About the Meningitis Progress Tracker & Our Data Sources

What is the Meningitis Progress Tracker?

In 2020, countries around the world agreed to take action against meningitis. These countries committed to a global plan, led by the World Health Organization (WHO), to dramatically improve meningitis prevention, diagnosis, treatment and aftercare. The plan – WHO Global Road Map to Defeat Meningitis by 2030 – was officially launched in September 2021.

Meningitis Research Foundation launched the Meningitis Progress Tracker to bring available data on meningitis into one place for the first time. Supported by the WHO as a tool to help deliver the Road Map, the Meningitis Progress Tracker uses data to tell the story of the burden and impact of meningitis – providing evidence for action to defeat this devastating disease.

The latest version of the Meningitis Progress Tracker was developed following interviews and workshops with users in academia, civil society, global funders, data holders, country/regional experts and global health agencies.

Who can use the Meningitis Progress Tracker?

Anyone can use the Meningitis Progress Tracker. It aims to provide accessible data that people can use to advocate for the policies and funding needed to defeat meningitis.

We know that data on the burden of meningitis can be challenging to interpret. This is due in part to there being multiple causes of meningitis, and because the data comes from different sources. With the Meningitis Progress Tracker, for the first time, we bring the story of meningitis together into one place in way that everyone can understand.

Since its launch the Meningitis Progress Tracker has been accessed more than 56,000 times from users in 117 different countries. Data from the Meningitis Progress Tracker has already been used to help WHO identify target countries where gains from the Road Map implementation will likely have the most impact.

What data sources are used in the Meningitis Progress Tracker?

The Meningitis Progress Tracker uses several different data sources. Data is continually updated based on the frequency of data release or data availability. A reference for data sources is included with every visualisation in the Meningitis Progress Tracker. More information about the data sources we have used is below in the 'About Our Data' Sources section.

About Our Data Sources

Institute of Health Metrics and Evaluation (IHME) Global burden of disease study 2021: 2000-2021 estimates

Within the main pages of the Meningitis Progress Tracker cases, deaths and impairment data are based on estimates from the Institute for Health Metrics and Evaluation's Global Burden of Disease Study 2021 (IHME GBD 2021). Data is continually updated based on how often it is made available.

The Meningitis Progress Tracker reports 'Meningitis' estimates (which includes bacterial and viral meningitis) and meningitis estimates subcategorised into the following causes:

- Meningococcal meningitis
- Pneumococcal meningitis
- Haemophilus influenzae meningitis
- Group B streptococcal meningitis
- Other bacterial and viral causes of meningitis

Incidence (cases/100,000 population) and mortality (deaths/100,000 population) are also provided. Mortality rates reported in the tracker are crude death rates. For more information:

Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2021 (GBD 2021) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME) [cited 2021; Available from: https://www.healthdata.org/research-analysis/about-gbd]

World Health Organization Global Health Estimates (WHO GHE): 2019 estimates

WHO GHE estimates are included in the data explorer. WHO GHE estimate deaths from meningitis for all ages. WHO GHE do not produce meningitis estimates broken down by cause nor do they produce estimates for number of cases or incidence of disease.

WHO GHE report both age-standardised death rate and crude death rates. The rates reported in the tracker are crude death rates calculated from United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects: The 2019 revision. New York, United Nations, 2019.

For more information:

Global Health Estimates 2020: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2019. Geneva, World Health Organization; 2020 Available from: https://www.who.int/data/global-health- estimates

World Health Organization and Maternal Child Epidemiology Estimation (WHO-MCEE): 2000-2021 estimates

WHO-MCEE estimate deaths and mortality rates from meningitis/encephalitis in children aged under five as one cause category “meningitis/encephalitis”. WHO-MCEE do not produce meningitis estimates broken down by cause nor do they produce estimates for number of cases or incidence of disease.

Maternal Child Epidemiology Estimation and Johns Hopkins University (MCEE/JHU): 2000-2015 estimates

MCEE/JHU have modelled the global burden of Streptococcus pneumoniae and Haemophilus influenzae type b (Hib) meningitis in children aged 1-59 months. Estimates of deaths and cases from pneumococcal and Hib meningitis are derived from the WHO-MCEE meningitis/encephalitis death envelope with additional cases and deaths added to account for deaths and cases of meningitis in people living with HIV.

MCEE/JHU incidence and mortality rates are reported per 100,000 population.

MCEE/JHU do not produce estimates of syndromic all-cause meningitis, nor of neonatal sepsis. For more information:
Wahl, B., et al., Burden of Streptococcus pneumoniae and Haemophilus influenzae type b disease in children in the era of conjugate vaccines: global, regional, and national estimates for 2000-15. Lancet Glob Health, 2018. 6(7): p. e744-e757.

