GLOBAL TB PERSPECTIVE

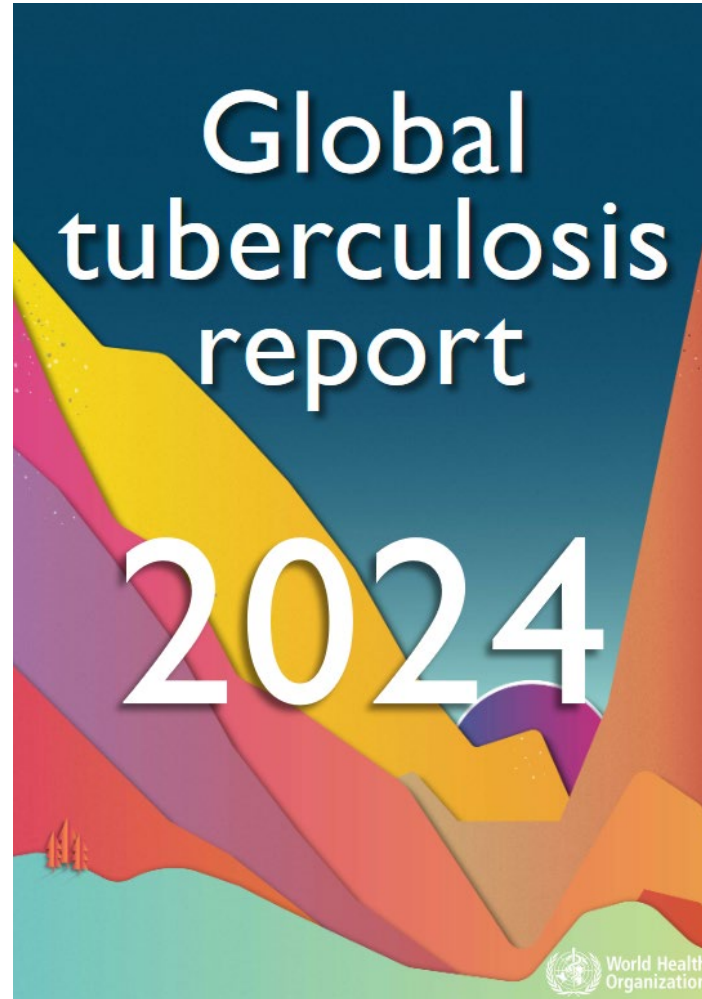**GUY CROWDER, MD, MPHTM**
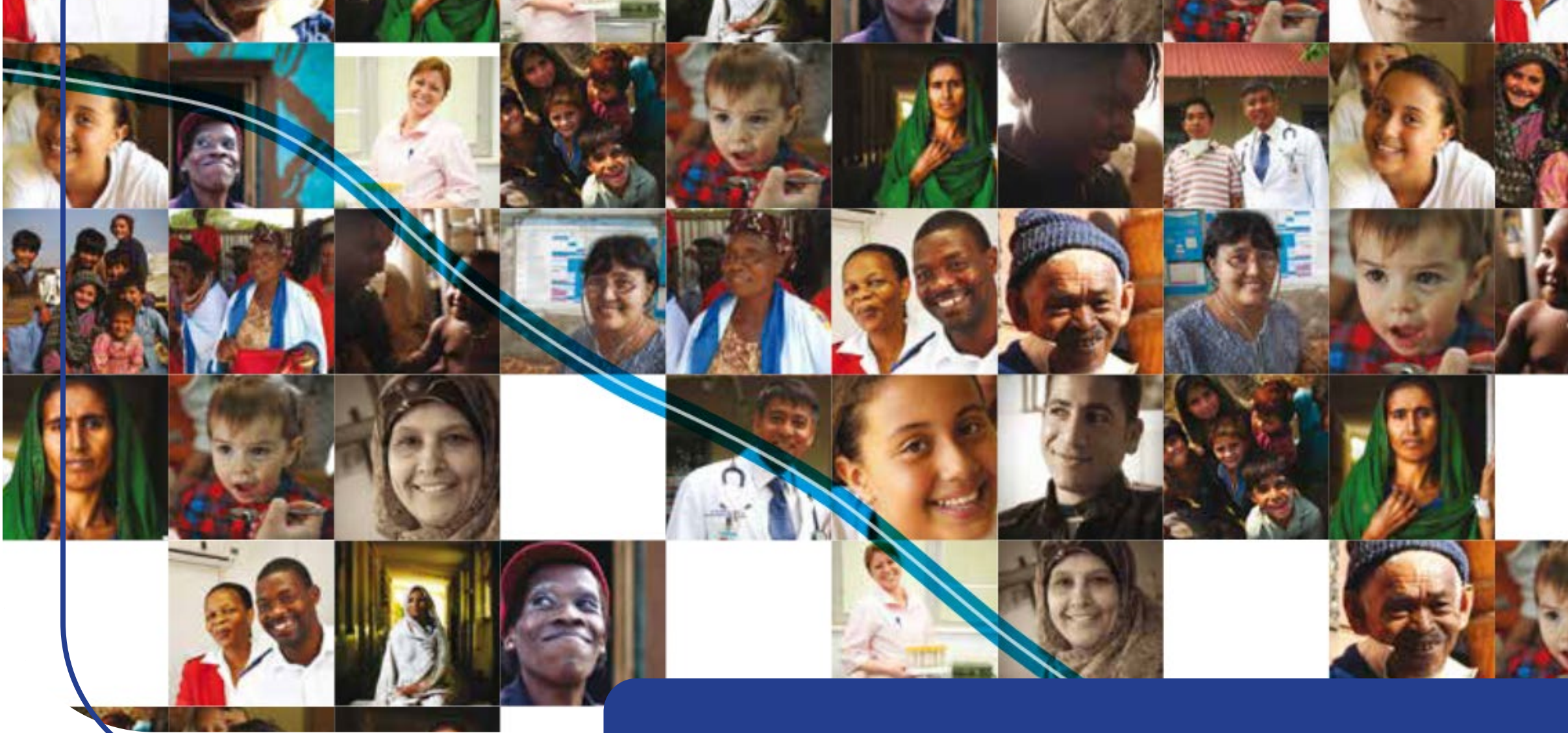CHIEF MEDICAL OFFICER

6/10/2025

Introduction

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Global TB Report 2024

Unless otherwise noted, the information in this presentation is taken from the report

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WHO 2024 TB Report

Global Goals

End TB Strategy at a Glance

Box 2. The End TB Strategy at a glance

VISION	A WORLD FREE OF TB — zero deaths, disease and suffering due to TB			
GOAL	END THE GLOBAL TB EPIDEMIC			
	MILESTONES		TARGETS	
INDICATORS	2020	2025	2030	2035
Percentage reduction in the absolute number of TB deaths[a] (compared with 2015 baseline)	35%	75%	90%	95%
Percentage reduction in the TB incidence rate (compared with 2015 baseline)	20%	50%	80%	90%
Percentage of TB-affected households facing catastrophic total costs due to TB[b] (level in 2015 unknown)	0%	0%	0%	0%

PILLARS AND COMPONENTS

1. **INTEGRATED, PATIENT-CENTRED CARE AND PREVENTION**
   A. Early diagnosis of TB including universal drug-susceptibility testing, and systematic screening of contacts and high-risk groups
   B. Treatment of all people with TB including drug-resistant TB, and patient support
   C. Collaborative TB/HIV activities, and management of comorbidities
   D. Preventive treatment of persons at high risk, and vaccination against TB

2. **BOLD POLICIES AND SUPPORTIVE SYSTEMS**
   E. Political commitment with adequate resources for TB care and prevention
   F. Engagement of communities, civil society organizations, and public and private care providers
   G. Universal health coverage policy, and regulatory frameworks for case notification, vital registration, quality and rational use of medicines, and infection control
   H. Social protection, poverty alleviation and actions on other determinants of TB

3. **INTENSIFIED RESEARCH AND INNOVATION**
   I. Discovery, development and rapid uptake of new tools, interventions and strategies
   J. Research to optimize implementation and impact, and promote innovations

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2023 UN targets

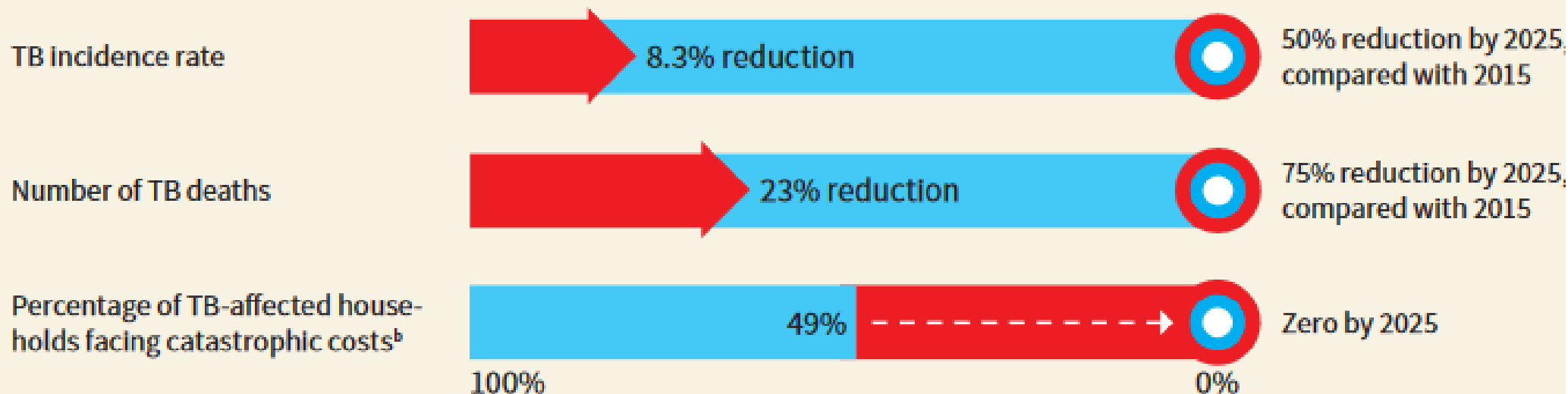## Global targets set in 2023 at the second UN high-level meeting on TB

INDICATOR	GLOBAL TARGET
TB treatment coverage (percentage of the estimated number of people who develop TB disease each year who are provided with quality-assured diagnosis and treatment)	90% by 2027 (equivalent to up to 45 million people globally in the 5-year period 2023–2027, including up to 4.5 million children and up to 1.5 million people with drug-resistant TB)
Coverage of TB preventive treatment (percentage of people at high risk of developing TB disease who are provided with TB preventive treatment)	90% by 2027 (equivalent to up to 45 million people globally in the 5-year period 2023–2027, including 30 million household contacts of people with TB and 15 million people living with HIV)
Coverage of rapid diagnostic testing for TB (percentage of those diagnosed with TB who were initially tested with a WHO-recommended rapid molecular test)	100% by 2027
Coverage of health and social benefits package for people with TB	100% by 2027
Availability of new TB vaccines that are safe and effective	Rollout initiated, preferably within 5 years
Annual funding for universal access to quality prevention, diagnosis, treatment and care for TB	US$ 22 billion by 2027, US$ 35 billion by 2030
Annual funding for TB research	US$ 5 billion by 2027

