Meningitis Research Foundation

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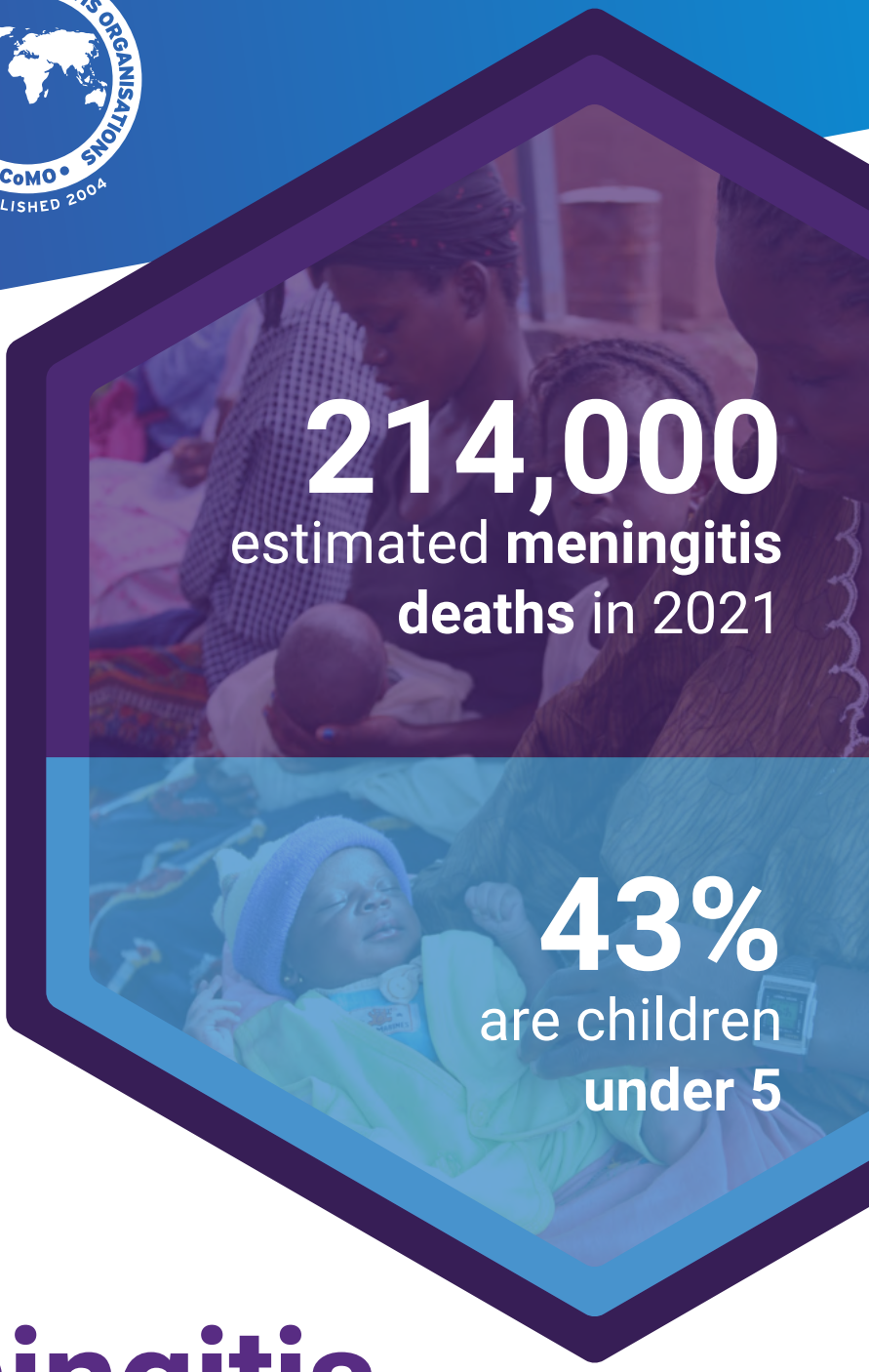


