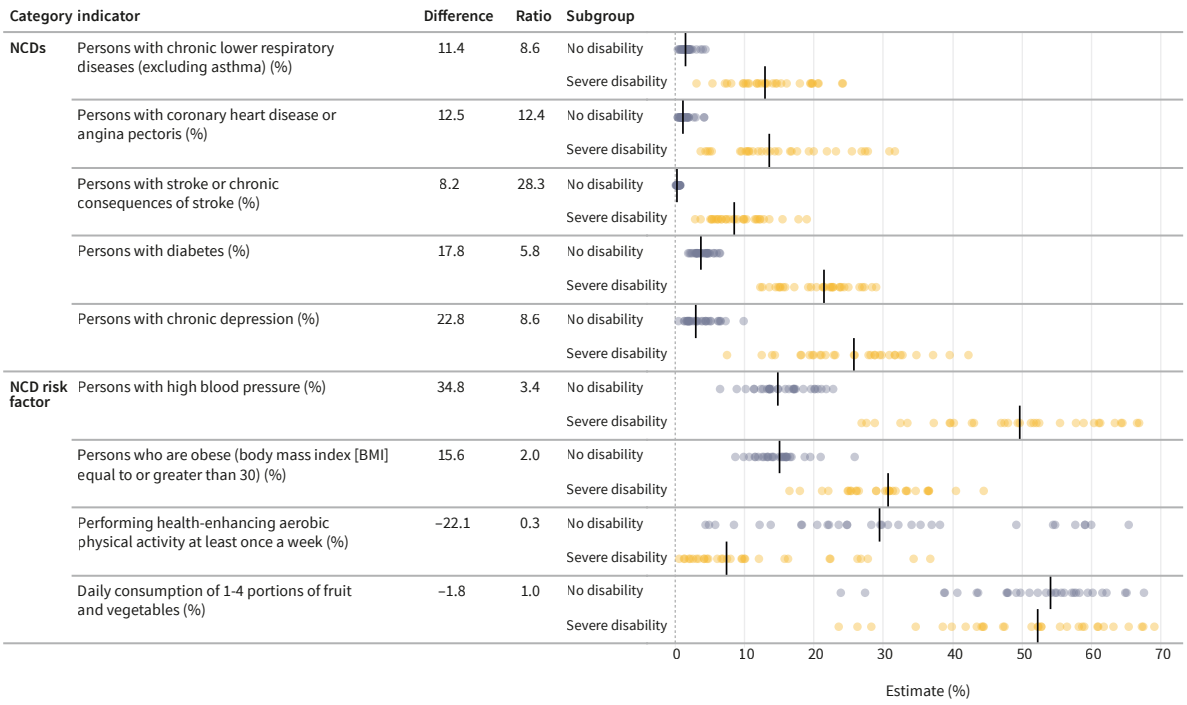
4.2.1 Premature mortality among persons with disabilities

Data on health inequities in terms of premature mortality among persons with disabilities are scarce. However, a growing body of evidence indicates that persons with disabilities have higher rates of premature mortality compared with persons without disabilities *(11)*. A systematic review of 70 studies from 22 low- and middle-income countries found that persons with disabilities have double the mortality rates of persons without disabilities *(12)*. Premature mortality is even more visible in those that are most marginalized among persons with disabilities. For example, evidence from some high-income European countries shows that persons with psychosocial or intellectual disabilities have higher risks of premature mortality compared with the general population *(13–16)*. The COVID-19 pandemic exacerbated this pattern. A systematic review of 56 studies found that persons with disabilities were almost three times as likely to die from COVID-19 than persons without disabilities *(17)*.

4.2.2 Poorer health and higher disease risk among persons with disabilities

Persons with disabilities have in general poorer health and higher risk of developing secondary health conditions *(11)*. Data from across 31 European countries collected via the European Health Interview Survey in 2019 show that, overall, compared with persons without disability, persons with severe disability are more likely to report having NCDs, including chronic respiratory diseases (over eight times as likely), coronary heart disease or angina pectoris (12 times as likely); stroke (28 times as likely); diabetes (almost six times as likely); and depression (over eight times as likely). The gap in the self-reported morbidity between persons with and without disability varies greatly across the 31 European countries, but morbidity remains consistently higher among persons with disabilities (Fig. 4.6) *(18)*.

Figure 4.6 Inequality in self-reported NCDs and risk factors between persons with severe disability and persons with no disability across 31 European countries, 2019



Notes: circles indicate countries – each country is represented by multiple circles (one for each indicator and each subgroup). Vertical black lines indicate the median value (middle point of estimates). "Difference" is the difference between the median estimate values for persons with severe disability and persons with no disability. "Ratio" is the ratio between the median estimate values for persons with severe disability and persons with no disability. The indicators are based on self-reported chronic conditions or risk factors in 12 months prior to the survey.

Source: Authors' analysis of data from the European Health Interview Survey 2019 *(18)*.