[5] This indicator is not the same as the SDG indicator for catastrophic health expenditures (see **Box 3**).
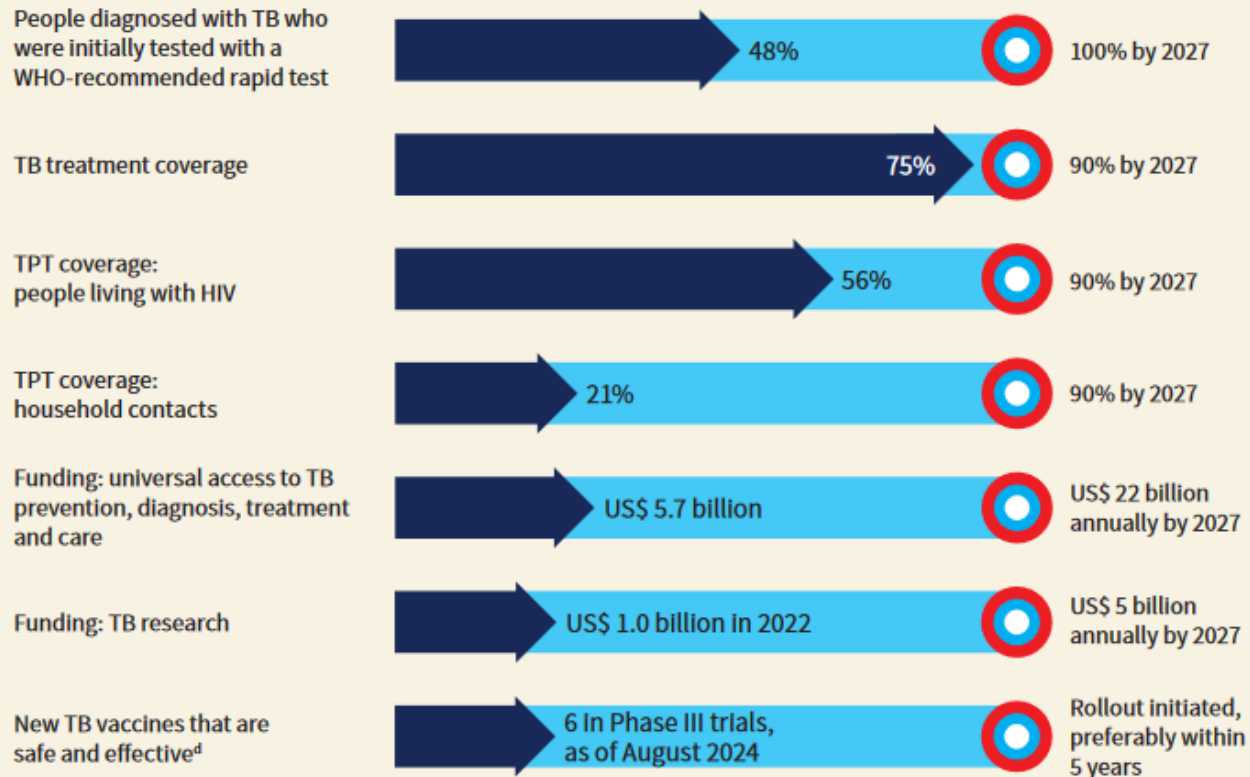
End TB 2025 goals...how are we doing?

End TB Strategy, 2025 milestones

TB incidence rate — 8.3% reduction — 50% reduction by 2025, compared with 2015

Number of TB deaths — 23% reduction — 75% reduction by 2025, compared with 2015

Percentage of TB-affected households facing catastrophic costs[b] — 49% — Zero by 2025

100% — 0%

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2023 UN targets...how are we doing?

2023 UN high-level meeting on TB, targets[c]

Target	Current	Goal
People diagnosed with TB who were initially tested with a WHO-recommended rapid test	48%	100% by 2027
TB treatment coverage	75%	90% by 2027
TPT coverage: people living with HIV	56%	90% by 2027
TPT coverage: household contacts	21%	90% by 2027
Funding: universal access to TB prevention, diagnosis, treatment and care	US$ 5.7 billion	US$ 22 billion annually by 2027
Funding: TB research	US$ 1.0 billion in 2022	US$ 5 billion annually by 2027
New TB vaccines that are safe and effective[d]	6 In Phase III trials, as of August 2024	Rollout initiated, preferably within 5 years

Global Trends

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Main Findings from 2024 Report

- The global rise in the number of people falling ill with TB each year has slowed and started to stabilize

- The global number of people dying from TB each year continues to fall

- The WHO African and European regions have made good progress towards the 2025 milestones for reductions in the TB incidence rate and the number of deaths caused by TB

- The globally reported number of people newly diagnosed with TB reached a new high in 2023

- The treatment success rate for people with drug susceptible TB has been sustained at a high level and continues to improve for people with drug resistant TB

- The coverage of TB preventive treatment has been sustained for people living with HIV and continues to improve for household contact of people diagnosed with TB
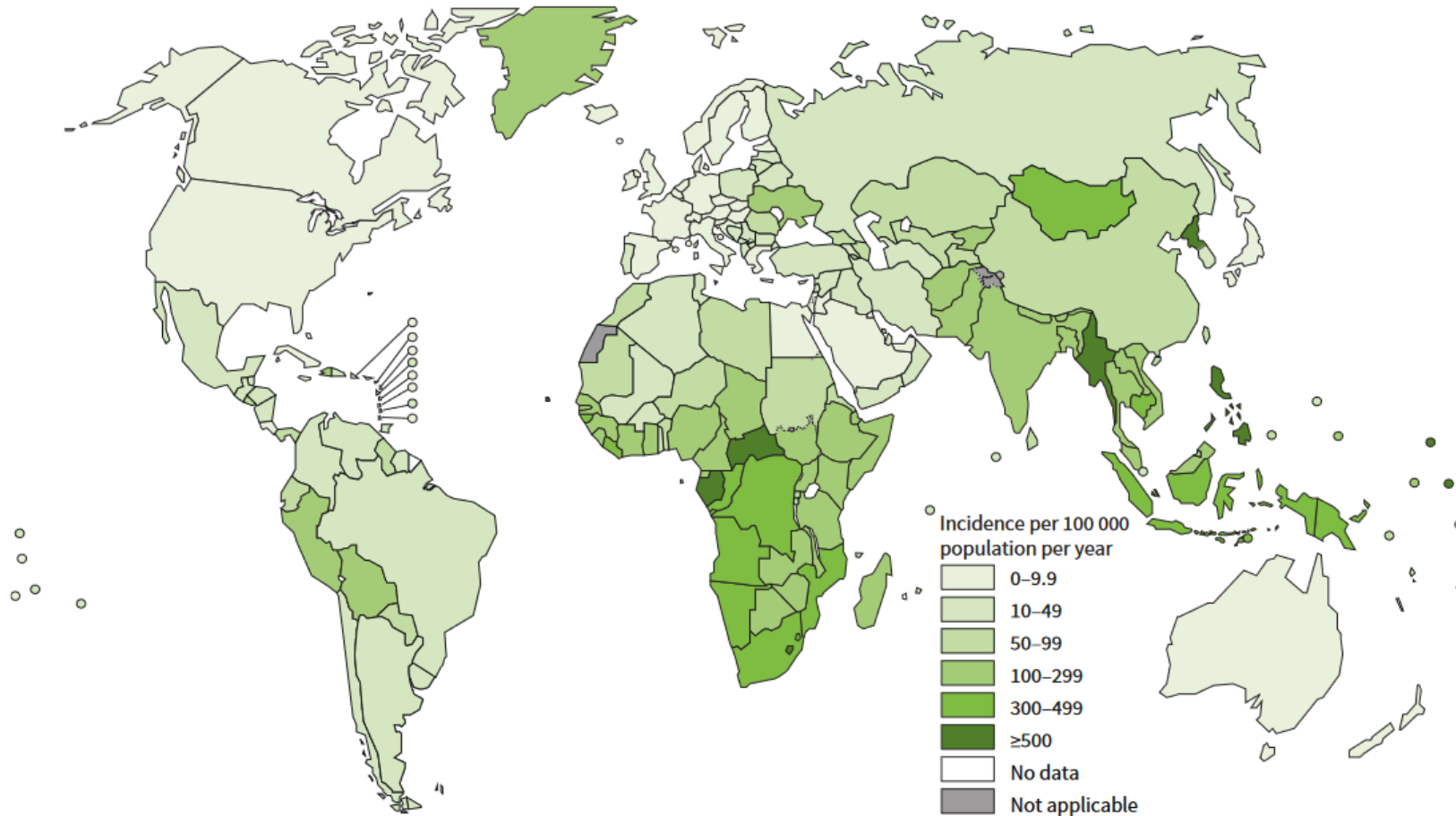
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2023 Incidence

- Estimated **10.8 million** TB cases in 2023
  - Increased from estimated 10.7 million in 2022 and 10.4 million in 2021
  - 4.6% increase in TB incidence rate from 2020-2023
    - From 129 to 134 (per 100,000)

- Per WHO, the continued rise reflects ongoing after-effects of disruptions to TB services during the worst years of the pandemic (2020-2021)
  - Persistence due to lag time between more people being infected with TB during disruptions to services and the developments of TB disease

- Regionally,

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Global TB incidence rates

Estimated TB incidence rates, 2023

Incidence per 100 000 population per year
- 0–9.9
- 10–49
- 50–99
- 100–299
- 300–499
- ≥500
- No data
- Not applicable

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Change in incidence (%)

Change (%) in estimated TB incidence (new cases per 100 000 population), 2023 compared with 2015

Change (2023 vs 2015,%)
- Increase (>5%)
- Stable (–5% to +5%)
- Decrease (6–9%)
- Decrease (10–19%)
- Decrease (20–49%)
- Decrease (≥50%)
- No data
- Not applicable