Data insight report: Issue 1

The Meningitis Progress Tracker

Harnessing global vaccine data to defeat meningitis

tracker.meningitis.org

Image: Mali Adrian Brooks

Vaccines that prevent bacterial meningitis: availability and opportunities

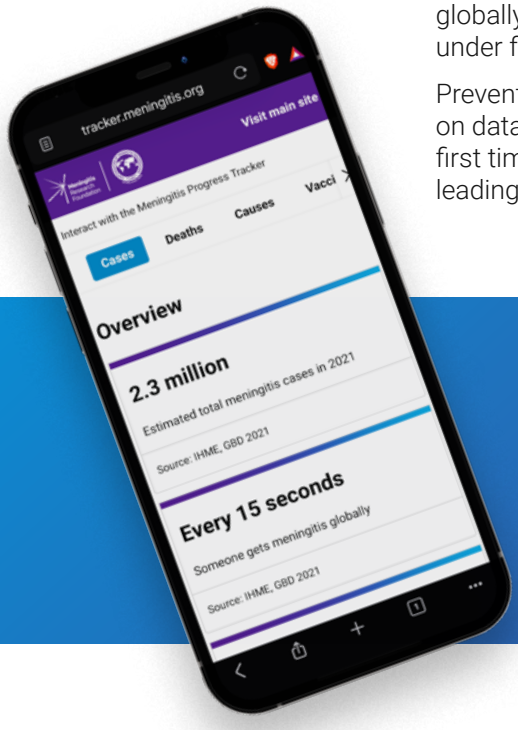
Most meningitis deaths can be prevented, but progress lags behind other infectious diseases. Between 2000 and 2021, meningitis deaths fell by 45%, while deaths from measles fell by 89% and tetanus by 79%.[i] [ii]

Advocates can use our first *Data insight report* to call for equitable, locally-appropriate vaccination programmes – saving lives and helping to defeat meningitis.

Meningitis is the swelling of the lining of the brain and spinal cord (the meninges) and is usually caused by a bacterial, fungal or viral infection.[iii] Bacterial meningitis is a life-threatening disease. Globally, bacterial meningitis kills 1 in 6 people who contract it and leaves 1 in 5 people with lifelong disabilities.[iv]

While many different bacteria can cause meningitis, data in the Meningitis Progress Tracker shows that four bacteria - meningococcus, pneumococcus, *Haemophilus influenzae* and group B streptococcus (GBS) - are responsible for more than half of all bacterial meningitis deaths globally. Forty-three percent of all meningitis deaths occur in children under five years of age.[v]

Prevention through vaccination is the best way to protect people. Drawing on data from the Meningitis Progress Tracker this report shows, for the first time, the global picture of the availability of vaccines that prevent the leading causes of bacterial meningitis.



Meningitis Progress Tracker

The Meningitis Progress Tracker, hosted by the Meningitis Research Foundation, is an interactive global dashboard that compiles multiple data sources for meningitis to equip civil society with the insights they need to accelerate progress toward defeating meningitis worldwide.

Vaccines that prevent *Haemophilus influenzae* meningitis

Haemophilus influenzae meningitis is a deadly form of bacterial meningitis caused by *Haemophilus influenzae* bacteria. There are six different groups or 'serotypes' (a to f) of this type of meningitis. *Haemophilus influenzae* type b (Hib) is the most virulent type of the bacteria, causing meningitis in 50-65% of infections.[vi] Most cases of Hib meningitis occur in children.

WHO recommends that all countries include Hib conjugate vaccines as part of routine childhood immunisation programmes.[vii] Currently there are no vaccines available for other *Haemophilus influenzae* serotypes.

The importance of conjugate vaccines and community immunity

Conjugate vaccines have played a critical role in reducing bacterial meningitis because they work well in children and stop the spread of the bacteria which can cause meningitis. When a large proportion of a population is vaccinated with a conjugate vaccine, it reduces the opportunity for bacteria to pass from person to person, helping to develop community immunity, which can even protect unvaccinated individuals.

Global availability and coverage of Hib

The Meningitis Progress Tracker reports that 193 out of 194 WHO member countries now have a vaccine that protects against Hib meningitis in their childhood immunisation programmes.

The Immunisation Agenda 2030 (IA2030), a global strategy endorsed by the World Health Assembly, aims to maximise the life-saving impact of vaccines. The IA2030 sets a global target of 90% coverage for Hib vaccines by 2030. Higher coverage is important because it increases community immunity.

Data in the Meningitis Progress Tracker shows that globally 77% of children received all three doses of Hib vaccine in 2023, with the highest coverage in WHO's Europe region (94%) and the lowest in the Western Pacific region (33%).

