

Yellow Fever Initiative

Providing an opportunity of a lifetime



ONE INJECTION, FULL PROTECTION

PROVIDING AN OPPORTUNITY OF A LIFETIME

An adequate global vaccine supply is critical for maintaining yellow fever control for the world's most vulnerable populations. The yellow fever virus poses the greatest threat in 45 endemic countries, 32 in Africa and 13 in Central and South America, where altogether almost 900 million people are at risk.



Data Source: World Health Organization/CDC

Map Production: Public Health Information and Geographic Information Systems (GIS), World Health Organization

A global stockpile of yellow fever vaccine is reserved for use in emergencies and replenished every year to ensure ability to rapidly respond to outbreaks. As outbreaks continue to occur, the world is faced with a limited availability of a life saving vaccine. Urban epidemics could overwhelm emergency response capacity and jeopardize global health security. Without funding for preventive campaigns, countries face the loss of life and social and economic disruption that outbreaks inevitably cause.

Routine childhood immunization and preventive mass vaccination campaigns protect populations at risk and lessen the need for emergency response. Vaccine supply for preventive vaccination is dependent on commitment to purchase. With upfront financial commitment, vaccine manufacturers can increase production to meet global demand.

Action is needed now to offer the opportunity of a lifetime to people at risk.

A TANGIBLE THREAT TO PUBLIC HEALTH

Once a major threat to industrial economies, yellow fever strikes an estimated 200 000 people every year, causing an estimated 30 000 deaths. Deforestation, urbanization, climate change and low population immunity have contributed to its re-emergence since the 1980's. Cases are now occurring in areas that have not previously had outbreaks (southern Brazil, northern Argentina, central Paraguay), or had not confirmed cases in decades (Central African Republic, Chad, Congo, Liberia, Sierra Leone).

An acute viral haemorrhagic disease transmitted by mosquitoes, yellow fever can cause devastating epidemics in areas where infected mosquitoes can come in contact with non-immunized humans. Densely populated cities are particularly vulnerable, as stagnant water collected in water containers or peri-domestic refuse (cans, tires, etc.) provides conditions for mosquito larvae to thrive.

There is no cure – up to 50% of persons severely affected by yellow fever will die – but yellow fever can be prevented by a safe, affordable and highly effective vaccine. One injection offers full protection.

MINIMIZING GLOBAL RISK OF OUTBREAKS, ONE VACCINE AT A TIME

The Yellow Fever Initiative works to secure global vaccine supply and boost population immunity by vaccinating people at high risk. The goal of the partnership is to prevent yellow fever epidemics in targeted countries across Africa and Latin America. At the heart of its strategy lies the inclusion of the yellow fever vaccine in national childhood routine immunization, implementation of preventive mass vaccination campaigns in high-risk areas, maintaining surveillance and outbreak response capacity, and boosting vaccine production to meet global demand. A comprehensive risk assessment allows countries to identify population groups for prioritized vaccination.

Each year, the global emergency vaccine stockpile has 6 million doses available to any country for emergency response. The stockpile has been instrumental in controlling yellow fever outbreaks in Africa and the Americas and averting large-scale epidemics.

YELLOW FEVER INITIATIVE: REDUCING THE RISK OF OUTBREAKS

Risk assessment and surveillance

- Identify populations at risk
- Detect outbreaks early

Vaccination and outbreak response

- Contain outbreaks through emergency response
- Prevent outbreaks through mass vaccination
- Protect children through routine immunization

Securing vaccine supply

- Maintain the emergency stockpile
- Forecast vaccine requirements
- Support emerging manufacturers

Monitoring quality and effectiveness

- Ensure high vaccination coverage
- Monitor vaccine quality and safety
- Strengthen disease surveillance
- Support operational research and innovation

In addition, more than 230 million doses are being procured for preventive campaigns in the low-income countries at highest risk in Africa – Benin, Burkina Faso, Cameroon, Central African Republic, Côte d'Ivoire, Ghana, Guinea, Liberia, Mali, Nigeria, Senegal, Sierra Leone and Togo. Flexibility is needed to respond to outbreaks and changing risk profiles, so other countries may benefit if needed. Additional resources will allow the preventive strategy to extend to other countries.

