

# Marburg virus vaccine development program



Translating science into global health impact



**IAVI is developing a vaccine candidate for protection against Marburg virus (MARV), a deadly pathogen and potential bioweapon that repeatedly causes severe outbreaks.**

The candidate uses recombinant vesicular stomatitis virus (rVSV), the same technology behind Merck's Ebola Zaire vaccine, ERVEBO®, which is licensed in more than a dozen countries.

## About MARV

- In the *Filoviridae* family of highly pathogenic viruses, which are considered potential agents of bioweapon.<sup>1</sup>
- No vaccine or antiviral treatment is available despite repeated and deadly outbreaks.
- Causes Marburg virus disease (MVD), an uncommon but often fatal viral hemorrhagic illness notable for its severity, rapid onset, and high case fatality ratio – up to 88% in past outbreaks.
- Outbreaks have primarily occurred in sub-Saharan Africa, with additional cases documented in the U.S. and Europe.
- Included in the World Health Organization (WHO) [Pathogen Prioritization framework](#) as a priority pathogen for which a vaccine is urgently needed.
- Zoonotic disease: transmission from wildlife to humans (“spillover”) can result in onward transmission between humans. The Egyptian fruit bat is considered a natural host of MARV.
- Initial spillover results from exposure to bats that frequently inhabit mines or caves. Most transmission occurs among health workers, family members, and close contacts.

## Results

- Non-human primates vaccinated with IAVI’s intranasal MARV vaccine candidate were completely protected following an aerosolized MARV challenge.
- A single intramuscular immunization of MARV vaccine at the lowest dose (10E2 pfu) protected non-human primates against MARV challenge delivered intramuscularly.
- Phase 1 clinical trial (IAVI C104) began in the U.S. in April 2026.

## MARV by the numbers



**0**  
Approved vaccines or therapeutics



**50%**  
Average case fatality rate<sup>2</sup>



**19**  
Reported outbreaks to date<sup>2</sup>



**14**  
Countries have experienced an outbreak or cases<sup>3</sup>



**21%**  
Estimated secondary attack rate<sup>4</sup>



**80%**  
Confirmed cases in Rwanda’s 2024 outbreak that were health workers<sup>5</sup>

## Impact

During Rwanda's 2024 outbreak – which ultimately resulted in 66 confirmed cases – IAVI's MARV vaccine candidate was prioritized for review by a World Health Organization Technical Advisory Group due to its promising preclinical data.

A selection of this data was presented at the American Society of Tropical Medicine & Hygiene's Annual Meeting in October 2024. Research performed by scientists with IAVI's Vaccine Design & Development Laboratory and partner institutions indicated that non-human primates vaccinated intranasally and intramuscularly saw complete protection against MARV challenge. Based on the strength of these and other findings, IAVI's MARV vaccine candidate progressed to a Phase 1 clinical trial.

**"IAVI C104 represents an important step toward generating the data needed for eventual regulatory approval of IAVI's Marburg vaccine candidate."**

– Mark Feinberg, president and CEO, IAVI

## Partnerships

- IAVI's MARV R&D program is funded by the Biomedical Advanced Research and Development Authority (BARDA).
- We are pursuing fast, flexible manufacturing solutions. In 2024, IAVI and Institut Pasteur de Dakar (IPD) in Senegal established a collaboration to research, develop, manufacture, and commercialize a range of novel vaccine candidates for both endemic and emerging infectious disease (EID) threats – all manufactured using a common vaccine production platform.
- We collaborate closely with the Viral Hemorrhagic Fever Consortium, a group of experts in affected countries.
- The Public Health Agency of Canada (PHAC) provided IAVI with a nonexclusive license to the rVSV vaccine candidates. The vector was developed by scientists at PHAC's National Microbiology Laboratory.
- Research partners include La Jolla Institute for Immunology, University of Texas Medical Branch at Galveston, Seattle Children's Research Institute, Texas Biomedical Research Institute, and more.

Visit IAVI's [emerging infectious diseases page](#) for more information.

- <sup>1</sup> <https://pmc.ncbi.nlm.nih.gov/articles/PMC3394174/>
- <sup>2</sup> <https://www.who.int/news-room/fact-sheets/detail/marburg-virus-disease>
- <sup>3</sup> <https://www.cdc.gov/marburg/outbreaks/index.html>
- <sup>4</sup> [https://wwwnc.cdc.gov/eid/article/12/3/05-0622\\_article](https://wwwnc.cdc.gov/eid/article/12/3/05-0622_article)
- <sup>5</sup> <https://www.who.int/emergencies/disease-outbreak-news/item/2024-DON548>

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