



A GLOBAL STRATEGY TO

# Eliminate Yellow Fever Epidemics (EYE) 2017 – 2026



ELIMINATE  
**YELLOW FEVER**  
EPIDEMICS



**A global strategy to Eliminate Yellow fever Epidemics 2017–2026**

ISBN 978-92-4-151366-1

**© World Health Organization 2018**

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: “This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition”.

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization.

**Suggested citation.** A global strategy to Eliminate Yellow fever Epidemics 2017–2026. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.

**Cataloguing-in-Publication (CIP) data.** CIP data are available at <http://apps.who.int/iris>.

**Sales, rights and licensing.** To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.

**Third-party materials.** If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

**General disclaimers.** The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

Printed in Switzerland

A GLOBAL STRATEGY TO

# Eliminate Yellow Fever Epidemics (EYE)

2017 – 2026



ELIMINATE  
**YELLOW FEVER**  
EPIDEMICS

# Contents

---

<b>Foreword</b> .....	6
<b>Executive summary</b> .....	7
<b>Acronyms</b> .....	9

---

<b>Part 1: Introduction</b> .....	10
-----------------------------------	----

---

<b>Part 2: Evolution of global YF risk</b> .....	13
2.1. Recent changes in transmission dynamics .....	13
2.2. Risk specific to urban outbreaks .....	15
2.3. Updated risk classification .....	15

---

<b>Part 3: Public health measures for YF prevention and control</b> .....	19
3.1. YF disease surveillance and laboratory capacity .....	19
3.2. Vector surveillance and control .....	19
3.3. Vaccination against YF .....	20
3.4. Targeting travellers and improving IHR compliance .....	23
In summary .....	23

---

<b>Part 4: Lessons learned from prior programs: obstacles to progress</b> .....	25
4.1. Vaccine supply .....	25
4.2. Regional and country buy-in .....	26
4.3. Implementation issues .....	26
4.4. The global emergency stockpile .....	26
4.5. Programme governance and resources .....	27
4.6. A global problem .....	27

---

---

<b>Part 5: EYE vision and strategic objectives</b>	28
5.1. Strategic objective 1: Protect at-risk populations (No epidemics)	29
- Action 1: Where risk is high, vaccinate everyone	29
- Action 2: Vaccinate every child	29
- Action 3: Risk assessments	30
5.2. Strategic objective 2: Prevent international spread (No exportation)	31
- Action 1: Protect high-risk workers	31
- Action 2: Apply the IHR	31
- Action 3: Build resilient urban centres	32
5.3. Strategic objective 3: Contain outbreaks rapidly (No sustained transmission)	33
- Action 1: Detect early	33
- Action 2: Vaccine supply is ready at all times	34
- Action 3: Respond immediately	35

---

<b>Part 6: Keys to success</b>	36
6.1. Affordable vaccines and sustained vaccine market	36
6.2. Strong political commitment at global, regional and country levels	37
6.3. Robust governance and strong partnerships	37
6.4. Synergies with other programmes and sectors	38
6.5. Research and development for better tools and practices	39

---

<b>Part 7: Implementation, monitoring and evaluation</b>	40
7.1. Key milestones	41
7.2. Regular updates	41

---

<b>List of EYE partners</b>	42
<b>Group photo</b>	48

# Foreword

In 2016 Angola was hit by an unprecedented yellow fever urban outbreak which spread to neighbouring countries and generated local transmission, including in the Democratic Republic of the Congo's capital Kinshasa. The epidemic created an urgent need for more than 28 million doses of yellow fever vaccines total, which exhausted the existing global vaccine supply. It also diverted public health authorities from tackling other public health issues – with an impact on health systems.

In response to the Angola outbreak, the comprehensive global strategy to Eliminate Yellow fever Epidemics (EYE) was developed by WHO and partners in a matter of a few months given the on-going urgency and the looming risk of spillover to Asia, as 11 cases were exported to China.

Part of the complexity of the global issue of yellow fever epidemics is the multifactorial and evolving nature of risk and its inherent unknowns. The risk of large yellow fever epidemics and exportation to Asia or other areas with potential for yellow fever transmission – such as Zika- or dengue-prone areas – remains daunting. Yellow fever outbreaks could easily turn into public health emergencies of international concern (PHEICs) and must be prevented to not only minimize mortality, morbidity, and disruption of health systems, but also to preserve economies and social development.