Thanks to the vaccine, Hib meningitis has now been virtually eliminated from countries with high coverage; and globally cases of *Haemophilus influenzae* meningitis have fallen by 60%.[viii] Since their introduction in 1989, Hib vaccines have saved over three million lives from all Hib disease – not just meningitis.[ix]

Despite these successes, challenges remain. Hib is still a major cause of serious disease in children and it's vital to maintain high uptake and ensure children get the required three doses of the vaccine.

How can the Meningitis Progress Tracker help you?

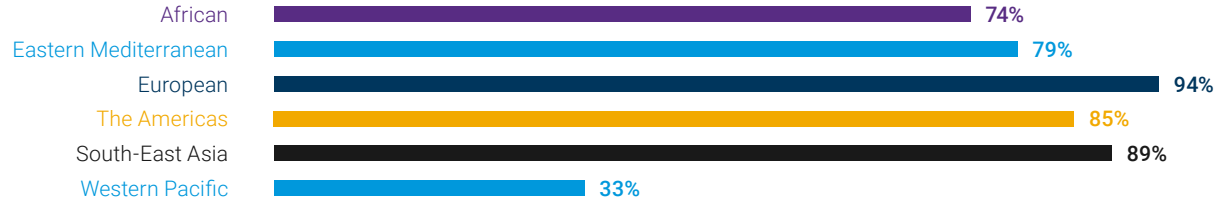
Every child should receive three doses of the Hib vaccine to protect them against meningitis and other *Haemophilus influenzae* infections.

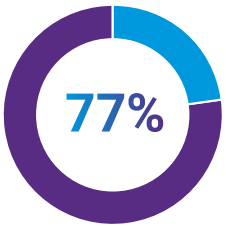
Check the 'My Country' tab on the Meningitis Progress Tracker to find out if your country has introduced Hib, and if it is on track to meet the 90% coverage target.

Download the 'My Country' page and use it to ask your Ministry of Health what their plans are to introduce, or improve coverage of, Hib.

WHO/UNICEF estimates of national immunisation coverage 2023

% of children under 12 receiving three doses of Hib by Region





Proportion of children who received three doses of Hib vaccines in 2023

Vaccine coverage refers to the estimated proportion of children globally, aged under 12, who have received all three doses of Hib

Source: WHO/UNICEF Estimates of National Immunisation Coverage, 2023 Revision, Last updated July 2024

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Countries have a vaccine that protects against Hib meningitis universally available to all children in their national immunisation programme

Source: IVAC, John Hopkins Bloomberg School of Public Heath, July 2024

The WHO Global Road Map to Defeat Meningitis by 2030

In 2020, countries around the world committed to plan to take action against meningitis. Led by WHO, the plan – **WHO Global Road Map to Defeat Meningitis by 2030** – was officially launched in September 2021. The Road Map includes visionary goals to eliminate outbreaks and epidemics, reduce cases of vaccine preventable bacterial meningitis by 50% and deaths by 70%, and reduce disability and improve quality of life after meningitis.

Vaccines that prevent pneumococcal meningitis

Pneumococcal meningitis is one of the most life-threatening causes of bacterial meningitis. On average around 83% of pneumococcal meningitis cases occur in children.[x] Pneumococcal Conjugate Vaccines (PCVs) work well in children and provide community immunity.

The WHO recommends that all countries include PCVs within their childhood immunisation schedules.[xi] PCVs have been extremely effective in reducing cases and deaths from all pneumococcal disease including meningitis – saving more than 1.5 million lives since their introduction in 2000.[xii]

Global PCV availability and coverage

Data from the Meningitis Progress Tracker shows that 159 out of 194 WHO member countries have a vaccine that protects against pneumococcal meningitis universally available to all children in their national immunisation programme.

IA2030 sets a global target for countries to achieve 90% coverage of PCV by 2030. Higher coverage is important because it increases community immunity.

Data in the Meningitis Progress Tracker shows that globally, 65% of children under twelve have received three doses of a PCV vaccine, with the highest coverage in WHO's European region (86%) and the lowest in Western Pacific region (26%).[xiii]

Some low and middle-income countries have been slow to introduce PCVs and have faced challenges in meeting the IA2030 90% target. The **WHO Global Road Map to Defeat Meningitis by 2030** includes activities to accelerate the introduction of new effective and affordable pneumococcal vaccines.

Gavi – the vaccine alliance

Gavi is a global health partnership that improves access to vaccines in low- and middle-income countries. It plays a critical role in expanding the use of meningitis vaccines by funding and supporting immunisation programmes. Gavi support helps to prevent outbreaks, save lives and reduce the burden of meningitis, particularly in vulnerable populations.