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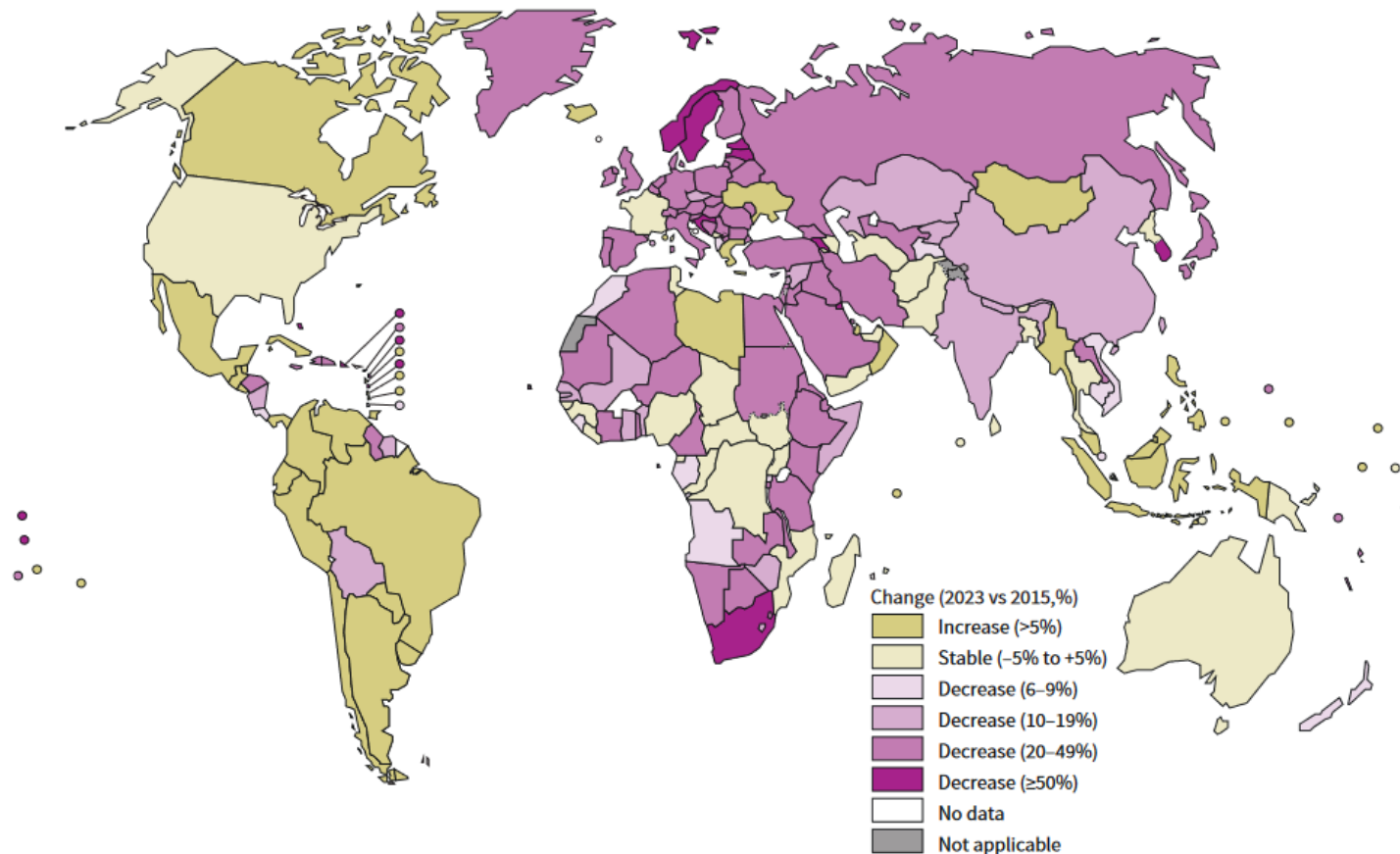
Incident case trends

Global trends in the estimated number of incident TB cases (left) and the incidence rate (right), 2010–2023

The horizontal dashed line shows the 2025 milestone of the End TB strategy, which is a 50% reduction in the TB incidence rate between 2015 and 2025. Shaded areas represent 95% uncertainty intervals.
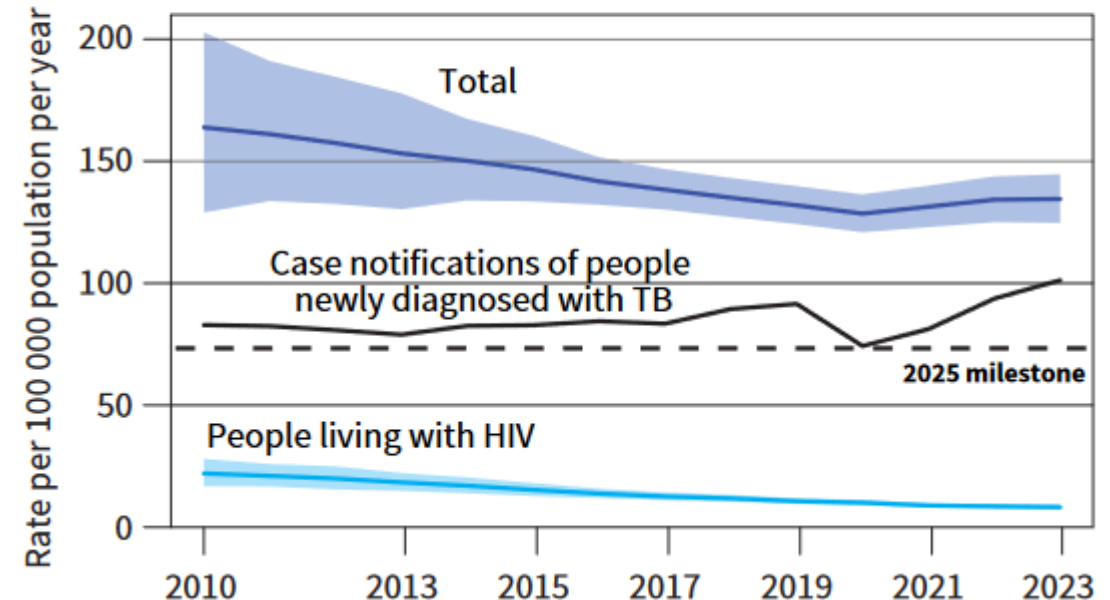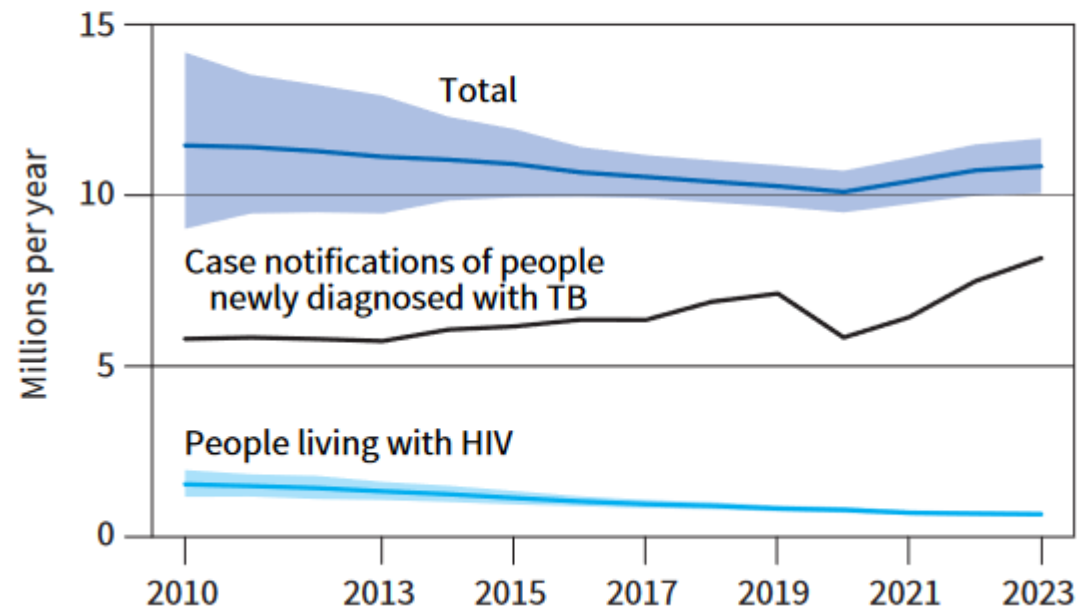
Incident cases in highest burden countries

- 30 highest burden countries accounted for 87% of cases

- The 8 highest accounted for more than 2/3 of cases

Estimated number of incident TB cases in 2023, for countries with at least 100 000 incident cases[a]

Number of incident cases
- 100 000
- 500 000
- 1 000 000
- 2 000 000

China
Bangladesh
Philippines
Pakistan
India
Indonesia
Nigeria
Democratic Republic of the Congo
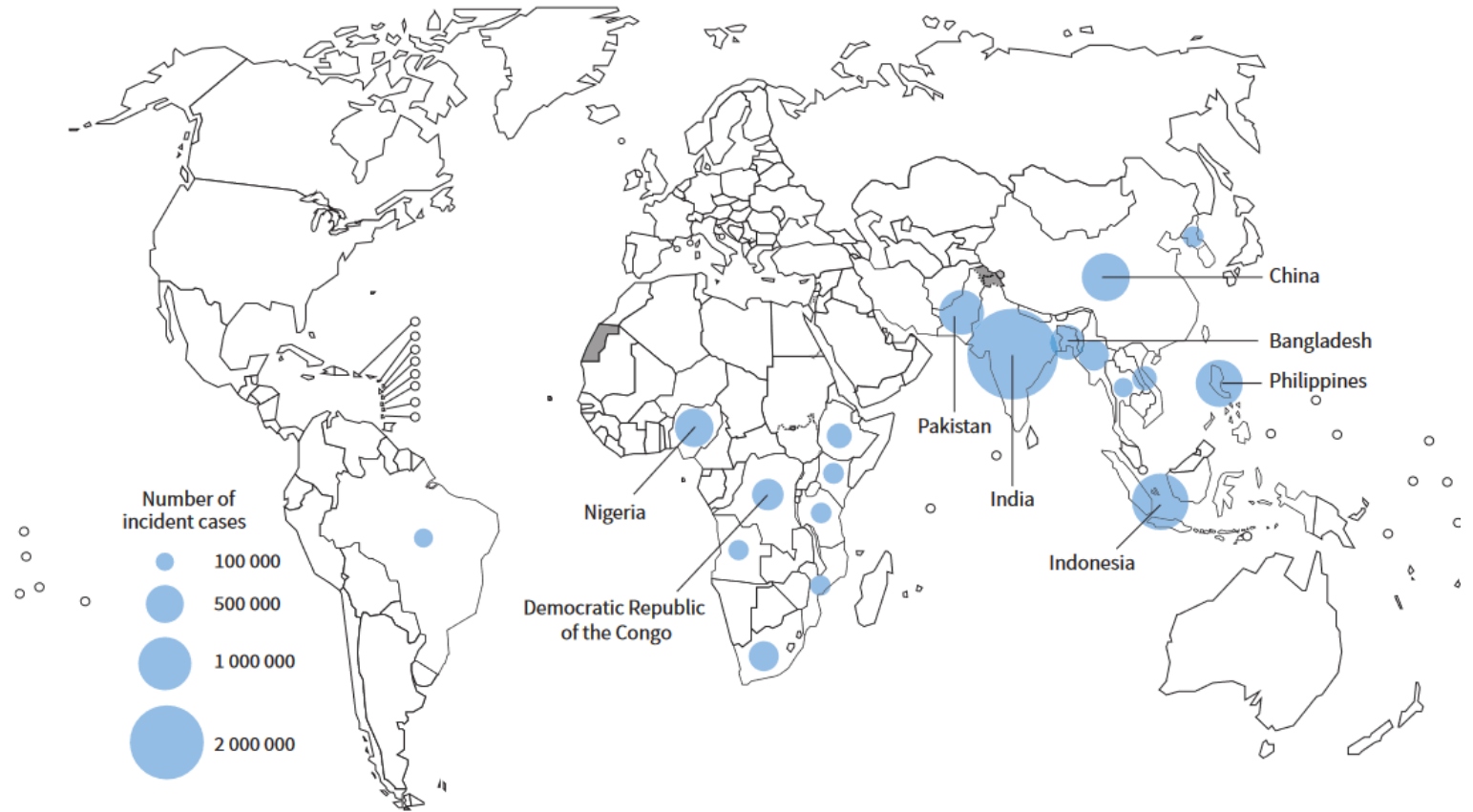
[a] The labels show the eight countries that accounted for about two thirds of the global number of people estimated to have developed TB in 2023.