Countries in the six WHO regions

WHO African Region https://www.who.int/about/regions/afro/en/

WHO European Region https://www.who.int/about/regions/euro/en/

WHO Eastern Mediterranean Region https://www.who.int/about/regions/emro/en/

WHO Region of the Americas https://www.who.int/about/regions/amro/en/

WHO South East Asia Region https://www.who.int/about/regions/searo/en/

WHO Western Pacific Region https://www.who.int/about/regions/wpro/en/

Country Income Classification

Source: World Bank. (2024). World Bank Country and Lending Groups. Washington, DC: World Bank Group. Available at: https://datahelpdesk.worldbank.org/knowledge-base/articles/906519

The World Bank uses Gross National Income (GNI) per capita thresholds for the 2024 fiscal year:

- Low income: $1,135 or less
- Lower middle income: $1,136 to $4,465
- Upper middle income: $4,466 to $13,845
- High income: $13,846 or more.

Universal vaccine introductions, programme types and vaccine coverage

Pneumococcal and Hib vaccine data

Countries that have introduced universal immunisation programmes for PCV and Hib from IVAC Viewhub:
PCV - https://view-hub.org/vaccine/pcv?set=current-program-type&group=vaccine-introduction&category=pcv Accessed August 2025.
Hib - https://view-hub.org/vaccine/hib?set=current-program-type&group=vaccine-introduction&category=hib Accessed August 2025

Coverage data sourced from WHO/UNICEF estimates of national immunization coverage, published July 2025 https://www.who.int/teams/immunization-vaccines-and-biologicals/immunization-analysis-and-insights/global-monitoring/immunization-coverage/who-unicef-estimates-of-national-immunization-coverage Accessed July 2025.

Meningococcal vaccine data

We collected data on routine meningococcal vaccination programmes (including vaccine type and target age groups) using a systematic approach to make sure the information is accurate and up to date.

How we gathered this information:

1. Finding vaccination programmes

We started by identifying countries with meningococcal vaccination programmes using the World Health Organization vaccine schedule database. You can find this at https://immunizationdata.who.int/global?topic=Vaccination-schedule&location= (accessed July 2025).

2. Checking official sources

For each country, we searched official government websites to verify programme details through ministry of health and public health agency sources. We've included the official source URL in the visual so you can check the information yourself. We removed countries where official sources showed no active meningococcal vaccination programme.

3. Cross-checking European data

For European countries, we double-checked our information using the ECDC vaccine scheduler. You can access this at https://vaccine-schedule.ecdc.europa.eu/ (accessed July 2025). We added any countries found in ECDC data that weren't in the WHO database and verified them using the same process.

4. Reviewing recent research

We also reviewed recent research to find any additional programmes or policy changes that might not be in official databases yet. The key studies we looked at include:

- Isitt C, Cosgrove CA, Ramsay ME, Ladhani SN. Success of 4CMenB in preventing meningococcal disease: evidence from real-world experience. Arch Dis Child. 2020 Aug;105(8):784-790.
- Parikh, S., Campbell, H., Bettinger, J.A., Harrison, L.H., Marshall, H.S., Martinon-Torres, F., Safadi, M.A., Shao, Z., Zhu, B., von Gottberg, A. and Borrow, R., 2020. The ever-changing epidemiology of meningococcal disease worldwide and the potential for prevention through vaccination. Journal of Infection.
- Sulis, G., Horn, M., Borrow, R. and Basta, N.E., 2022. A comparison of national vaccination policies to prevent serogroup B meningococcal disease. Vaccine.
- Borrow R, Findlow J. The important lessons lurking in the history of meningococcal epidemiology. Expert Rev Vaccines. 2024 Jan-Dec;23(1):445-462.

Any countries we found through research were verified using official government sources following the same process.

Meningitis belt data

Data on routine meningococcal vaccination programmes in the meningitis belt was cross checked with the World Health Organization Intercountry Support Team – West Africa. Meningitis Weekly Bulletin, week 13 2025.

SDI Index

SDI is a summary measure that identifies where countries sit on the spectrum of development. Expressed on a scale of 0 to 1, SDI is a composite average of the rankings of the incomes per capita, average educational attainment, and fertility rates. The lower the SDI score, the less developed a country is considered to be.

Source: Global Burden of Disease Study 2021 (GBD 2021) Socio-Demographic Index (SDI) 1950–2021.

Years of Life lost (YLLs)

Years of life lost (YLLs) are years lost due to premature mortality. YLLs are calculated by subtracting the age at death from the longest possible life expectancy for a person at that age. For example, if the longest life expectancy for men in a given country is 75, but if man dies of meningitis aged 60, this would be 15 years of life lost due to meningitis.

Source: Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2021 (GBD 2021) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME)

Years Lived with Disability (YLDs)

Years lived with disability (YLDs) can also be described as years lived in less than ideal health. It is measured by taking the prevalence of the condition multiplied by the disability weight for that condition. Disability weights reflect the severity of different conditions and are developed through surveys of the general public.

Source: Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2021 (GBD 2021) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME)

Disability adjusted life years (DALYs)

Disability adjusted life years take into account loss of health as a result of disability following disease and life lost as a result of premature death.

DALYs are the sum of years of life lost from disease (YLLs) and years lived with disability (YLDs)

Source: Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2021 (GBD 2021) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME)

For more information about data sources please contact Claire Wright, MRF Health Insights Manager – clairew@meningitis.org