How can the Meningitis Progress Tracker help you?

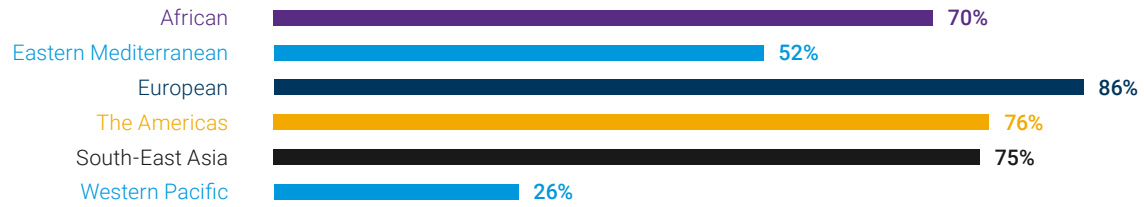
Every child should receive the full course of PCV doses to protect them against meningitis and other pneumococcal diseases.

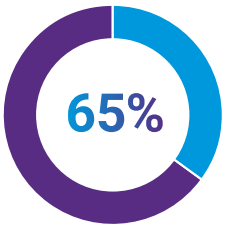
Check the 'My Country' tab on the Meningitis Progress Tracker to find out if your country has introduced pneumococcal vaccines for children, and if it is on track to meet the 90% coverage target.

Download the 'My Country' page and use it to ask your Ministry of Health what their plans are to introduce or improve coverage of PCVs.

WHO/UNICEF estimates of national immunisation coverage 2023

% of children under 12 receiving three doses of pneumococcal conjugate vaccines (PCV) by Region





Proportion of children who received three doses of PCV vaccines in 2023

Vaccine coverage refers to the estimated proportion of children globally, aged under 12, who have received all three doses of PCV

Source: WHO/UNICEF Estimates of National Immunisation Coverage, 2023 Revision, Last updated July 2024

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Countries have a vaccine that protects against PVC meningitis universally available to all children in their national immunisation programme

Source: IVAC, John Hopkins Bloomberg School of Public Heath, July 2024

GBS meningitis and the need for a vaccine

Group B streptococcal (GBS) meningitis is a very serious illness that can cause death and long-term disability in survivors. In newborns, whose immune systems are still developing, GBS bacteria can lead to meningitis, sepsis and other serious infections.

GBS is an important cause of disease in every region of the world, but the burden is highest in sub-Saharan Africa and South Asia.[xiv] There is currently no vaccine to protect against GBS but several promising vaccines are in development.

The Meningitis Progress Tracker now includes estimates for GBS cases and deaths. Keep checking the Meningitis Progress Tracker for future updates on GBS vaccine data.

Vaccines to prevent meningococcal meningitis

Meningococcal meningitis is the most common cause of bacterial meningitis and can have a devastating impact on families and individuals. There are several different serogroups, the six most common of which are A, B, C, W, X and Y. Certain serogroups of meningococcal bacteria are more common in different parts of the world.

Not all meningococcal disease is vaccine-preventable but vaccines are available which protect against different serogroups.

Global availability of meningococcal vaccines

There is no universal recommendation from the WHO for the routine use of meningococcal vaccines. Countries decide which vaccines to provide based on local data about how widespread disease caused by a particular serogroup of meningococcal bacteria might be, and the age groups most likely to be affected by it.

While approaches to meningococcal vaccination vary worldwide, two key vaccines – MenACWY and MenB – have emerged as important tools in preventing this deadly disease.

MenACWY conjugate vaccines – protection beyond the individual

According to the Meningitis Progress Tracker, 32 middle- and high-income countries have introduced highly-effective MenACWY conjugate vaccines for infants or toddlers, protecting them against four significant serogroups of meningococcal disease.

Twenty-seven countries have implemented MenACWY vaccination programmes for adolescents, providing critical protection for vaccinated individuals and helping to build community immunity because teenagers are most likely to transmit the bacteria to others.