4.2.3 Contributing factors to health inequities among persons with disabilities

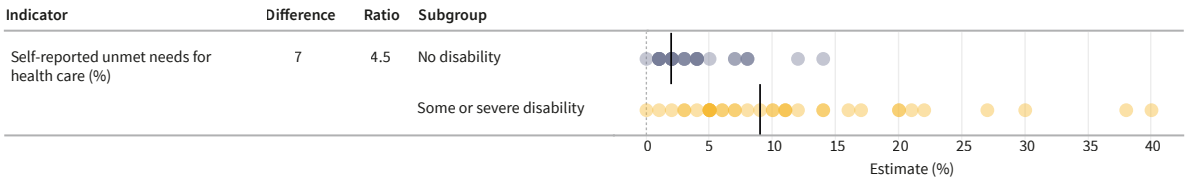
There is a range of contributing factors within and beyond the health system that drive premature mortality and increased morbidity among persons with disabilities. In terms of health-system factors, lack of accessible and inclusive health service provision often leaves persons with disabilities behind. A systematic review of 29 studies from eight high-income countries found that women with disabilities are 22% less likely to have been screened for breast cancer and 33% less likely to have been screened for cervical cancer than their non-disabled peers *(19)*. Data from Multiple Indicator Cluster Surveys in 28 countries show that children with disabilities are generally at greater risk of missing out on vaccinations: only 44% of children aged 24–35 months with more than one functional difficulty are fully vaccinated, compared with 58% of children at the same age without disabilities *(20)*.

Evidence from 37 countries shows that persons with disabilities have lower access to health services than those without disabilities (Fig. 4.7). Across these countries, the median estimate shows that persons with disabilities are more than four times as likely as persons without disabilities to be unable to get health care when they need it: 9% of persons with disabilities versus 2% of persons without disabilities indicated that they needed but could not get health care. In eight countries, more than 20% of persons with disabilities were not able to get health care when they needed it *(21, 22)*. In European countries, costs of services, geographical location and long waiting lists, which disproportionately affect persons with disabilities, are major factors in the lower access to health services.

Beyond health-system factors, persons with disabilities are also more likely to have risk factors for ill health. Data from 31 European countries show that, compared with persons without disabilities, persons with severe disabilities are overall three times as likely to self-report having high blood pressure, twice as likely to be obese and a third as likely to do regular aerobic physical activity (Fig. 4.6) *(18)*. Very often, the reason for the higher risk factor presence in persons with disabilities is the lack of accessible health promotion and prevention strategies, which do not allow this population to benefit equally *(11)*.

Different social determinants also play an important role as factors that drive health inequities among persons with disabilities. Poverty is a solid example to demonstrate this. Poor living conditions and social exclusion add to the risk of poor health and unmet health-care needs among persons with disabilities. Across 36 European countries, 77.7% of persons with severe disabilities were at risk of poverty before social transfers (such as benefits, allowances and pensions), compared with 35.2% of persons with no disability. Yet even after social transfers, poverty risk is still double among persons with disabilities (24.4%, compared with 13.4%) (Fig. 4.8). In nine countries, there was little or no disability-related inequity in poverty risk (≤ 5 percentage points difference), yet in the remaining countries the gap ranged up to 35.7 percentage points *(18, 21)*.

Figure 4.7 Percentage of persons who needed but could not get health care, by disability status, in 37 countries, 2015–2021



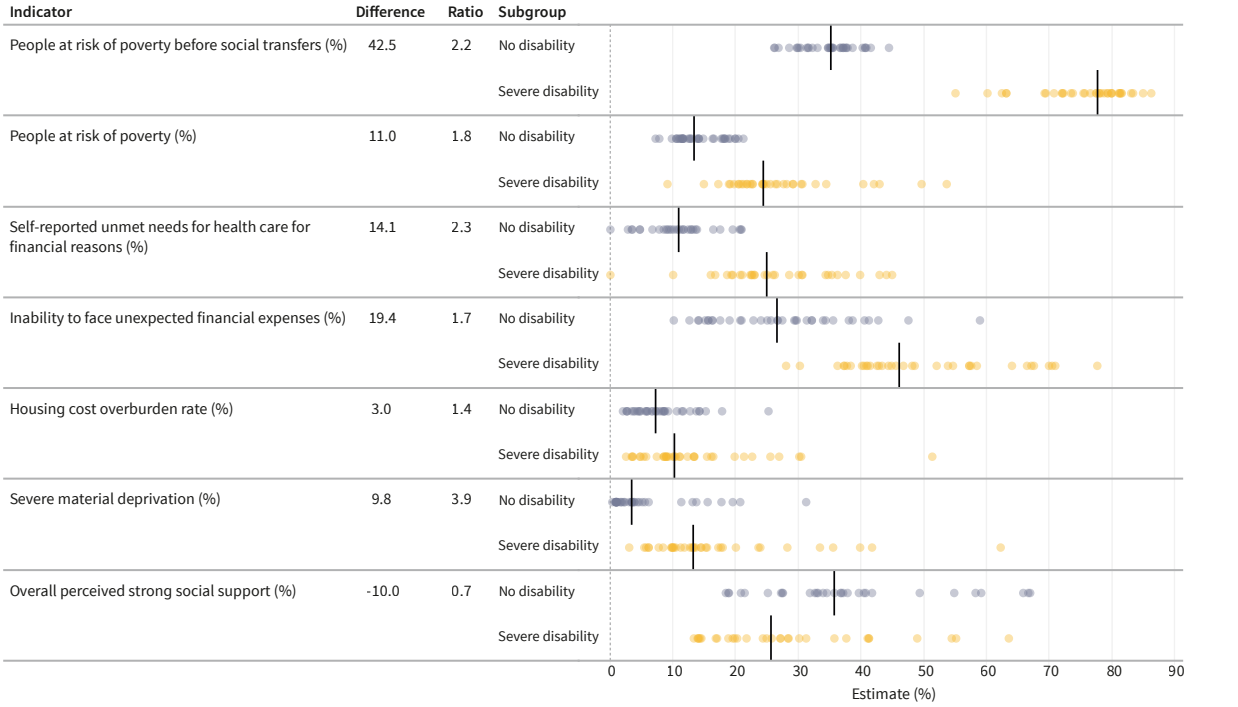
Notes: circles indicate countries – each country is represented by multiple circles (one for each indicator and each subgroup). Vertical black lines indicate the median value (middle point of estimates). "Difference" is the difference between the median estimate values for persons with disability and persons with no disability. "Ratio" is the ratio between the median estimate values for persons with disability and persons with no disability.