A COMMITTED PARTNERSHIP

The Yellow Fever Initiative is a joint collaboration of the World Health Organization (WHO) and UNICEF, with the participation of national governments and supported by the GAVI Alliance. Key partners include the Agence de Médecine Préventive, the Centers for Disease Control and Prevention (USA), the International Federation of Red Cross and Red Crescent Societies (IFRC),

the Institut Pasteur in Dakar, Médecins sans Frontières (MSF), the Robert Koch Institute (Berlin), vaccine manufacturers (Sanofi Pasteur, BioManguinhos, Institut Pasteur Dakar, and Chumakov Institute) and others.

Allocation of vaccine to countries is approved by the long-standing International Coordinating Group for Yellow Fever Vaccine Provision (ICG), composed of WHO, UNICEF, MSF and IFRC. UNICEF Supply Division plays a critical role in vaccine procurement for the Yellow Fever Initiative.

GAUGING PROGRESS

Building on existing efforts, the Yellow Fever Initiative has realized impressive gains:

- Eight countries - Togo, Senegal, Mali, Burkina Faso, Cameroon, Sierra Leone, Liberia and Benin - conducted preventive vaccination campaigns between January 2007 and December 2009 and vaccinated almost 41 million people. All campaigns have far exceeded their objective of vaccinating 90% of eligible children and adults, protecting the most vulnerable in countries at risk. No new epidemics have occurred in areas covered by preventive vaccination. Most yellow fever campaigns have offered an integrated package of interventions for children, such as polio vaccine in Cameroon, measles vaccine in Sierra Leone, and deworming in Liberia.

PREVENTIVE VACCINATION CAMPAIGNS: PROGRESS TO DATE

Country	Target population (x million)	Population vaccinated (x million)
Benin	6.33	6.32
Burkina Faso	7.55	7.57
Cameroon	7.47	7.51
Central African Republic*	Approx 4	-
Côte d'Ivoire*	15.4	-
Ghana*	Approx 22	-
Guinea*	6.0	-
Liberia	2.91	2.89
Mali	5.94	5.87
Nigeria*	Approx 104	-
Senegal	3.13	3.11
Sierra Leone	4.11	3.98
Togo	3.64	3.59
Total	192 million	40.84 million

*Campaigns planned, 2010-2013

- In the same period, the ICG provided 14 million doses of yellow fever vaccine from the emergency stockpile to contain outbreaks in 11 countries (9 in Africa, 2 in South America). The stockpile has been critical to respond to outbreaks in known endemic areas and areas where countries are reporting outbreaks for the first time.
- In Africa, 22 countries have introduced yellow fever vaccine in routine childhood immunization. Routine vaccination coverage in countries at risk in Africa has increased from 16% in 2000 (8 countries) to 43% in 2008. In the Americas, coverage rose from 64% to 91%.
- With investment in diagnostics, case-based yellow fever surveillance has been established in 19 African countries, through building capacity of national laboratories and the WHO regional reference laboratory at the Institut Pasteur in Dakar, Senegal.

- Vaccine production capacity has increased from around 30 million doses in 2000 to 75 million doses in 2009. Facilities have been upgraded to meet international Good Manufacturing Practices (cGMP), offering countries more vaccine choices.

- The Institut Pasteur (Dakar), the only yellow fever vaccine manufacturer in Africa, is increasing production for the African region.
- WHO has prequalified new vaccine presentations. Thanks to the Yellow Fever Initiative, the yellow fever vaccine is the first vaccine produced in Russia to be prequalified.