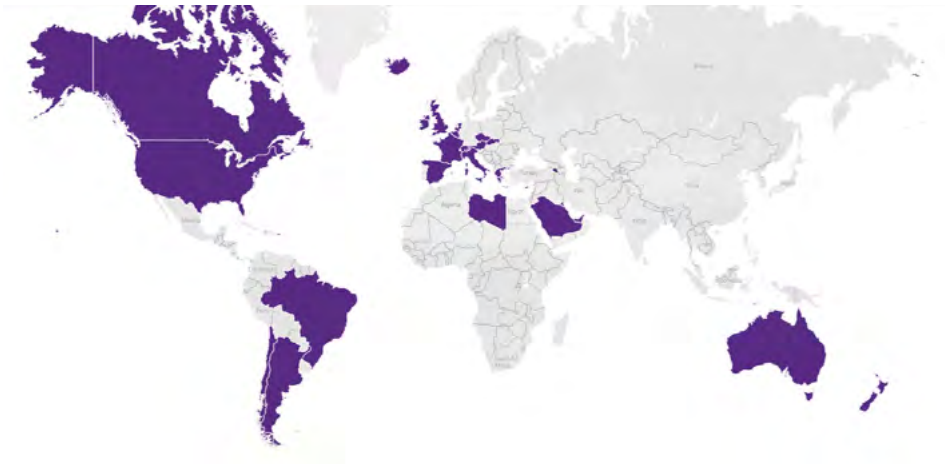
MenB – the next step in the race to defeat meningococcal meningitis

Meningitis caused by group B meningococcal bacteria is the most common cause of meningococcal disease in many regions. Despite this, MenB vaccination programmes are significantly less widespread than MenACWY programmes. As of July 2024, only eleven countries had introduced MenB into their routine vaccination programmes.

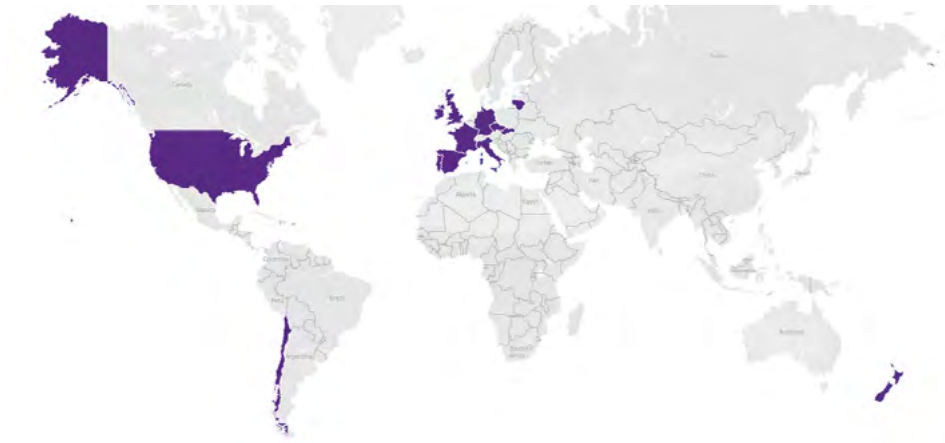
New vaccines offering comprehensive protection against all five major groups of disease-causing bacteria (MenABCWY) have recently been approved (Oct 2023). These new vaccines could help increase coverage beyond current rates for separate MenACWY and MenB vaccines by reducing the cost of meningitis vaccination programmes and simplifying vaccine schedules.

Countries that have meningococcal vaccines in their national immunisation programmes

Vaccine: MenACWY



Vaccine: MenB



Source: Analysis of multiple sources by Meningitis Research Foundation. Last Updated July 2024

How can the Meningitis Progress Tracker help you?

Without universal WHO recommendations for the use of meningococcal vaccines, each country makes their own decisions about what to offer. The Meningitis Progress Tracker can help you make the case for meningococcal vaccines in your country.

Use the 'Vaccines' page of the Meningitis Progress Tracker to find out which vaccines (if any) are available in your country and for which age groups.

Use this information to start a conversation with your Ministry of Health. Ask them why certain vaccines are not available, or why certain age groups are not protected.