Source: Authors' analysis of data from the European Union Statistics on Income and Living Conditions 2021 and WHO Model Disability Survey 2015–2021 *(21, 22)*.

Poverty affects the state of health of persons with disabilities – through inability to afford health-related expenses, overcrowded and poor living conditions that contribute to the spread of diseases, poor mental health, and social exclusion, among other factors. According to the analysis from 36 European countries, persons with severe disability are overall twice as likely to report having unmet health-care needs due to financial limitations than persons with no disability. They are also almost twice as likely to be unable to meet unexpected financial expenses (e.g. having surgery or repairing their house), more likely to be overburdened by housing costs and four times as likely to be living in conditions with severe material deprivation (Fig. 4.8). Gaps in formal social support mechanisms may mean that persons with disabilities are reliant on family members for support to engage in health activities and support for their mental health; yet the proportion of persons who felt they had strong social support was overall 10 percentage points lower among persons with severe disabilities *(18, 21)*.

Evidence also suggests that, compared with persons without disabilities, persons with disabilities are at greater risk of violence, including IPV,[1] but significant data gaps remain. Box 4.4 briefly discusses this issue.

Figure 4.8 Inequality in health determinants between persons with severe disability and persons with no disability across 36 European countries, 2018–2022



Notes: circles indicate countries – each country is represented by multiple circles (one for each indicator and each subgroup). Vertical black lines indicate the median value (middle point of estimates). "Difference" is the difference between the median estimate values for persons with severe disability and persons with no disability. "Ratio" is the ratio between the median estimate values for persons with severe disability and persons with no disability.

Source: Authors' analysis of data from the European Health Interview Survey 2019 and the European Union Statistics on Income and Living Conditions 2018–2022 *(18, 21)*.

[1] SDG indicator 5.2.1. See section 2.2.5 for global data.

Box 4.4 Intimate partner violence against women with disabilities

A systematic review of 26 studies, mainly from high-income countries, concluded that the prevalence of all forms of IPV (including physical, psychological/emotional, sexual and financial) was higher among women with disabilities than among women without disabilities *(23)*. Evidence is also emerging from low- and middle-income countries. For example, analysis of data from seven violence-prevention programmes in low- and middle-income countries indicated that women with disabilities were nearly twice as likely to report past-12-month IPV than women without disabilities *(24)*.

Current estimates are likely significant underestimates, as women with disabilities tend to be underrepresented in surveys and may also experience disability-specific types of violence that are often unmeasured. For a better understanding of the risk factors for violence against women, and to enable the development of more specialized prevention strategies and response plans, it is necessary to improve the inclusion of women with disabilities and the issue of disability within violence against women in population-based surveys and research. WHO recently issued recommendations for good practice in measuring violence against women with disabilities *(25)*.

4.2.4 Towards disability-inclusive and data-informed health systems

The way forward to achieve inclusive health systems and leave no one behind includes a systems-level response, through strengthening health systems, that integrates targeted actions to advance health equity for persons with disabilities. It is essential that the actions that governments take to advance disability inclusion in the health sector are informed by valid and reliable data that allow monitoring and tracking progress.

As shown above, however, data on health inequities among persons with disabilities are scarce. Factors contributing to the inequity are frequently not well captured, making it difficult sometimes to explore the drivers of the differences and whether these differences are indeed due to unjust or unfair factors. The collection of data on disability is often deprioritized in many countries; consequently the evidence of health inequities and their contributing factors is more limited than for other groups in marginalized situations. However, lack of evidence should not be interpreted as a lack of inequities.

There is a fundamental need to collect or disaggregate population- and facility-based data based on disability status, across the different levels of country health information systems. For example, at input level, administrative sources such as financial tracking systems, databases and records on human resources, infrastructure or policies can be used to understand how financing for disability works, or whether health facilities are accessible. At output level, facility assessments or facility reporting systems can measure availability of services, service readiness or quality. At outcome and impact level, disability-specific surveys or routine health and demographic surveys that allow disaggregation of data by disability, and integrating disability indicators in facility-level data collection can facilitate in-depth understanding of the experiences of persons with disabilities in terms of health-care needs and coverage. Chile is among the countries that have implemented the WHO Model Disability Survey to inform policy (Box 4.5).

Only through valid and reliable data on disability will countries be able to develop evidenced-based policies to monitor the SDGs, to measure progress towards national targets such as UHC and to take stock of the challenges that remain.

Box 4.5 The role of data in improving the lives of persons with disability in Chile

The Model Disability Survey (MDS), developed by WHO and the World Bank in 2011, addresses the scarcity of data and often poor quality of information on persons with disabilities in many countries *(22)*. The survey takes a broader approach to disability, collecting data on functioning and environmental barriers and facilitators. WHO has been supporting the successful implementation of the MDS in more than 15 countries to date, providing a comprehensive assessment of the situation of persons with disabilities, and contributing to better public policy.