SECURING VACCINE SUPPLY: WHO PREQUALIFIES VACCINES TO MEET GLOBAL DEMAND

Vaccine producer	Date prequalified	Presentations
Sanofi Pasteur (France)	1987	10-dose
Institut Pasteur (Senegal)	1999	5-dose 10-dose 20-dose
BioManguinhos (Brazil)	2001	5-dose 10-dose 50-dose
Chumakov Institute (Russia)	2009	5-dose

FUNDING PARTNERS

The Yellow Fever Initiative is supported by the GAVI Alliance, the European Commission Humanitarian Office (ECHO), the EuropeAid Cooperation Office (AIDCO), the Government of Ireland, Ministries of Health, and country-level partners.

GAVI as a key partner has ensured tremendous gains, helping to establish the vaccine stockpile, fund vaccine procurement, support operational costs of vaccination, conduct surveillance and risk assessment to identify high-risk populations, and strengthen vaccine safety monitoring.



ECHO finances emergency vaccination and outbreak investigations. AIDCO supports surveillance of epidemic-prone diseases, including yellow fever. Ministries of Health participate in covering operational costs for preventive campaigns. WHO, UNICEF and numerous nongovernmental organizations provide support to field operations.

THE GAVI ALLIANCE: A CATALYTIC CONTRIBUTION

- Funded the first yellow fever vaccine stockpile, 2004 – 2006 (~12 million doses).
- Supports countries to introduce and improve uptake of yellow fever vaccine in routine immunization.
- Commissioned a yellow fever Investment Case to prevent epidemics and maintain the stockpile. This was costed at USD 400 million to vaccinate 200 million people in the 13 highest-risk African countries.
- Committed funding of USD 103 million to 2010.
- Created a healthier vaccine market by supporting vaccine procurement for low-income countries.
- Supported country ownership through co-financing of operational costs.

SUSTAINING THE GAINS AND MOVING FORWARD: A CALL FOR FUNDING

The funds so far committed to the Yellow Fever Initiative have significantly reduced the threat of yellow fever. To prevent outbreaks, vaccination coverage must reach at least 60% to 80% of a population at risk. Only a few countries in Africa can claim to have reached that milestone.

The global emergency vaccine stockpile of 6 million doses per year must be sustained for rapid response to yellow fever outbreaks. Further funding of USD 30 million will secure the vaccine stockpile for 2011 to 2015.



For more information, visit www.who.int/yellowfever

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Funding for preventive vaccination in remaining high-risk countries in Africa must be secured to protect 160 million people at risk. The partnership urgently requires USD 190 million to complete the campaigns scheduled. Risk assessments in other countries will identify populations that can benefit from outbreak prevention strategies.

Health systems need strengthening to improve vaccination coverage, refine alert and response strategies, develop vaccine regulatory capacity and monitor immunization safety. To ensure high-quality campaigns, support is needed for planning, social mobilization and waste management. Vaccination cards, the key to campaign monitoring, must be distributed as proof of vaccination. Developing strategies to improve risk assessment, outbreak prevention, surveillance and rapid diagnosis will help sustain the gains.

Countries that complete preventive campaigns must keep up high routine coverage to maintain population immunity and protect the investments made in yellow fever control.

Current yellow fever vaccine production of 75 million doses per year is well below the global need for routine immunization, preventive campaigns and outbreak control.

- Commitment of funding will allow industry to scale up production and attract new suppliers.
- Increasing African vaccine production capacity will contribute to a lower vaccine price and a healthy vaccine market.
- Gains will be sustained and countries able to plan for timely and effective protection of their populations.

CURRENT FUNDING NEEDS TO 2015: 330 MILLION US DOLLARS, INCLUDING COUNTRY CONTRIBUTIONS

- USD 30 million to maintain the vaccine stockpile for 2011 to 2015 and create a sustainable vaccine revolving fund.
- USD 190 million to complete the programme and protect 160 million people in 5 high-risk countries – Central African Republic, Côte d'Ivoire, Ghana, Guinea and Nigeria.
- USD 80 million: following risk assessments, an additional 60 million people at risk could be protected in other countries as needed, such as Chad, Congo, Guinea Bissau, Sudan...
- USD 25 million: countries are expected to contribute to the operational costs of preventive campaigns.
- USD 5 million can double African yellow fever vaccine production capacity.

WHO/HSE/GAR/ERI/2010.3