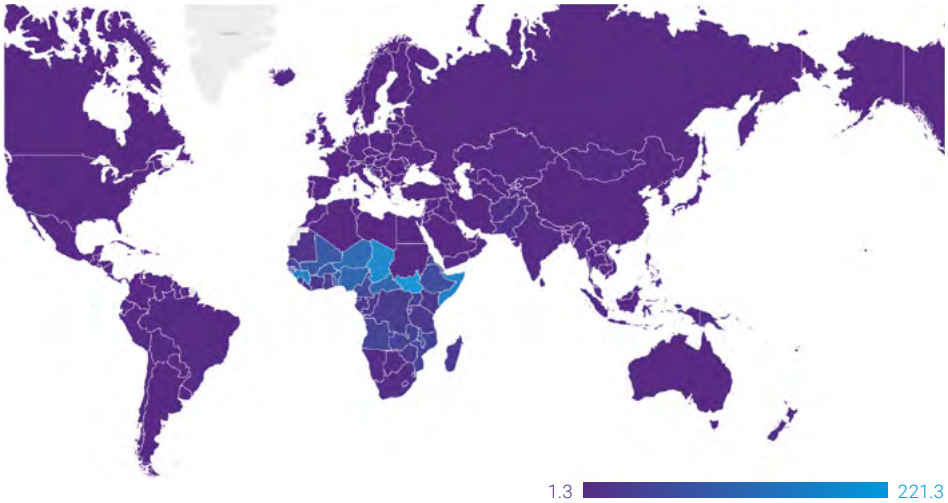
56 **Countries have at least one meningococcal vaccination universally available to certain age groups in their national immunisation programmes**

According to the Meningitis Progress Tracker. Analysis of multiple sources by Meningitis Research Foundation.

The meningitis belt

People living in a region of sub-Saharan Africa known as the 'meningitis belt' (a string of countries running from Senegal and The Gambia in the West to Ethiopia in the East) are at the highest risk of meningitis and vulnerable to outbreaks and epidemics of the disease.

Incidence of meningitis by country in 2021



Source: IHME, GBD 2021. Last Updated July 2024

Cases of meningitis per 100,000 people in 2021

Meningococcal vaccine availability in the meningitis belt

MenA

In the past, meningococcal group A bacteria (MenA) accounted for 80–85% of meningitis epidemics and outbreak in the meningitis belt – with a devastating impact.[xv]

The introduction of MenAfriVac in 2010 – the first affordable vaccine developed specifically for preventing MenA in Africa – has been transformative. Over 300 million people were vaccinated in mass campaigns between 2010 and 2019, creating strong community immunity, virtually eliminating MenA and saving hundreds of thousands of lives.[xvi]

The WHO recommends that all countries in the meningitis belt introduce a MenA conjugate vaccine into their routine childhood immunisation schedules[xvii] and data in the Meningitis Progress Tracker shows that so far 15 out of 26 countries have done so.[xviii] But eleven countries still have not introduced a routine vaccine. This growing pool of unprotected children reduces community immunity and could lead to new outbreaks of MenA – so urgent action is needed to introduce MenA in all meningitis belt countries.

15/26 **Meningitis belt countries to have introduced WHO recommended routine meningococcal vaccination as of May 2024**

Source: WHO/IST Meningitis bulletin. Last Updated July 2024

Men5CV

Since the near elimination of MenA, there have been outbreaks and epidemics caused by other serogroups of meningococcal bacteria (such as C and W).

In response, an affordable vaccine that protects against five different serogroups (A, C, W, Y and X) has been developed and is now available. WHO recommend that all countries in the meningitis belt introduce the vaccine.[xix] In 2024, Nigeria and Niger became the first countries to use the vaccine.

How can the Meningitis Progress Tracker help you if you live in one of the meningitis belt countries?

WHO recommends that all countries in the meningitis belt introduce the Men5CV vaccine. In the meantime, it's essential that all countries introduce MenA if they have not yet done so – so that MenA does not reemerge in the region.

Use the 'My Country' page of the Meningitis Progress Tracker to find out if your country has introduced the MenA or Men5CV vaccines.

If your country has not yet introduced MenA into its immunisation schedule, call on your Ministry of Health to introduce the vaccine as soon as possible.

If your country already routinely immunises babies with the MenA vaccine, call on your Ministry of Health to transition to Men5CV.

Race to 2030

Vaccination is the most effective way to protect against bacterial meningitis and has already saved millions of lives around the world.

Use the data on the Meningitis Progress Tracker to find out what vaccines are available where you live, and to call for locally-appropriate and equitable vaccination programmes.

Health advocates using data and evidence really can make a difference – changing policy and saving lives.

Together we can defeat meningitis

References

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Let us know how you use the Meningitis Progress Tracker

Please let us know whether you found the Meningitis Progress Tracker useful and how you used the data. Feedback helps us to improve the Meningitis Progress Tracker and make sure it's easy for health advocates to use.

Please email **tracker@meningitis.org**. Thank you

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