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Incident case trends by region

Highest proportions:

45% SE Asia Region

24% African Region

17% W Pacific Region
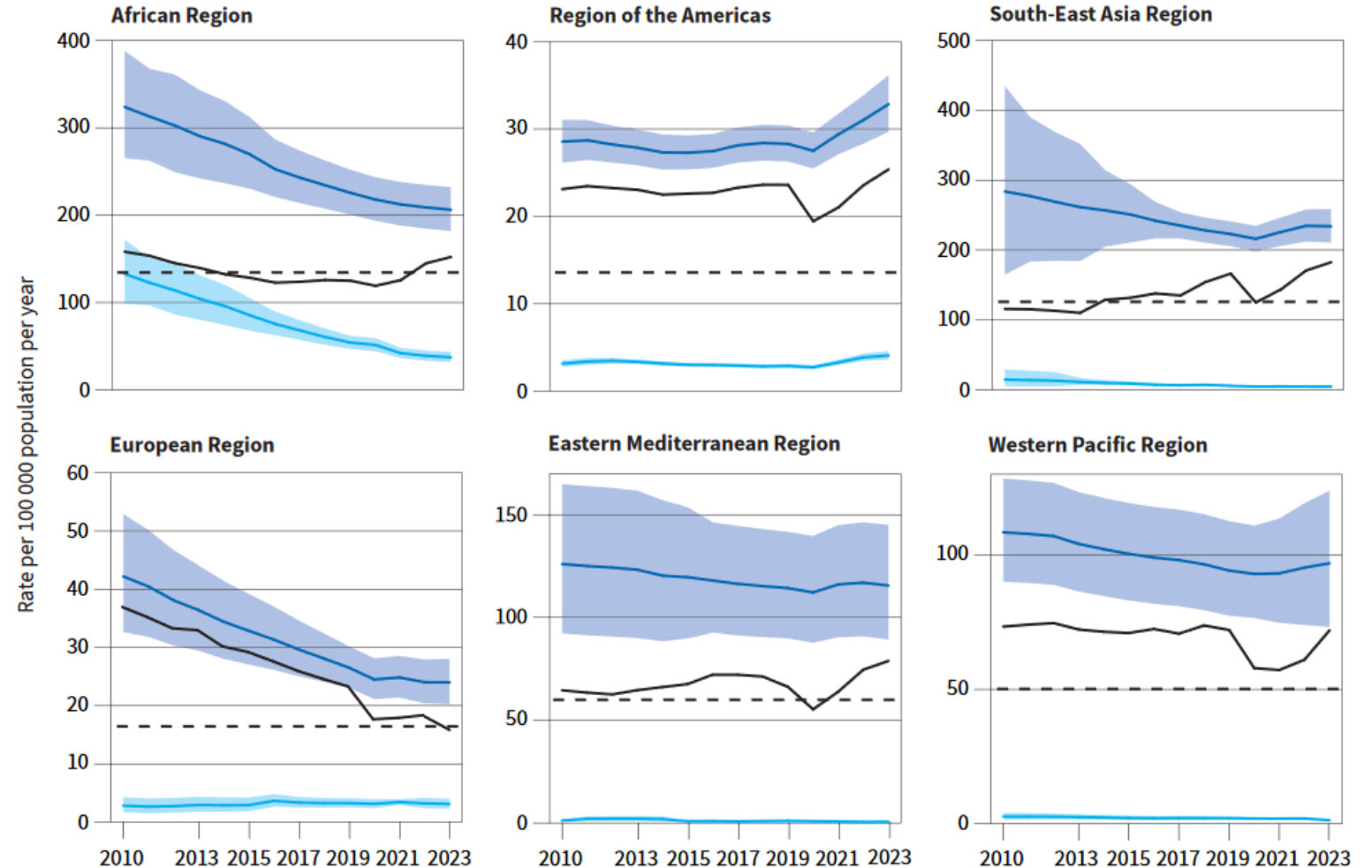
TB Case Notifications

- Globally in 2023, 8.2 million people were newly diagnosed with TB and officially notified as a TB case

- This is the highest number for a single year since WHO started to compile data from all countries and areas in the mid-90's. Prior record was 7.5 million in 2022.
  - 15% higher than 2019 (pre-pandemic)
  - 2020 decreased to 5.8 million
  - **Increases in 2022 and 2023 reflect strong global recovery in provision of and access to TB diagnosis and treatment**

Global trend in case notifications of people newly diagnosed with TB (black) and the estimated number of incident TB cases (green), 2010–2023

The shaded area represents the 95% uncertainty interval.
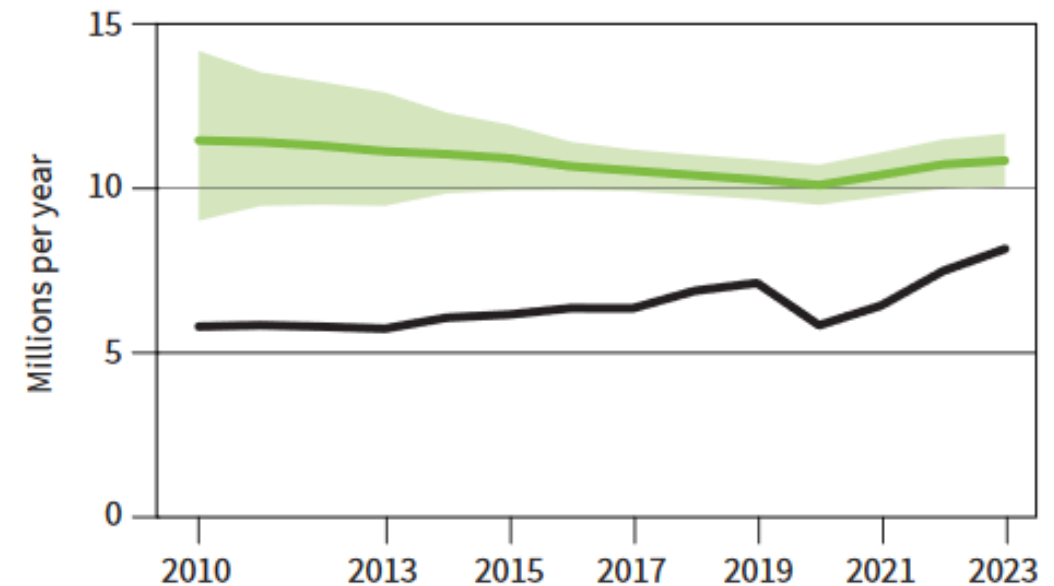
Countries with largest gaps for case notifications

The ten countries with the largest gaps between case notifications of people newly diagnosed with TB and the best estimates of TB incidence, 2023

Size of gap
- 50 000
- 250 000
- 500 000

Labeled countries: China, Bangladesh, Viet Nam, Philippines, Pakistan, Myanmar, India, Indonesia, Nigeria, Democratic Republic of the Congo
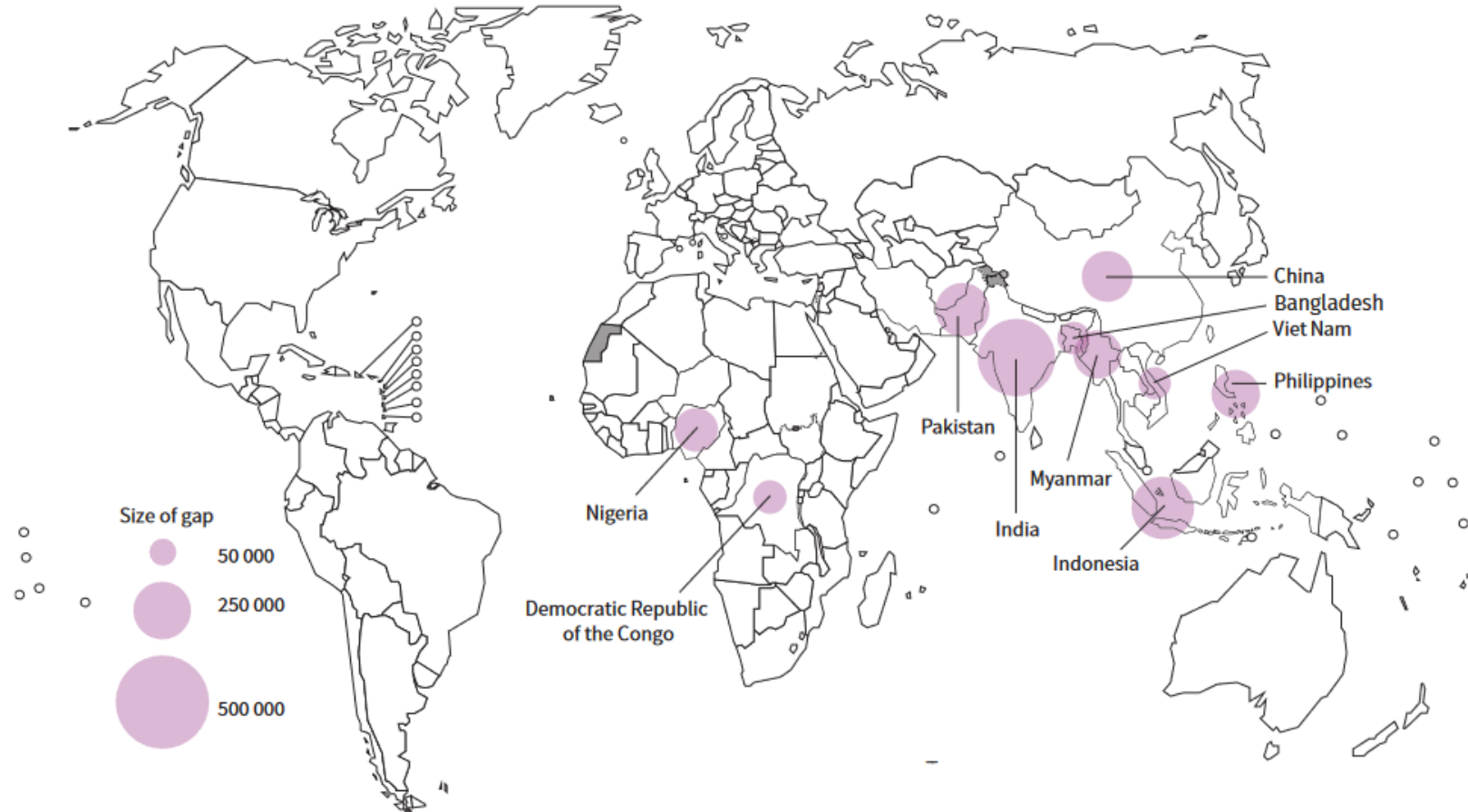
Drug Resistant TB

- The WHO continues to consider drug resistant TB to be a public health threat.
  - With resistance to rifampin being of greatest concern
- Estimated number of people with drug resistant TB in 2023 was 400,000
  - *Proportions of MDR/RR-TB: 3.2% of new cases; 16% among prev. treated*
    - *Was 4.1% and 20%, respectively, in 2015*
- Estimated annual number of people who developed MDR or RR TB was relatively flat from 2020-2023
  - Follows a slow downward trend 2015-2020
  - Contrasts with the increase in estimated number of cases
    - **Per WHO, this is due to downward trend in proportion of people with TB who have MDR/RR-TB**

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MDR case trends

Global trend in the estimated number of people who developed MDR/RR-TB (incident cases), 2015–2023

The shaded area represents the 95% uncertainty interval.
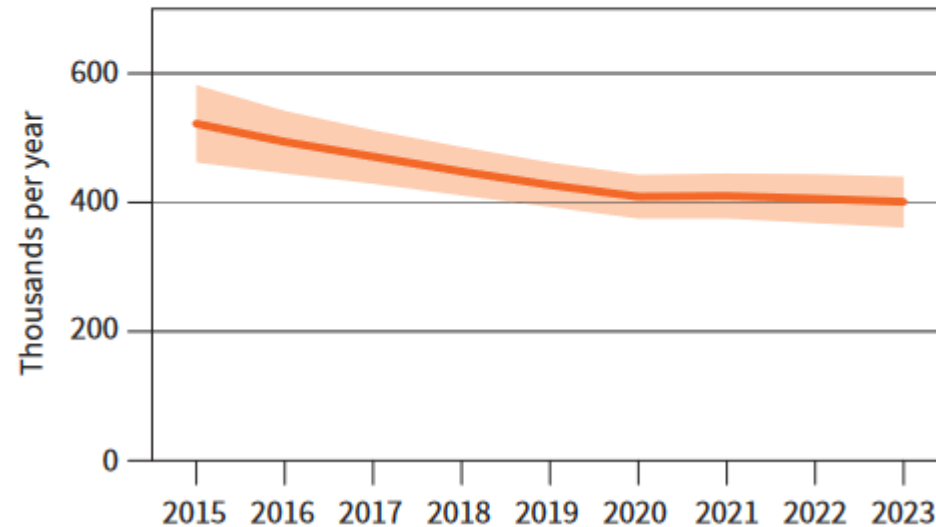
Global trend in the estimated percentage of people with TB who had MDR/RR-TB, 2015–2023

Shaded areas represent 95% uncertainty intervals.