Under the leadership of the Ministry of Social Development and Family and the National Disability Service (SENADIS), with participation from the Ministry of Health, the WHO MDS was implemented in Chile for the first time in 2015 *(26)*. Preparation of the survey took more than a year, including consultation with persons with disabilities, civil society groups, their families and supporters across all 15 regions of the country.

The survey found that one in six (16.7%) people aged 2 years and older in Chile had disabilities in 2015 (20.0% of adults and 5.8% of children aged 2–17 years). An estimated 59% of adults with disability had a mental or behavioural disorder. It also identified barriers that persons with disability experienced, including in health and transport *(27)*.

The findings informed the development of key legislation, plans and actions to address the identified barriers. For example, Law 21.015 on labour inclusion was implemented, setting a labour quota of 1% for workers with disabilities that all companies with more than 100 workers must meet – with plans dedicated to gradually increase this percentage. Furthermore, the results of the study helped design protocols and methodologies to improve the level of participation of persons with disabilities, such as the 2017 national census that incorporated a protocol to interview persons with disabilities in their homes. In addition, the development of the National Mental Health Action Plan, which was launched in 2017, and the National Disability Qualification and Certification Plan. More actions were taken towards improving access to health services among persons with disabilities. In addition, a decision was taken to include disability questions in the country's National Health Survey to enable the government to better track progress and understand unmet service needs among persons with disabilities.

In line with the WHO recommendation to undertake the MDS every 5–10 years to track progress on the situations of persons with disabilities and dependency, Chile implemented the survey for a second time in 2022 *(28)*. The results of the new assessment will help the Government of Chile better understand the impact of disability-related policies and actions that the country has taken, and plan next steps towards addressing the needs of persons with disabilities and to monitor the implementation of the UN Convention on the Rights of Persons with Disabilities.

4.3 Health of refugees and migrants

The number of international migrants increased from 153 million (2.9% of the global population) in 1990 to 281 million (3.6% of the global population) in 2020 *(29)*. This number does not include internal migrants, which were estimated to be around 763 million in 2005 *(30)*. In addition, in mid-2023, an estimated 110 million people were forcibly displaced, including those who are internally displaced, refugees and asylum seekers *(31)*.

Migration could either improve or degrade an individual's health status. Refugees and migrants often face worse health outcomes in countries of transit and destination due to barriers such as language and cultural differences, institutional discrimination and restricted use of health services.

The first WHO *World report on the health of refugees and migrants*, released in 2022, offers an overview of the health of refugees and international migrants, along with the associated determinants and public health challenges, while also revealing crucial gaps in global data and knowledge *(32)*. Prioritizing the rights of refugees and migrants to timely, affordable and dignified health care is essential for achieving health equity.

4.3.1 Key issues affecting the health of refugees and migrants

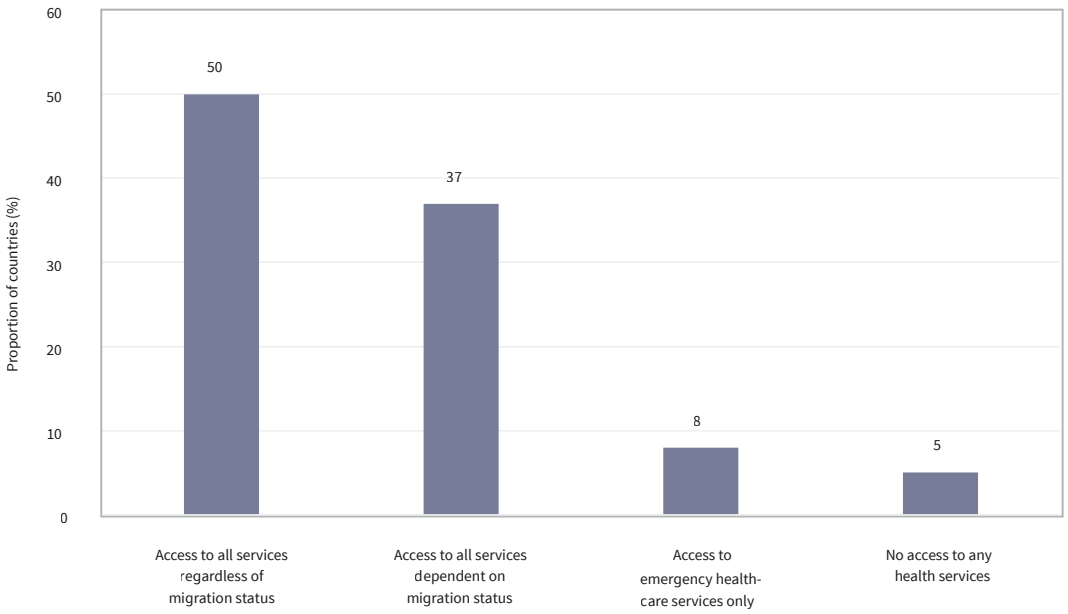
Some flows of global migration can be predicted by factors such as economic growth and demographic changes. However, displacements due to emergencies arising from disease outbreaks, conflicts, natural disasters and climate change pose significant challenges. Health and social protection systems need to be prepared for sudden upheaval of populations.

