

**Hearing of the House Committee on Energy and Commerce,
Subcommittee on Health**

**The Role of the
National Institute of Allergy and
Infectious Diseases
in Research Addressing
Ebola Virus Disease**

Anthony S. Fauci, M.D.

Director

**National Institute of Allergy and
Infectious Diseases**

National Institutes of Health

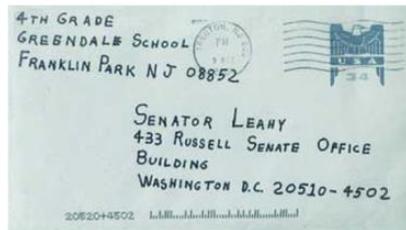
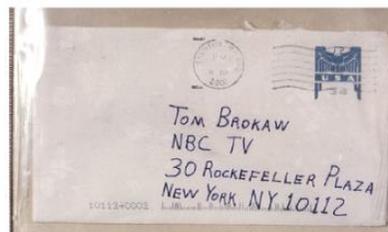
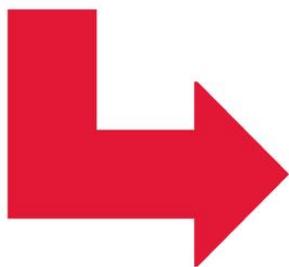
November 19, 2014



9/11 Attacks



2001 Anthrax Attacks



February 2002

NIAID Biodefense Research Agenda for CDC Category A Agents

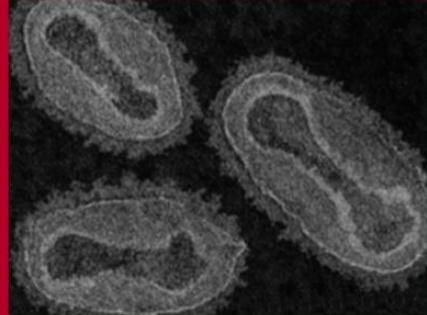
Responding Through Research

 National Institute of Allergy and Infectious Diseases
NATIONAL INSTITUTES OF HEALTH

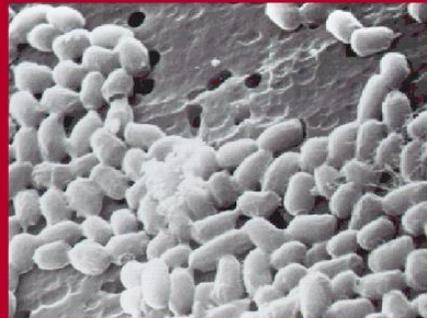


February 2002

NIAID Biodefense Research Agenda for CDC Category A Agents



Responding
Through
Research



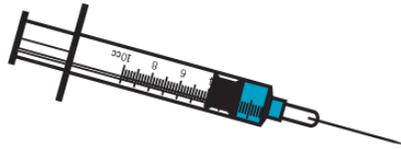
Category A pathogens

- Anthrax (*Bacillus anthracis*)
- Botulism (*Clostridium botulinum* toxin)
- Plague (*Yersinia pestis*)
- Smallpox
- Tularemia (*Francisella tularensis*)
- Viral hemorrhagic fever viruses (e.g., Ebola, Marburg, Lassa and Machupo)



National Institute of Allergy and Infectious Diseases

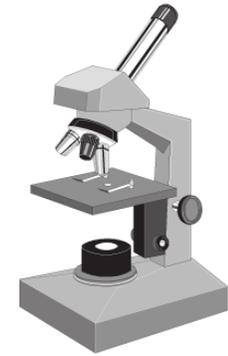
NATIONAL INSTITUTES OF HEALTH



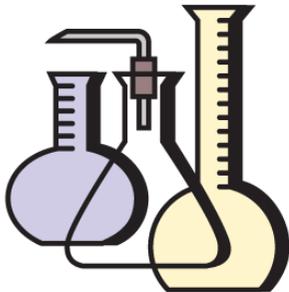
Vaccines



Therapeutics



Diagnostics



Basic Research



**Resources for
Researchers/
Industry to
Advance
Product
Development**



**Clinical
Research**

Product Development Pipeline

**Early concept
and product
development**

**Advanced
development**

**Commercial
manufacturing**

**Regulatory
review**

NIH

BARDA

Industry

FDA



NIAID Ebola Vaccines Ready to Proceed to Phase 2/3 Efficacy Testing in West Africa

■ **NIAID/GSK (chimpanzee adenovirus vector)**

Phase 1 trial at NIH fully enrolled; Phase 2/3 efficacy trials planned for West Africa

■ **NewLink (VSV vector)**

Phase 1 trials enrolling at NIH and WRAIR; Phase 2/3 efficacy trials planned for West Africa

Other vaccines in development: Crucell/Johnson & Johnson (adenovirus vector) and Bavarian Nordic (MVA vector); Profectus (VSV vector); NIAID Intramural, Thomas Jefferson Univ. (rabies vector)

Ebola Therapeutics in Development

■ **ZMapp (Mapp Biopharmaceutical)**

- Combination of 3 artificially produced antibodies directed against the Ebola virus

■ **BCX4430 (BioCryst)**

- A novel drug (nucleoside analogue) that interferes with the reproductive process of the virus

■ **TKM-Ebola (Tekmira Pharmaceuticals)**

- Small inhibitory RNA molecule that interferes with the replication of the virus (supported by DOD)

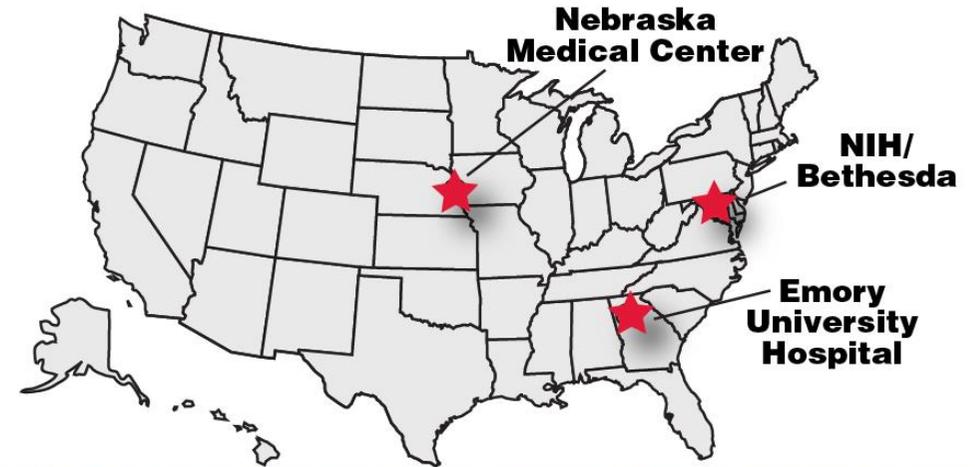
■ **Brincidofovir (Chimerix)**

- DNA polymerase inhibitor; *in vitro* activity against Ebola
- Good safety record; currently in phase 3 trials for CMV and adenovirus

■ **Favipiravir (MediVector/Toyama/Fuji)**

- Polymerase inhibitor; modest activity against Ebola
- Currently in phase 3 trials for influenza

NIH Special Clinical Studies Unit: Designated Ebola Treatment Facility



The Washington Post

October 25, 2014

Nina Pham, Nurse Who Contracted Ebola, is Now Free of Virus and Leaves NIH



Photo: The Washington Post



Photo: Nina Pham