People with no previous history of TB treatment

People previously treated for TB
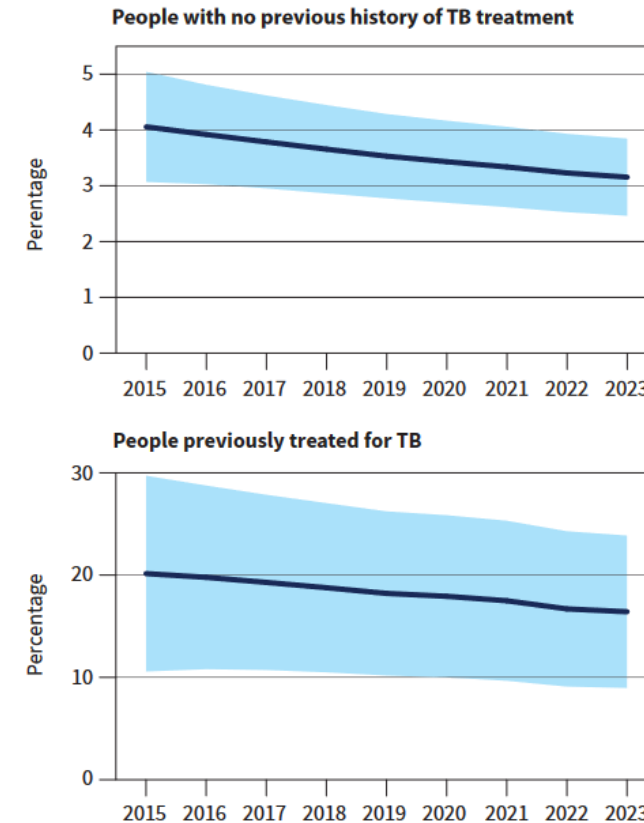
MDR/RR-TB cases in highest burden countries

5 countries accounted for over half of cases in 2023

- India 27%
- Russia 7.4%
- Indonesia 7.4%
- China 7.3%
- Philippines 7.2%

Estimated number of people who developed MDR/RR-TB (incident cases) in 2023, for countries with at least 1000 incident cases[a]

Number of cases
- 1 000
- 10 000
- 100 000

Russian Federation
China
Philippines
India
Indonesia
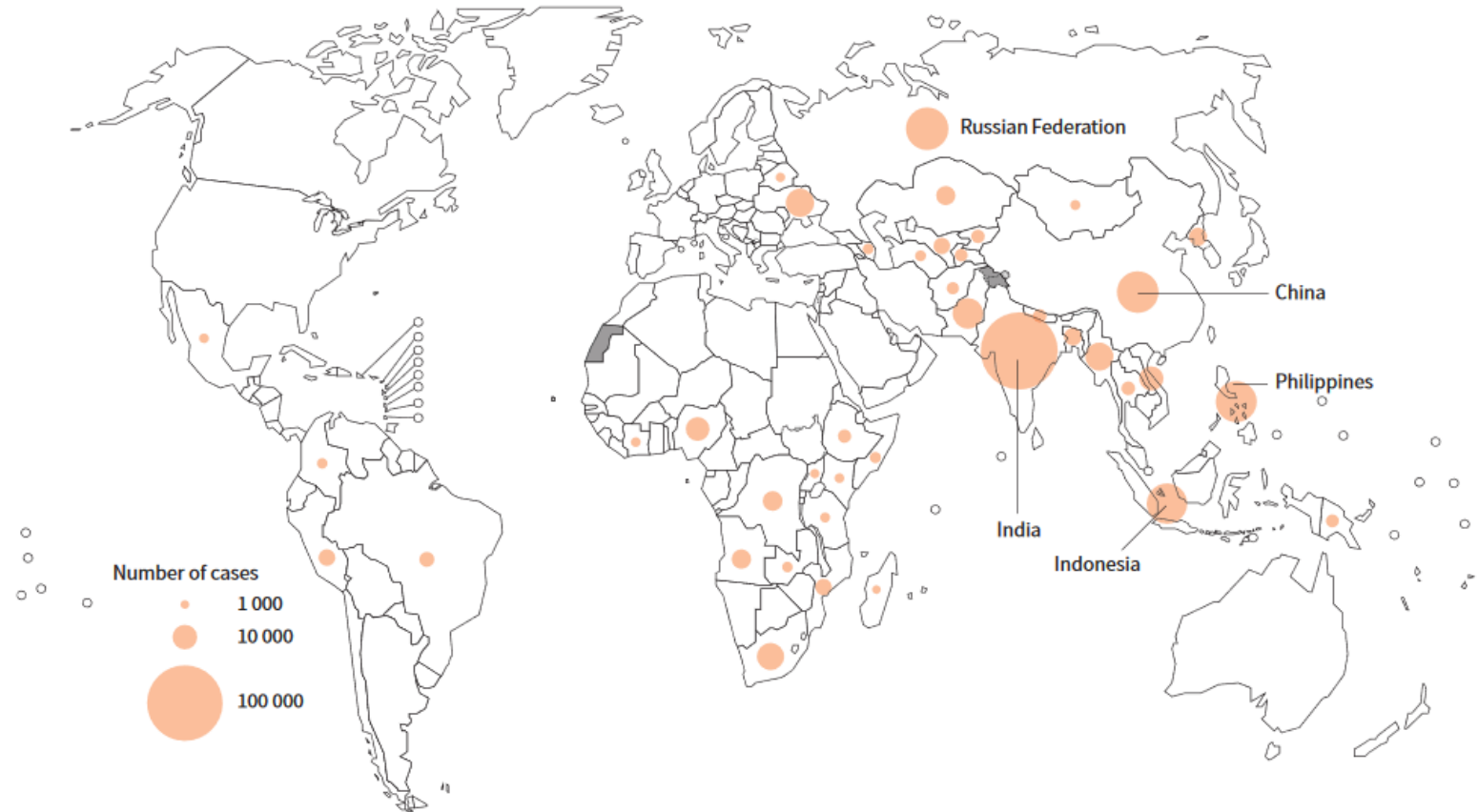
[a] The labels show the five countries that accounted for more than half of the global number of people estimated to have developed MDR/RR-TB in 2023.

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TB death data

- The estimated global number of deaths caused by TB fell for a second consecutive year in 2023
  - Continuing the reversal of increases that occurred during COVID in 2020 and 2021
- In 2023, TB caused an estimated 1.25 million deaths
  - 1.09 million among individuals without HIV
  - 161,000 among people living with HIV
  - Down from 1.42 million in 2021 and 1.40 million in 2020
  - Below pre-pandemic level of 1.34 million
  - COVID estimated to have caused 700,000 excess deaths from TB 2020-2023

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https://www.who.int/news/item/29-10-2024-tuberculosis-resurges-as-top-infectious-disease-killer

Decrease in estimated number of deaths

Global trends in the estimated number of deaths caused by TB (left) and the TB mortality rate (right),[a] 2010–2023

The horizontal dashed line shows the 2025 milestone of the End TB strategy, which is a 75% reduction in the total number of TB deaths between 2015 and 2025. Shaded areas represent 95% uncertainty intervals.
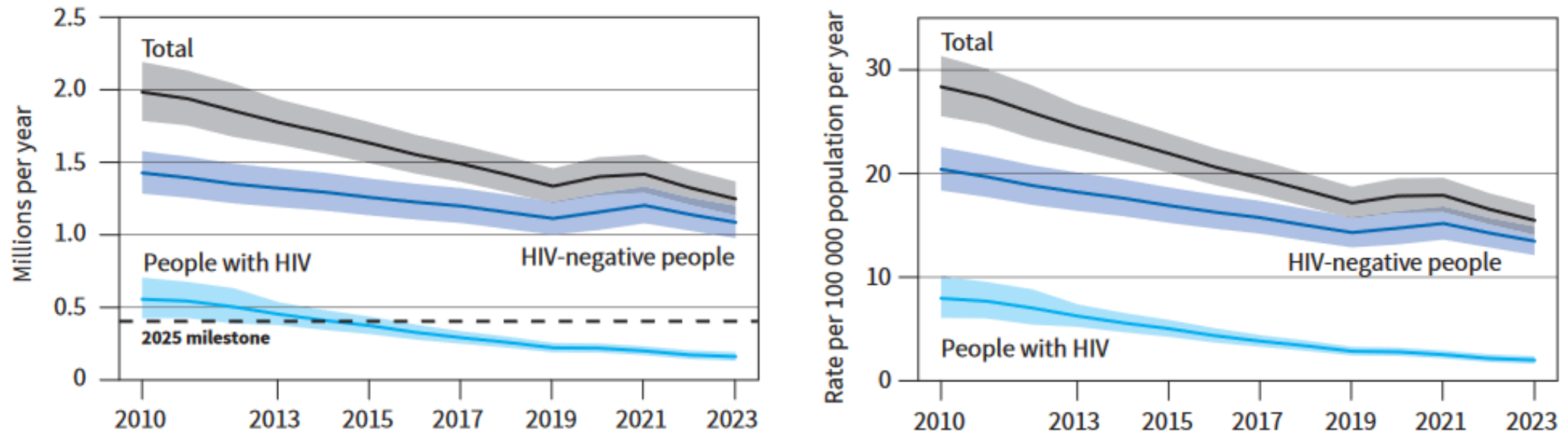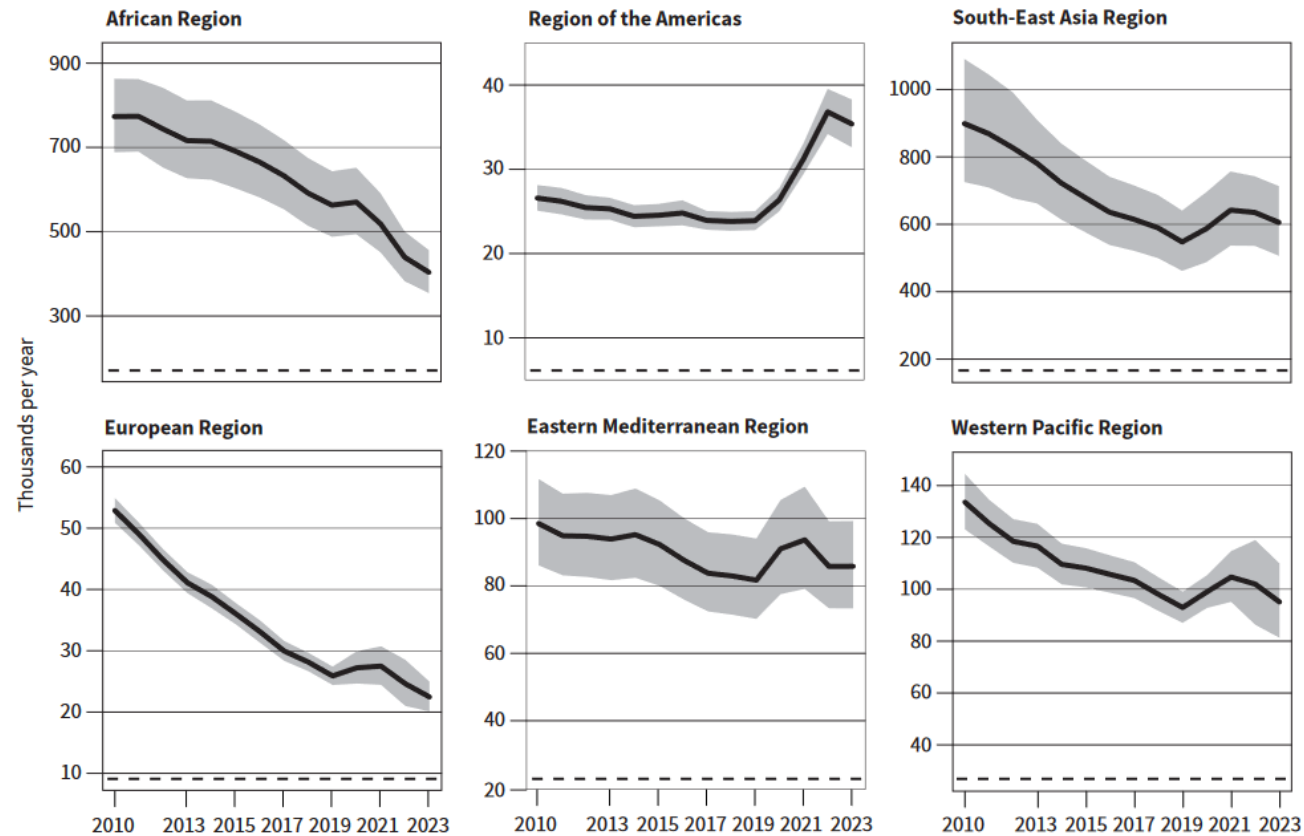