New and renewed emergencies are straining health services in all WHO regions. In addition to deaths and injuries, the risks of infectious diseases and mental health conditions also increase; meanwhile health facilities may be unable to cope as they are heavily affected by power and supply outages, or even targeted in conflicts. The threat of malnutrition and starvation exists further down the line as a result of disrupted food supplies, exacerbating critical health needs of already vulnerable populations *(33)*.

Although a large proportion of refugees and migrants are in generally good health, their numbers also include children, elderly people, persons with disabilities, and those whose health has been negatively impacted by their travels or the circumstances in their home country. Some might start a family, get sick or get injured in their host country. These health needs transcend national boundaries, but many countries restrict health coverage based on immigration status, limiting access to health insurance and services, and the cost of non-emergency care may be an unaffordable out-of-pocket expense. These factors leave millions in vulnerable situations globally, and they may encounter poorer health outcomes, particularly in substandard living and working conditions *(33)*.

For instance, studies have found higher rates of anaemia in women and children among refugees and migrants compared with local populations, and there is an increased risk of both anaemia and malnutrition in some camp-based settings *(34–39)*. Migrant workers may face discrimination, exploitation, limited workplace rights and social protection, as well as significant occupational health problems, such as higher risk of occupational injuries documented particularly among male migrant workers employed in high-risk industries *(40–44)*. During the COVID-19 pandemic, migrant workers in some countries, particularly those in low-skilled roles, faced heightened exposure risks due to overcrowded living conditions *(45–47)*. Those who were employed in essential sectors such as health care and agriculture bore a disproportionate burden of pandemic-related challenges *(48–51)*. In addition, refugees and migrants may be particularly vulnerable to the effects of AMR during various phases of migration and displacement, due to factors such as exposure to infections, limited access to diagnostics and therapeutics and inappropriate use of antibiotics *(52)*.

Figure 4.9 Distribution of access to government health services for refugees and migrants across 84 countries, 2018–2021



Source: WHO *(32)*, based on unpublished data from the International Organization for Migration.

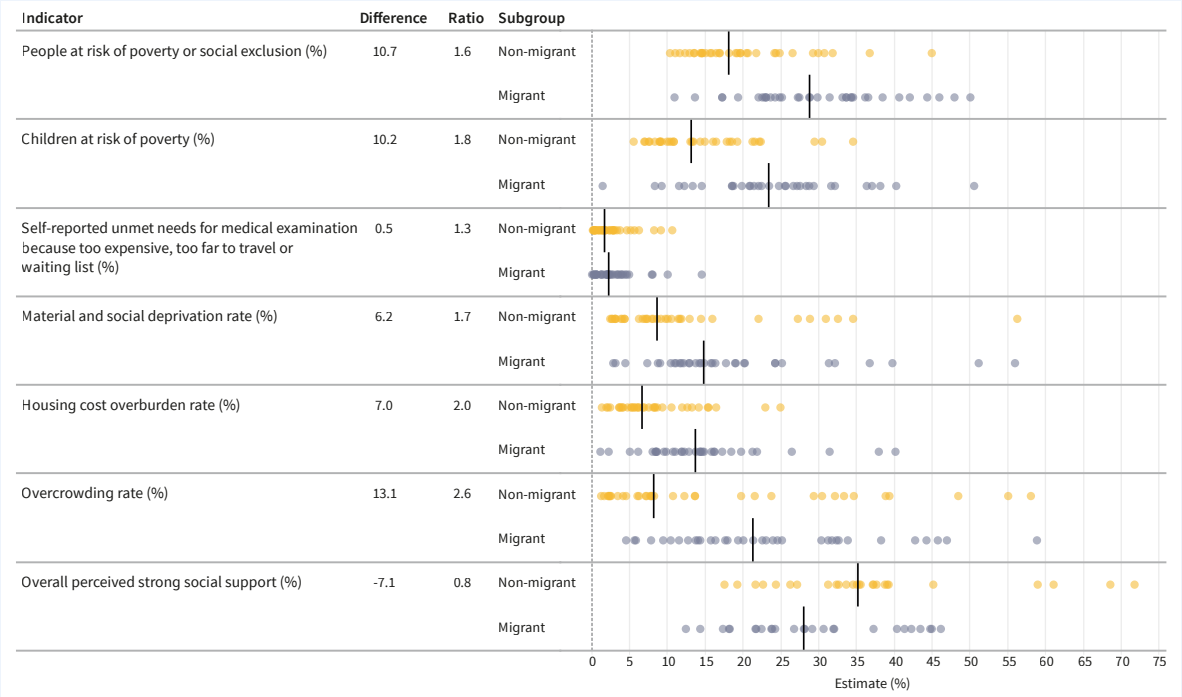
Yet, data on health-care access policies from 84 countries between 2018 and 2021 show that only half of them provide refugees and migrants with access to all government-funded health services under the same conditions as nationals, regardless of migratory status (see Fig. 4.9) *(32)*.

Available evidence reveals mixed patterns of NCD burden and risks among migrants and refugees compared with host populations. Taking cancer as an example, studies from three high-income countries in the Americas suggested better outcomes for migrants with cancer, whereas research from two high-income European countries indicated that cancer was often diagnosed at advanced stages among refugee and migrant populations, leading to poorer health outcomes than host populations *(53–56)*. Studies from three African countries underscored gaps in cervical cancer awareness among refugee and migrant women, stressing the importance of prevention and early detection interventions *(57–59)*. These challenges are mirrored in other regions, with refugee and migrant women facing barriers to HPV vaccination in settings where factors such as clinic accessibility and physician recommendations play significant roles *(60, 61)*. Box 4.6 presents an analysis on migration-related health inequalities based on data from 35 European countries.