The strategic principles described herein were validated by the Strategic Advisory Group of Experts (SAGE) on Immunization in October 2016 and approved by the Gavi Board in December 2016. They capture the risk as perceived at that time and are meant to be tailored to an evolving global risk balanced against global vaccine supply and demand. The priorities will continue to be fine-tuned as global risks are analysed and monitored, multi-year work plans and forecasts are developed, and as countries successfully implement vaccination activities.

The EYE strategy aims at building a global coalition of countries and partners to tackle the increased risk of yellow fever epidemics in a coordinated manner and is an opportunity to demonstrate new ways of managing the complex world of re-emerging infectious diseases. The development and implementation of the strategy would not have been possible without the collective effort of global partners and all stakeholders. We are very grateful to them for their input, expertise, commitment, support and partnership – all of which will ensure that the world achieves the goal of global elimination of yellow fever epidemics. We are particularly grateful to the core EYE partners Gavi, the Vaccine Alliance, and the United Nations International Children's Emergency Fund (UNICEF) that form the governance and implementation body for EYE along with WHO.

**Sylvie Briand**, *Director*

Infectious Hazard Management (IHM) Department  
WHO Health Emergencies (WHE) Programme

# Executive summary

The global health community is facing an increased risk of urban outbreaks of yellow fever (YF). The risk of international spread, YF's changing epidemiology and resurgence of mosquitoes pose an emerging global threat that requires new strategic thinking.

This document describes the reasoning behind and need for an updated, long-term (2017-2026) and global strategy to “Eliminate Yellow fever Epidemics” (EYE). The strategy includes **three strategic objectives: (1) protect at-risk populations, (2) prevent international spread and (3) contain outbreaks rapidly.**

The document is intended to be used at national, regional and global level by partners, donors, public health officers, national health authorities, and technical or non-technical experts seeking an overview of the EYE strategy.

The EYE strategy is comprehensive, multi-component and multi-partner. In addition to recommending vaccination activities, it calls for building resilient urban centres, planning for urban readiness, and strengthening the application of the International Health Regulations (2005) (IHR).

The EYE strategy is an unprecedented initiative as it brings together multiple partners willing to support countries to achieve a common goal of making the world safer. It targets the countries and regions that are considered most vulnerable to YF outbreaks. The classification of countries' risk was revised to account for criteria associated with the changing epidemiology of the disease such as environmental factors, population density and vector prevalence. A total of 40 countries (27 countries in Africa and 13 countries in the Americas) are considered to be at highest risk for YF. In these countries, large scale access to yellow fever vaccines is critical to establish and maintain high levels of immunity among adult and childhood populations. In Africa, 5 countries still need to introduce the vaccine into their routine immunization schedules and 12 countries should complete national mass preventive campaigns. All countries at risk for YF in the Americas have introduced the vaccine into routine vaccination programmes, but 11 of them should plan catch-up campaigns targeting unprotected pockets of their populations.



Rapid containment of outbreaks is essential to ensure they do not amplify into devastating epidemics. Reactive vaccination programs should be part of the outbreak response as well as surveillance strengthening to enhance early detection of cases, vector control and community mobilization. That will require improving laboratory capacity, building on existing surveillance networks and extending the currently limited laboratory diagnostic in-country options.

A revolving mechanism will be put in place to give countries facing emergency needs for YF vaccine access to the internationally managed stockpile. Over the coming decade, vaccine manufacturers are expected to be able to meet the global demand of 1.38 billion doses needed to eliminate the risk of YF epidemics. This will require maximizing their production, particularly in the first 5 years.

**Cross-cutting core support activities** will be initiated from the start of EYE to ensure success through **(1)** availability of accessible, affordable vaccines procured in a sustained vaccine market, and mechanisms to cope with surges in YF vaccine demand; **(2)** political commitment at regional and country levels fostered by strong advocacy; **(3)** robust governance and strong monitoring; **(4)** synergies with other programmes and sectors; and **(5)** research to support better tools and informed practices.

The EYE strategy was scientifically validated by the Strategic Advisory Group of Experts on Immunization (SAGE) in October 2016 and approved by the Gavi Board in December 2016. The strategy will succeed by engaging countries and multidisciplinary partners, and by coordinating efforts well. No country or institution can tackle the global issue of YF epidemics alone.

预览已结束，完整报告链接和二维码如下：

[https://www.yunbaogao.cn/report/index/report?reportId=5\\_26033](https://www.yunbaogao.cn/report/index/report?reportId=5_26033)