[a] Deaths from TB among people with HIV are officially classified as deaths caused by HIV/AIDS, with TB as a contributory cause.

TB death trends by region

Trends in the estimated absolute number of TB deaths (in thousands, including deaths among people with HIV[a]) by WHO region, 2010–2023

The horizontal dashed line shows the 2025 milestone of the End TB strategy, which is a 75% reduction in the total number of TB deaths between 2015 and 2025. Shaded areas represent 95% uncertainty intervals.
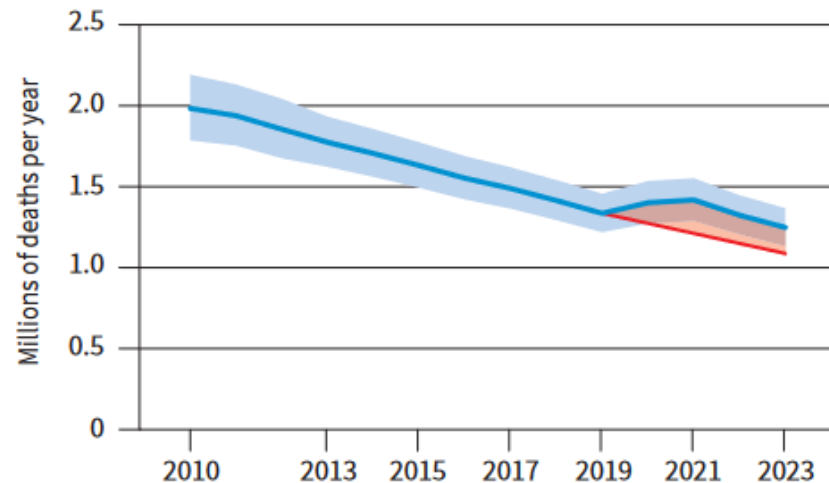
[a] Deaths from TB among people with HIV are officially classified as deaths caused by HIV/AIDS, with TB as a contributory cause.

TB deaths, COVID, HIV

Estimated number of excess TB deaths during the COVID-19 pandemic and its aftermath, 2020–2023

The **blue** shaded area represents the 95% uncertainty interval of the actual number of deaths estimated to have been caused by TB; the **red** line shows the estimated number of deaths that would have been caused by TB in the absence of the COVID-19 pandemic; the **red** shaded area shows the excess number of deaths caused by TB due to disruptions associated with the COVID-19 pandemic.

Global trends in the estimated number of deaths caused by TB and HIV (in millions), 2010–2023[a,b]

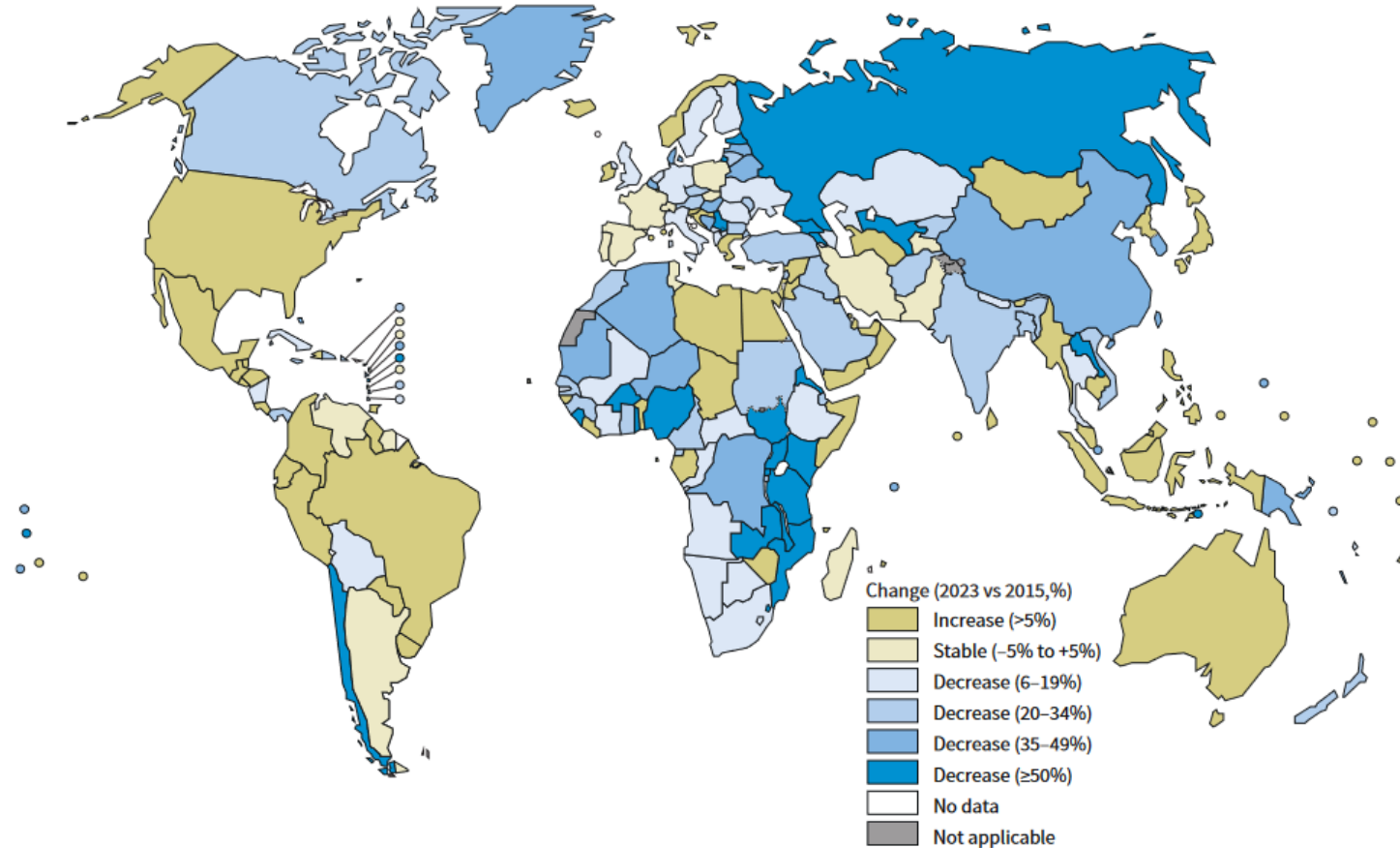Shaded areas represent 95% uncertainty intervals.
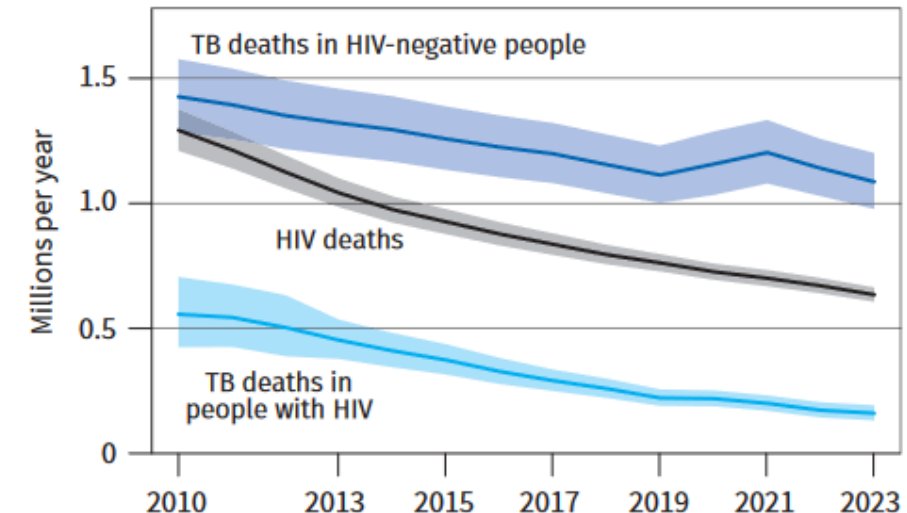
[a] For HIV/AIDS, the latest estimates of the number of deaths in 2023 that have been published by UNAIDS are available at http://www.aids.org/en/ (accessed 12 July 2024). For TB, the estimates for 2023 are those published in this report.

[b] Deaths from TB among people with HIV are officially classified as deaths caused by HIV/AIDS in the International Classification of Diseases.

