Vaccine Activities Update
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The Zika Virus

It's a mysterious illness with devastating effects.

Is the next public health crisis in your backyard?

Plus
The controversial plan to genetically manipulate mosquitoes out of existence
NIH Research Response to Emerging Infectious Diseases

- Therapeutics
- Vaccines
- Diagnostics
- Basic Research
- Clinical Research
- Resources for Researchers/Industry to Advance Product Development
NIAID Research Response

- Leveraging existing Program on Flaviviruses to rapidly start research on Zika

- Since January 2016, over 40 projects initiated to:
  - Understand basic biology/structure/evolution of virus and competence of the mosquito vectors
  - Develop vaccines, diagnostics, therapeutics and vector control strategies
  - Elucidate the mechanism of pathogenesis and congenital infection
Zika Vaccine Research

- DNA vaccine candidate
- Whole-particle inactivated virus vaccine
- Live-attenuated Zika chimera vaccine
- Vesicular Stomatitis Virus vectored vaccine
- mRNA vaccine candidate
Biomedical Research Response: Epidemiology and Natural History

- Epidemiology and natural history
  - Symptomatic vs. asymptomatic
  - Frequency of sequelae
  - Cohort studies to determine incidence of adverse pregnancy outcomes in Zika-infected pregnant women

- Pathogenesis of microcephaly
Experimental Dengue Vaccine Protects All Recipients in Virus Challenge Study

Malaria Vaccine Research

- Phase 1 Trial: 101 healthy adults who had never had malaria
- PfSPZ Vaccine is composed of live, but weakened *P. falciparum* sporozoites
- First to show durable, sterile protection in people with no prior infection
- Authors note importance of both long-term, reliable protection (travelers, military personnel) and durable protection (malaria-endemic regions)

NIH Awards Six Grants to Explore How Combination Adjuvants Improve Vaccines
NIH Study Finds Factors that May Influence Influenza Vaccine Effectiveness

MJ Memoli et al. Evaluation of Antihemagglutinin and Antineuraminidase Antibodies as Correlates of Protection in an Influenza A/H1N1 Virus Healthy Human Challenge Model. mBio (2016)
Large-Scale HIV Vaccine Trial to Launch in South Africa

NIH-Funded Study Will Test Safety, Efficacy of Vaccine Regimen

For the first time in seven years, the scientific community is embarking on a large-scale clinical trial of an HIV vaccine, the product of years of study and experimentation.

— NIAID Director Anthony S. Fauci, M.D.