Box 4.6 Migration-related health inequalities in European countries

Based on data from 35 European countries collected between 2018 and 2022, migrants (based on country of birth) tend to be more at risk of poverty, social exclusion and material deprivation – factors that increase risks of ill health (Fig. 4.10). Overall, 18% of non-migrants were at risk of poverty or social exclusion, compared with 29% of migrants. Migrants were also 1.7 times as likely to have material and social deprivation (defined as not being able to afford certain goods, services and social activities), twice as likely to be overburdened by housing costs as a portion of their income and 2.6 times as likely to be living in overcrowded conditions. They were also less likely (0.8 times) to have social support. However, there was little difference overall between migrants and non-migrants in terms of unmet needs for medical examination, though this varied across countries *(18, 21)*.

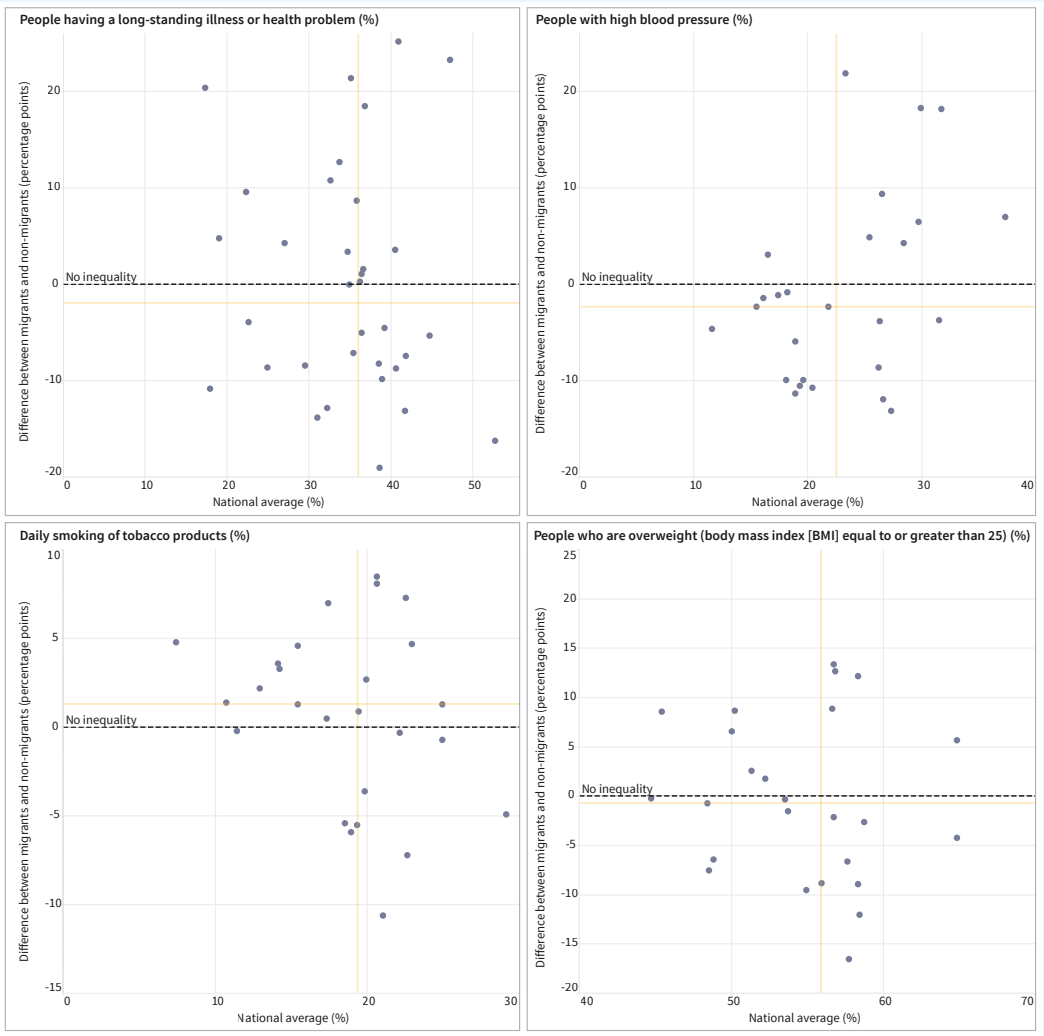
Figure 4.10 Inequality in health determinants between migrant and non-migrant populations in 35 European countries, 2018–2022



Notes: circles indicate countries – each country is represented by multiple circles (one for each indicator and each subgroup). Vertical black lines indicate the median value (middle point of estimates). "Difference" is the difference between the median estimate values for people with severe disability and people with no disability. "Ratio" is the ratio between the median estimate values for migrants and non-migrants.

Source: Authors' analysis of data from the European Health Interview Survey 2019 and the European Union Statistics on Income and Living Conditions 2018–2022 *(18, 21)*.