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Change in deaths (%)

Change (%) in the estimated number of deaths caused by TB (among HIV-negative people and people with HIV), 2023 compared with 2015

Change (2023 vs 2015,%)
- Increase (>5%)
- Stable (–5% to +5%)
- Decrease (6–19%)
- Decrease (20–34%)
- Decrease (35–49%)
- Decrease (≥50%)
- No data
- Not applicable

Treatment saving lives

Cumulative number of deaths averted by a) TB treatment as well as b) antiretroviral therapy for people diagnosed with TB who were also living with HIV, 2010–2023 (in millions), globally and for WHO regions

WHO REGION	PEOPLE WITHOUT HIV		PEOPLE WITH HIV[a]		TOTAL	
	BEST ESTIMATE	UNCERTAINTY INTERVAL	BEST ESTIMATE	UNCERTAINTY INTERVAL	BEST ESTIMATE	UNCERTAINTY INTERVAL
African Region	5.9	4.9–6.9	5.1	4.4–5.8	11	9.8–12
Region of the Americas	1.2	1.1–1.4	0.25	0.23–0.27	1.5	1.4–1.6
South-East Asia Region	19	16–22	0.91	0.58–1.2	20	17–23
European Region	1.2	1.0–1.3	0.23	0.20–0.27	1.4	1.2–1.5
Eastern Mediterranean Region	3.9	3.4–4.4	0.048	0.034–0.063	3.9	3.4–4.5
Western Pacific Region	9.7	8.7–11	0.33	0.28–0.38	10	9.0–11
Global	**41**	**36–46**	**6.8**	**5.9–7.7**	**48**	**43–53**

[a] Deaths from TB among people with HIV are officially classified as deaths caused by HIV/AIDS (with TB as a contributory cause). This is the reason why the estimates make a clear distinction between people with and without HIV.

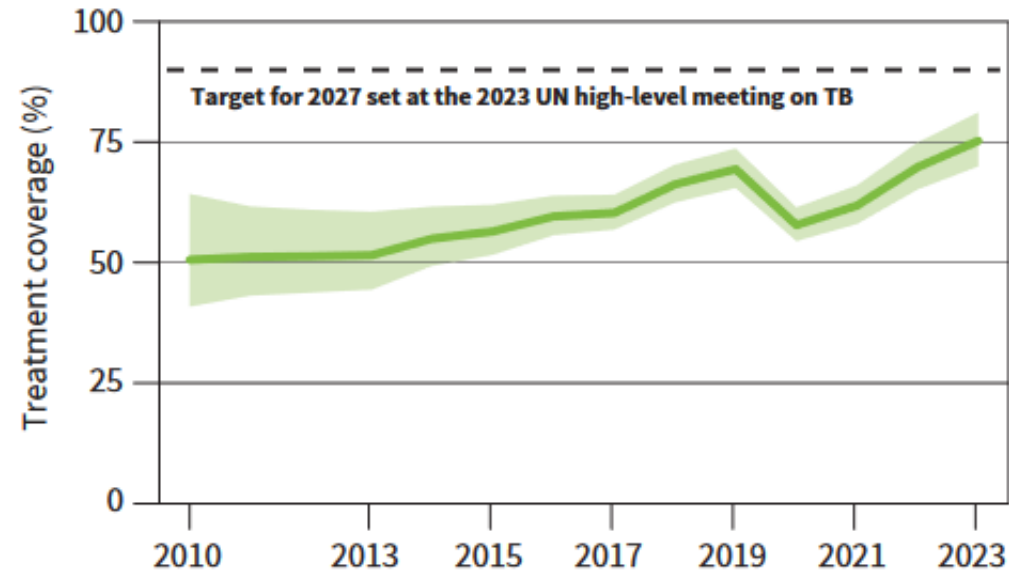**Indiana Department of Health**

Global treatment coverage

Of the 30 high TB burden countries, those with the highest levels (>80%) of treatment coverage include:

- Brazil, India, Mozambique, Papua New Guinea, Sierra Leone, Uganda, and Zambia

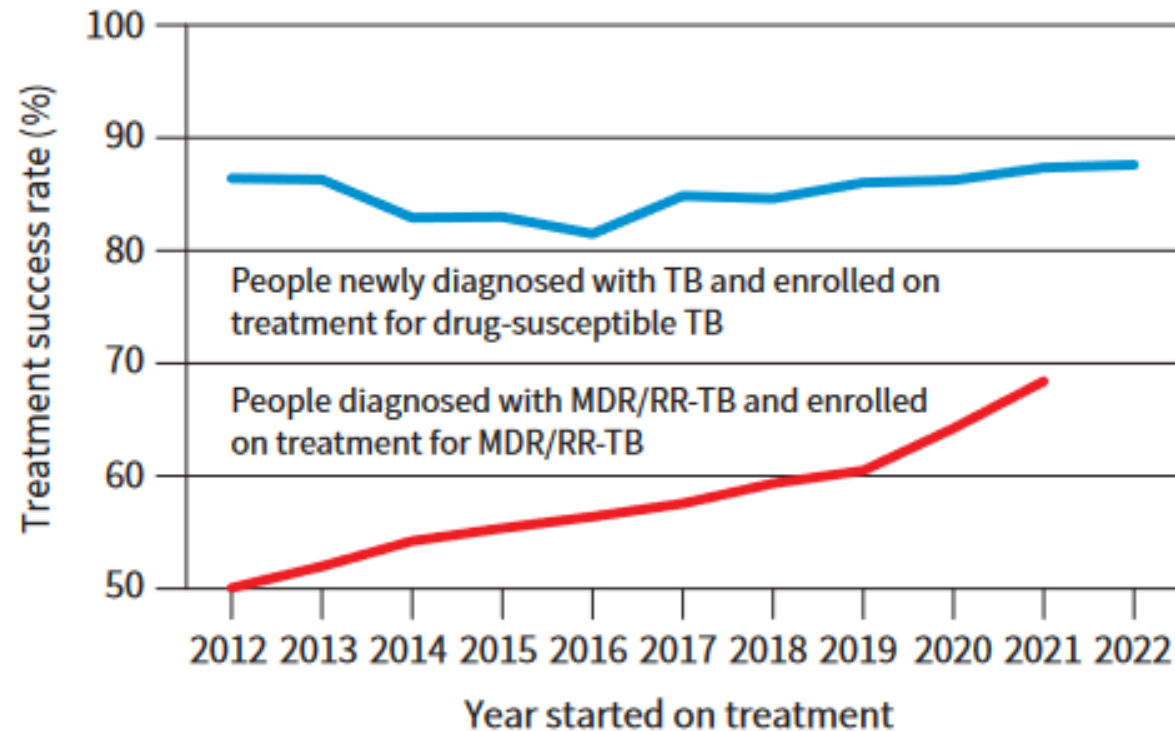## Global trend in TB treatment coverage,[a] 2010–2023

The shaded area represents the 95% uncertainty interval.

[a] Notifications of people with a new or relapse episode of TB as a percentage of estimated incident TB cases, in the same year.

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TB treatment success rates increasing

Global success rates for people treated for TB, 2012–2022[a]

People newly diagnosed with TB and enrolled on treatment for drug-susceptible TB

People diagnosed with MDR/RR-TB and enrolled on treatment for MDR/RR-TB

[a] 2012 is the first year for which WHO collected data about treatment outcomes for MDR/RR-TB.

MDR/RR treatment

Worldwide 175,923 people with MDR/RR-TB were enrolled in treatment in 2023

- Slight fall of 1.1% from 2022
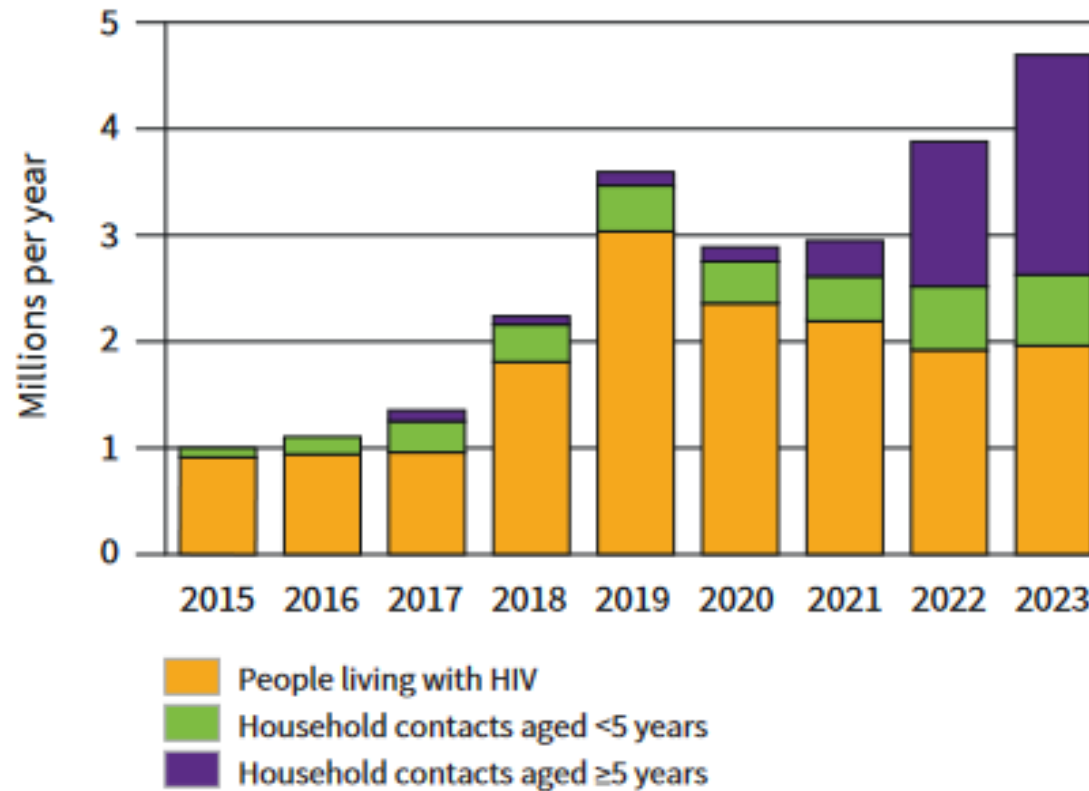
- Below pandemic level of 181,533 in 2019

Global number of people diagnosed with MDR/RR-TB (blue) and number enrolled on an MDR-TB treatment regimen (red), compared with estimates of the global number of incident cases of MDR/RR-TB (95% uncertainty interval shown in green), 2015–2023[a]
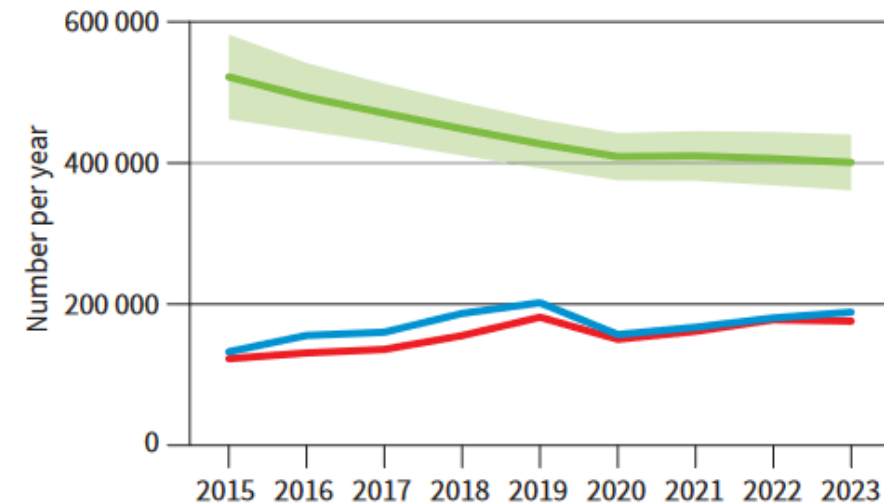
[a] The time period corresponds to the period for which estimates of the incidence of MDR/RR-TB are available.

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Is anyone taking preventive treatment?

