

Vaccine Activities Update

National Institute of Allergy and Infectious Diseases,
National Institutes of Health

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March 2016



National Institute of
Allergy and
Infectious Diseases



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Allergy and
Infectious Diseases

NIAID Zika Research

- Basic research
 - How does Zika cause disease?
- Drug screening for activity against Zika virus
- Rapid diagnostics
- Vaccine candidates
 - DNA-based
 - Live-attenuated
 - Genetically engineered version of vesicular stomatitis virus



Credit: Pan American Health Organization



U.S. Department of Health and Human Services

NIH News
National Institutes of Health

National Institute of Allergy and
Infectious Diseases (NIAID)

<http://www.niaid.nih.gov>

Thursday, January 14, 2016

Dengue Vaccine Enters Phase 3 Trial in Brazil



Sequential Rotavirus Vaccine Schedules

- Rotavirus vaccines licensed in the U.S.: RotaTeq and Rotarix
 - Some children may receive mixture of products during vaccine series
- Does switching from one vaccine product to another work as well as using the same vaccine for all of the doses?
- Results:

Immunization with mixed series of rotavirus vaccines is safe and results in an immune response that is noninferior to that generated by immunization with any single product.
- Public health implications for use of mixed series in clinical settings



Credit: Andre Berro,
CDC Division of Global Migration and Quarantine (DGMQ)

Environmental Influences on Child Health Outcomes (ECHO) Program

 U.S. Department of Health and Human Services
NIH News
National Institutes of Health

<http://www.nih.gov>
Monday, September 28, 2015

NIH awards ~\$144 million in research on environmental influences on child health and development



Maternal Immunization

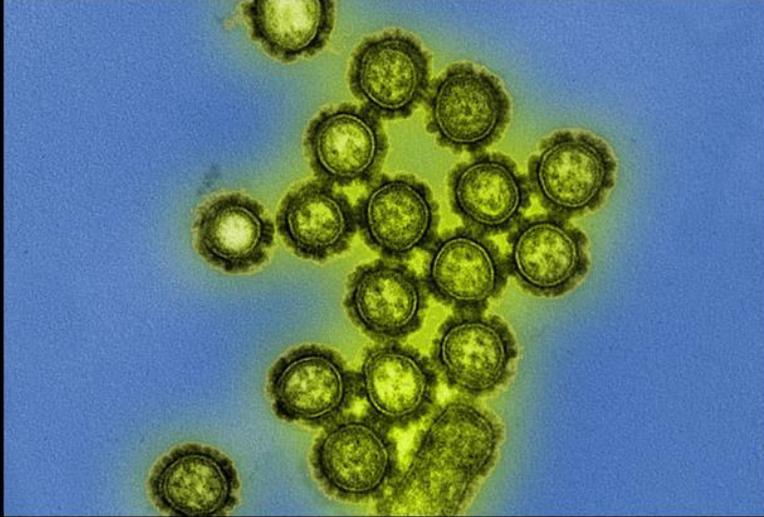


Advancing Maternal Immunization Programs Through
Research in Low and Medium Income Countries
(*Vaccine*. November 25, 2015)

Selected NIAID Research Advances of 2015

NIH National Institute of Allergy and Infectious Diseases
Leading research to understand, treat, and prevent infectious, immunologic, and allergic diseases.

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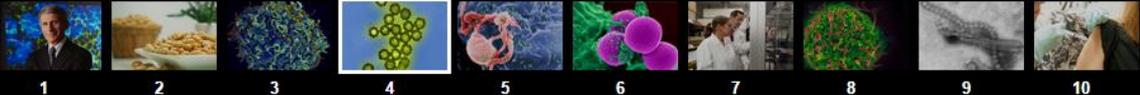


Advancing Toward a Universal Flu Vaccine

Seasonal flu vaccines work by generating antibodies that target the head region of the lollipop-shaped viral protein hemagglutinin (HA), preventing the virus from entering and infecting cells. The HA head region frequently undergoes genetic changes as flu viruses evolve, making the antibodies produced against one strain ineffective against another. As a result, flu vaccines must be updated annually to best target the viruses predicted to spread and cause illness in a given year.

Scientists are working to develop a universal flu vaccine—one that confers durable protection against most influenza viruses. One possible approach is to create a vaccine that elicits antibodies targeting the HA stem. Unlike the head, the stem varies little among different influenza viruses.

NIAID scientists have developed a nanoparticle vaccine with a stabilized HA stem from an H1N1 influenza virus. Investigators immunized mice and



Vaccine-related examples:

- Influenza
- HIV
- Ebola
- Epstein-Barr Virus Infection