Figure 4.11 Inequality in self-reported NCDs and select risk factors compared with national averages in 25–34 European countries, 2018–2022



Notes: circles indicate countries – each country is represented by multiple circles (one for each indicator). Orange lines indicate the median value (middle point of estimates). Positive difference values indicate a higher indicator estimate among migrants, while negative difference values indicator a higher indicator estimate among non-migrants. A difference of zero indicates no inequality. The indicators are based on self-reported chronic conditions or risk factors in the 12 months prior to the survey.
Source: Authors' analysis of data from the European Health Interview Survey 2019 and the European Union Statistics on Income and Living Conditions 2018–2022 *(18, 21)*.

Patterns of inequality in NCD burden and risk factors between migrants and non-migrants varied greatly across European countries, reflecting the multifaceted influence of genetic, social, environmental and other factors that contribute to NCD burden (Fig. 4.11). For example, the proportion of people reporting a long-standing illness or health problem is more than 10 percentage points higher among migrants compared with non-migrants in seven countries, but is more than 10 percentage points higher among non-migrants in six other countries. Reported high blood pressure prevalence is more than 10 percentage points higher among migrant populations in three countries, but is more than 10 percentage points higher among non-migrant populations in seven other countries *(18, 21)*.

Similarly, inequalities in the prevalence of NCD risk factors varied across countries. For example, the prevalence of tobacco smoking was over 5 percentage points higher among migrants in four countries, but over 5 percentage points higher among non-migrants in six countries. In eight countries, reported overweight prevalence was at least 5 percentage points higher among migrant populations, while it was also at least 5 percentage points higher among non-migrant populations in eight countries *(18, 21)*.

Therefore, inequalities in NCDs between migrants and non-migrants vary significantly across European countries, underscoring the imperative for tailored, country-specific investigations into health inequalities and their drivers, to inform equity-oriented policies and programmes.

4.3.2 The need for quality data on refugee and migrant health

There is a lack of timely, representative and systematically collected disaggregated data on refugee and migrant health in national health information systems. This makes it challenging to understand and address their health needs, develop inclusive public health approaches and track progress towards national and global health goals. Data-driven approaches are vital for fostering health equity and social inclusion. Box 4.7 shows how mixed-methods data generation provides insights into the health status and needs of refugees from Ukraine in Poland.

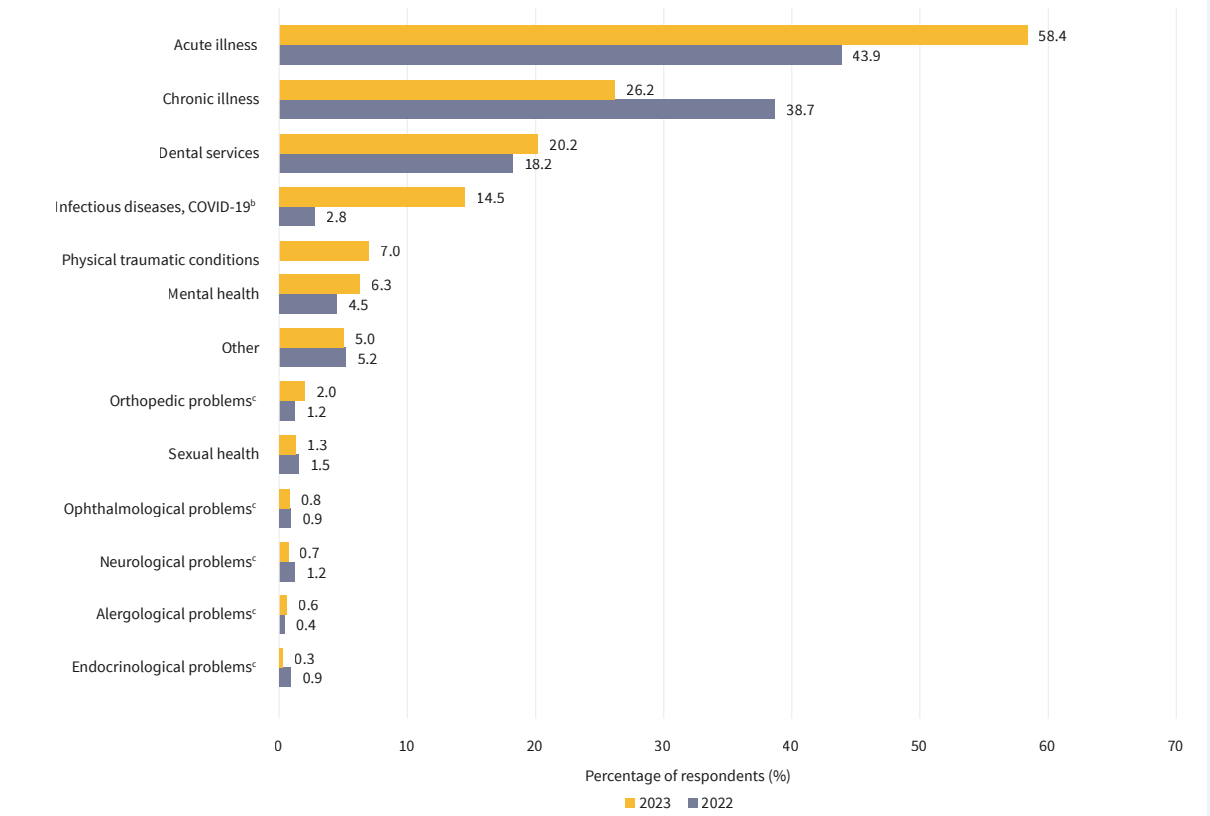
Recognizing the urgency, the WHO Global Action Plan on promoting the health of refugees and migrants emphasizes the collection of high-quality, disaggregated data to monitor progress towards implementation of the six priority areas *(62)*. Since the Global Action Plan is founded on health issues for refugees and migrants, such data and the resulting monitoring will also contribute to the health-related SDGs for the population on the move, in particular refugees and migrants worldwide. SDG target 17.18 specifically commits to enhancing capacity-building support for countries to significantly increase the availability of high-quality data disaggregated by migratory status.