The global number of people provided with TB preventive treatment, 2015–2023

Legend:
- People living with HIV
- Household contacts aged <5 years
- Household contacts aged ≥5 years

Cases and risk factors

Global estimates of the number of people with a new episode of TB (incident cases) attributable to five risk factors,[a] 2023
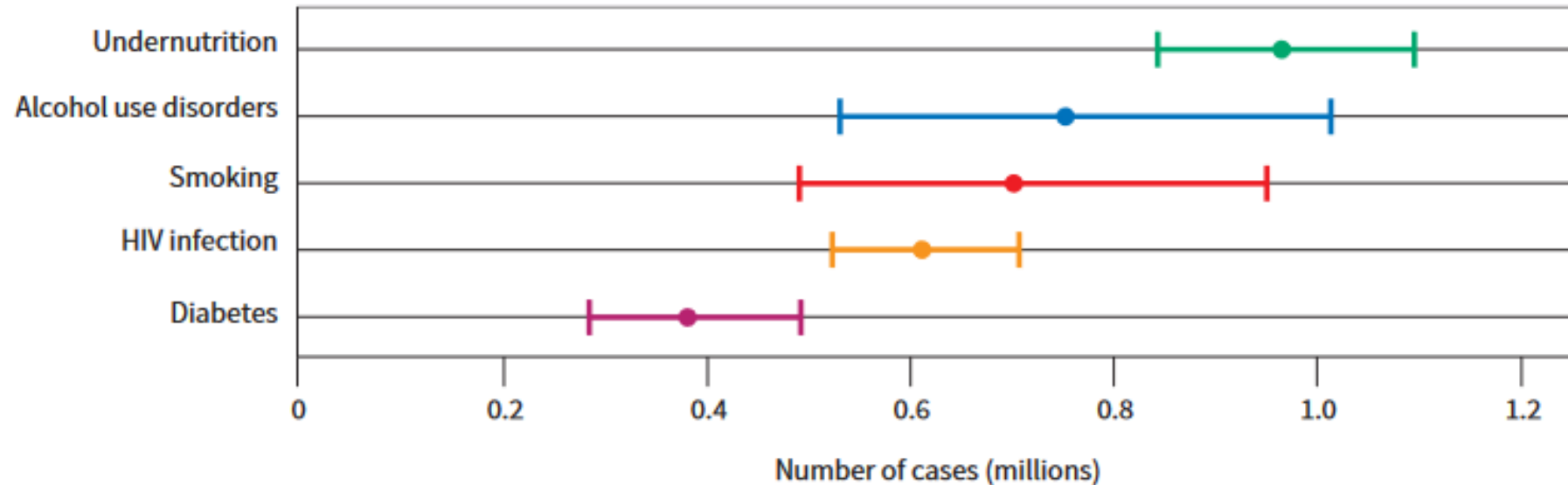

[a] Undernutrition is defined as a low body mass index for people aged ≥5 years. Underweight (low weight-for-age), wasting (low weight-for-height) and stunting (low height-for-age) are used to define undernutrition for people aged under 5 years. Sources of data used to produce estimates include journal articles; the World Bank SDG database (http://datatopics.worldbank.org/sdgs/); the WHO Global Health Observatory; and the WHO World Health Data Hub (https://data.who.int/).

Risk factor example – GDP and malnourishment

The relationship between two SDG-related indicators and TB incidence per 100 000 population,[a,b] 2023

Each dot represents a country or area.
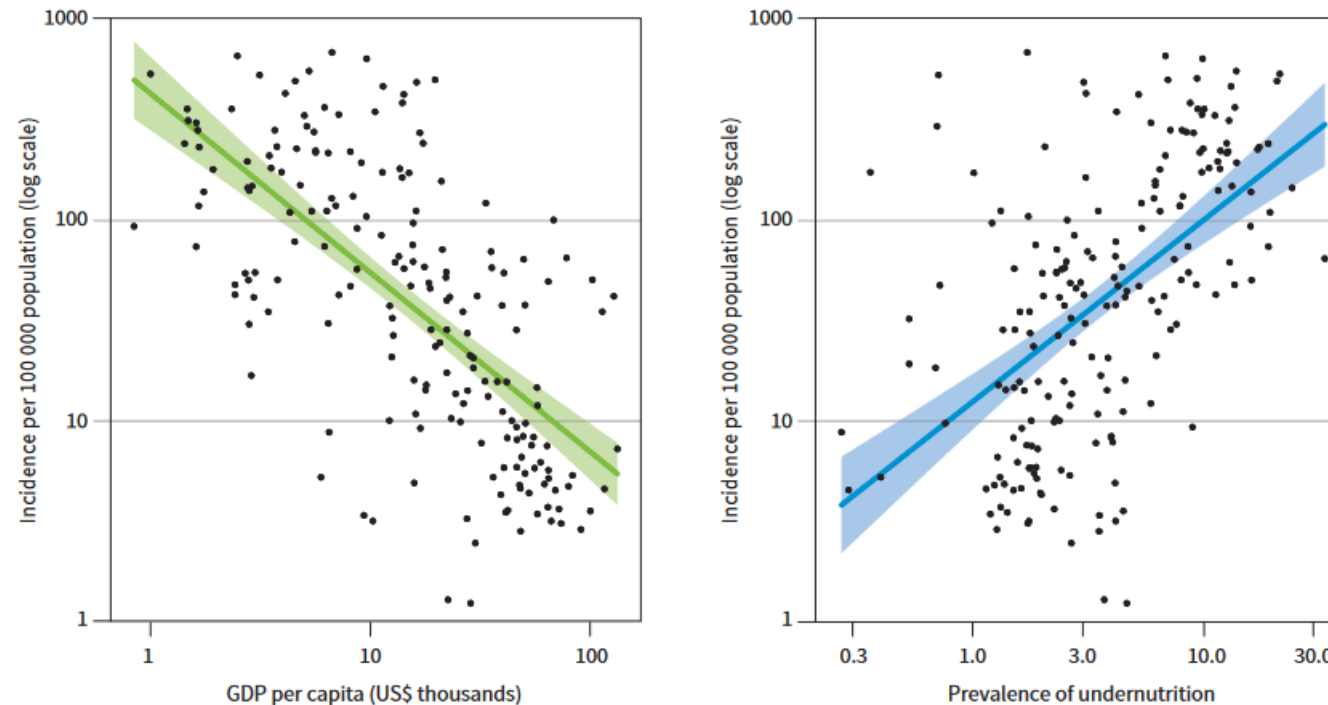
[a] The year of data used for GDP per capita and the population prevalence of undernutrition is the latest year for which data are available from the World Bank (https://data.worldbank.org/) and the WHO Global Health Observatory (https://www.who.int/data/gho), respectively.

[b] Undernutrition is defined as a low body mass index for people aged ≥5 years. The prevalence of undernutrition in the figure is the percentage of people aged ≥18 years with a body mass index <18.5.

Estimates of the percentage of people with TB and their households facing catastrophic total costs,[a] national surveys completed 2015–2024[b]
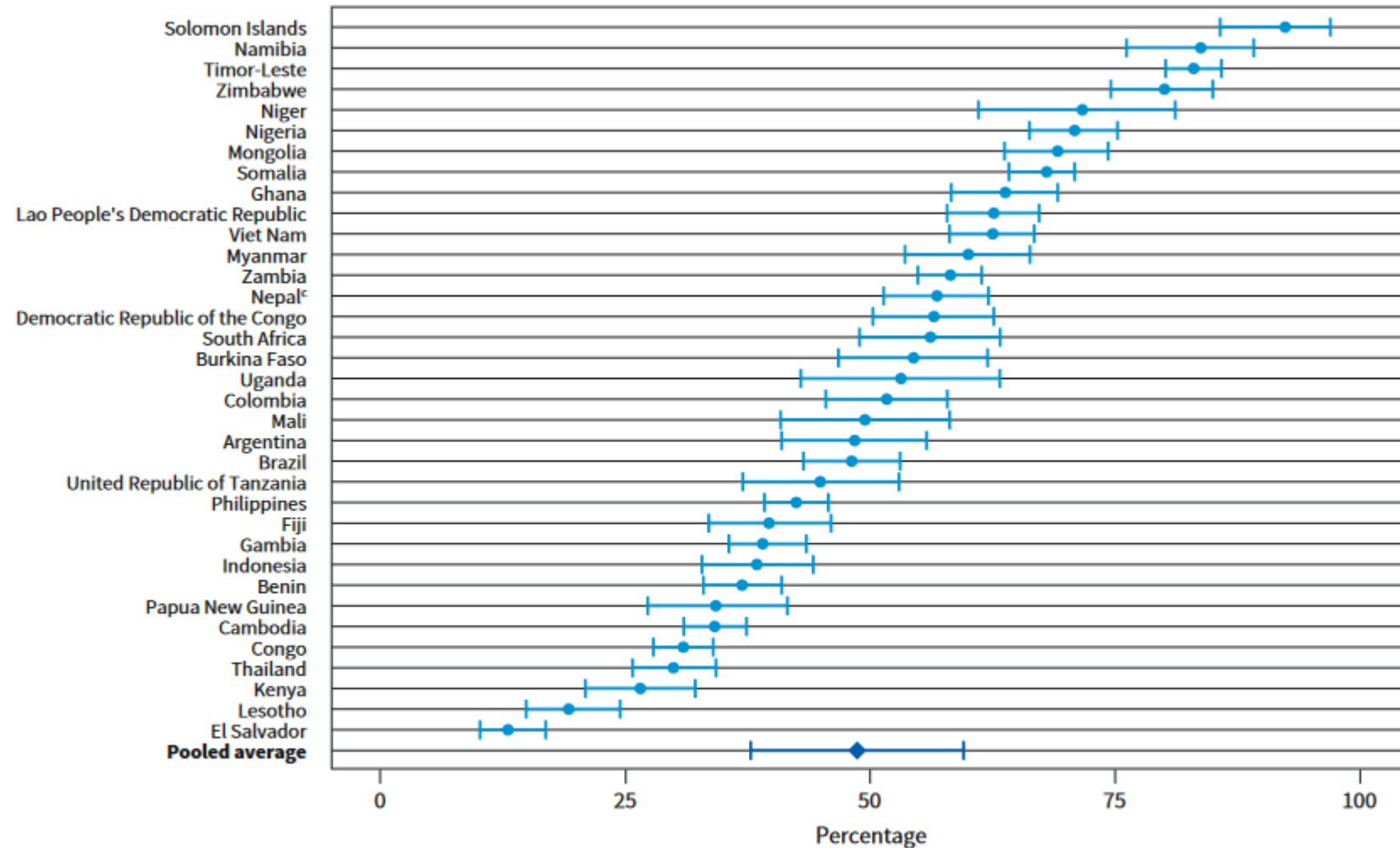
a   Defined as direct medical expenditures, direct nonmedical expenditures and indirect costs (e.g. income losses) that sum to >20% of annual household income. This indicator is not the same as the SDG indicator for catastrophic health expenditures; see **Box 3**.

b   The percentages are shown for 35 national surveys that have been completed and for which data have been reported. Data were not available for China and the Republic of Moldova.

c   Results for Nepal are provisional.

In Conclusion

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Message from WHO Global TB Program Director

Dr. Tereza Kasaeva:

"WHO's Global tuberculosis report for 2024 reveals a sobering reality: TB has probably returned to being the world's leading infectious disease killer. We are confronted with a multitude of formidable challenges..... Only through our collective determination can we make significant strides in our battle to end TB once and for all."

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Questions?

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