Box 4.7 Mixed-methods data-generation approach provides insights into health status and needs of refugees from Ukraine in Poland

The outbreak of war in Ukraine in 2022 led to an immediate and unprecedented influx of millions of refugees fleeing from Ukraine to other countries in Europe and beyond, with Poland hosting up to 3.5 million refugees at the height of the crisis. In response to the urgent need for evidence on the health status and needs of refugees, Statistics Poland collaborated closely with WHO at country, regional and headquarters levels. A mixed-methods approach was adopted in the border provinces of Poland, through a representative household survey and behavioural insights research, initiated in 2022, and repeated in 2023.

With the country's population surging by over 4%, the Polish authorities prioritized understanding the health needs of the refugees. The results are illustrated in Fig. 4.12 *(63)*. Even though services were rapidly made available for them, the European Union directive that allowed such provision does not necessarily address barriers to access, and hence barriers such as language and cultural differences and lack of information hindered and continue to hinder health-care access. Mental health illness, though prevalent, was often underreported due to stigma and practical obstacles.

Figure 4.12 Health care needs[a] among Ukrainian refugees in Poland, 2022 and 2023



[a] Refers to persons who needed health care in the 30 days prior to the interview. The respondent could give more than one answer.

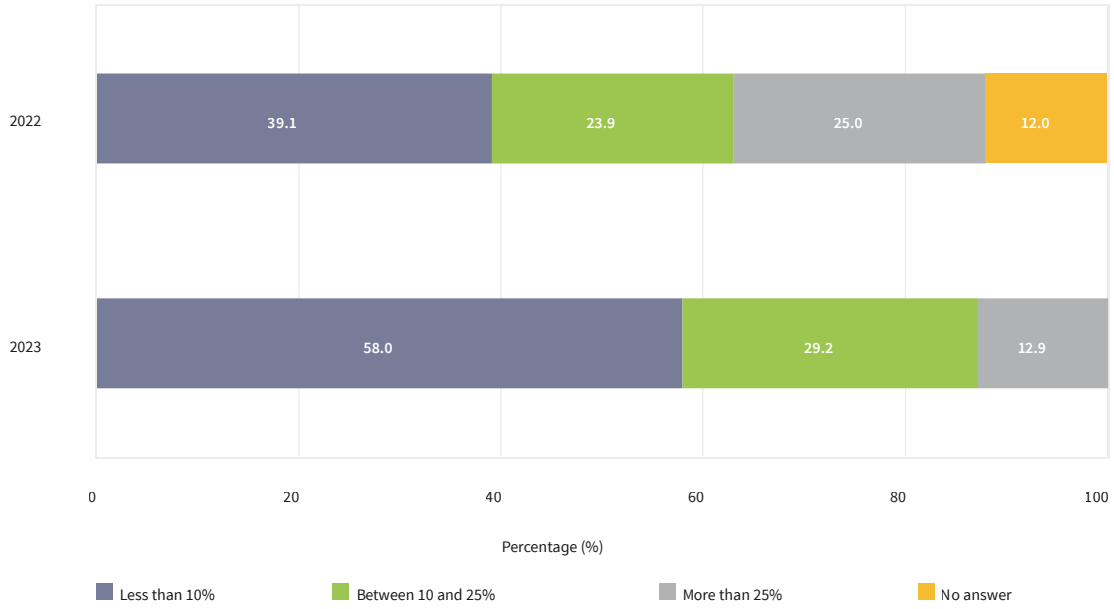
[b] In 2022, infectious diseases (HIV, TB, hepatitis) were a subcategory under "chronic diseases", and "COVID-19" was a separate category. In 2023, "infectious diseases" became a category encompassing (among others) influenza, COVID-19 and chronic infectious diseases (HIV, TB, hepatitis).

[c] Most frequent responses from "other" category.

Source: WHO and Statistics Poland *(63)*.

High cost of treatment, particularly for dental services, medication and accessing private health care with lower waiting time, creates a significant barrier for refugees. Data showed that the percentage of refugees spending more than 25% of their income or savings on health care in 2023 was almost half that in 2022 (Fig. 4.13) *(63)*. The majority of people interviewed utilized free medical care, though some used private services paid by cash or credit card.

Figure 4.13 Share of income or savings spent on health-care costs[a] among Ukrainian refugees in Poland, 2022 and 2023



[a] Refers to persons who needed health care in the 30 days prior to the interview.

Source: *WHO and Statistics Poland (63).*

Presented at the 54th Session of the Statistical Commission, this collaboration received recognition for its innovative methodology, prompting a call for continued adoption of mixed-methods research in humanitarian response efforts, ensuring alignment with existing definitions and statistical frameworks on refugees and migrants, and ensuring coordination with the Expert Group on Refugee, Internally Displaced Persons and Statelessness Statistics and the United Nations Expert Group on Migration Statistics *(64)*. Civil society organizations play a crucial role in providing support, particularly for specialized care and mental health services.

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