

Infections and Environmental Interactions: Who is Responsible?

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October 17, 2016



National Institute of
Allergy and
Infectious Diseases

NIAID History

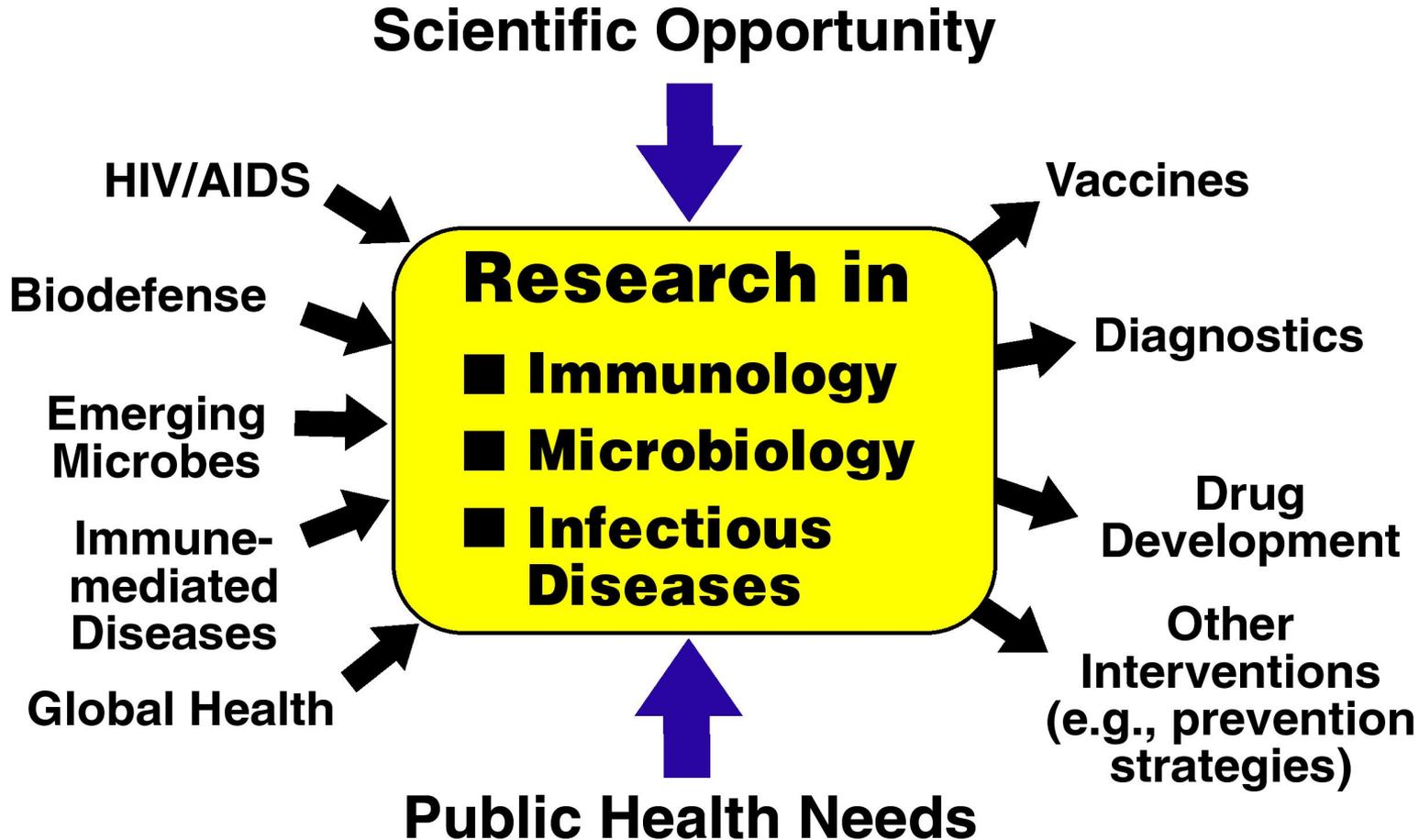
- 1887 - Hygienic Laboratory
- 1948 - National Microbiology Institute
- 1955 - National Institute of Allergy and Infectious Diseases



Changing Mission

- Environmental Protection Agency
 - Established in 1970
 - Charged with protecting human health and the environment.
- Molecular Biology and Immunology Revolution (1970s)
- HIV/AIDS epidemic
 - 1986 - NIAID assumes major NIH responsibility for HIV research
- Genomics and Informatics Revolution
 - 2003 - Lead responsibility for Civilian Biodefense
 - 2006 – U.S. Adoption of International Health Regulations

NIAID: The Research Path



NIAID Mission

Conduct and support basic and applied research to better understand, treat, and ultimately prevent infectious, immunologic, and allergic diseases

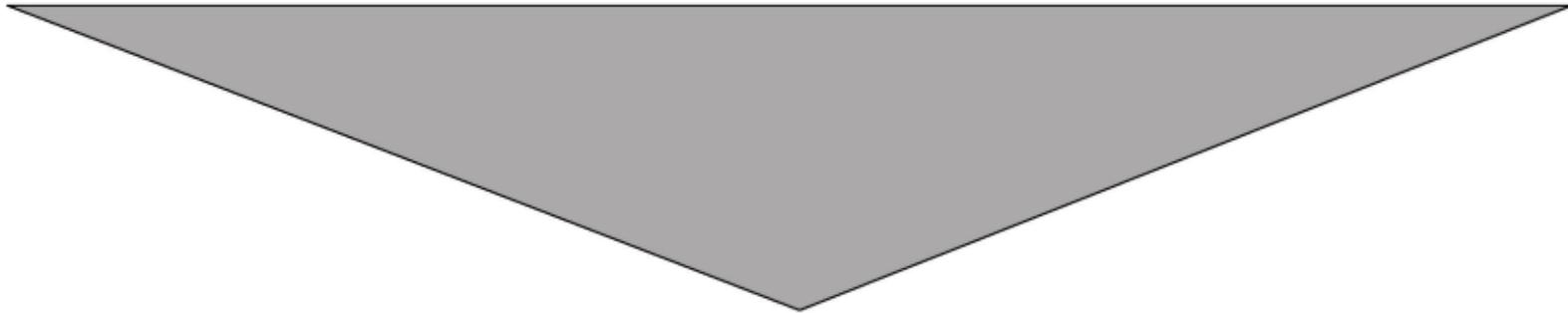


NIAID Research: A Dual Mandate

Maintain and “grow” a robust basic and applied research portfolio in microbiology, infectious diseases, immunology and immune-mediated diseases

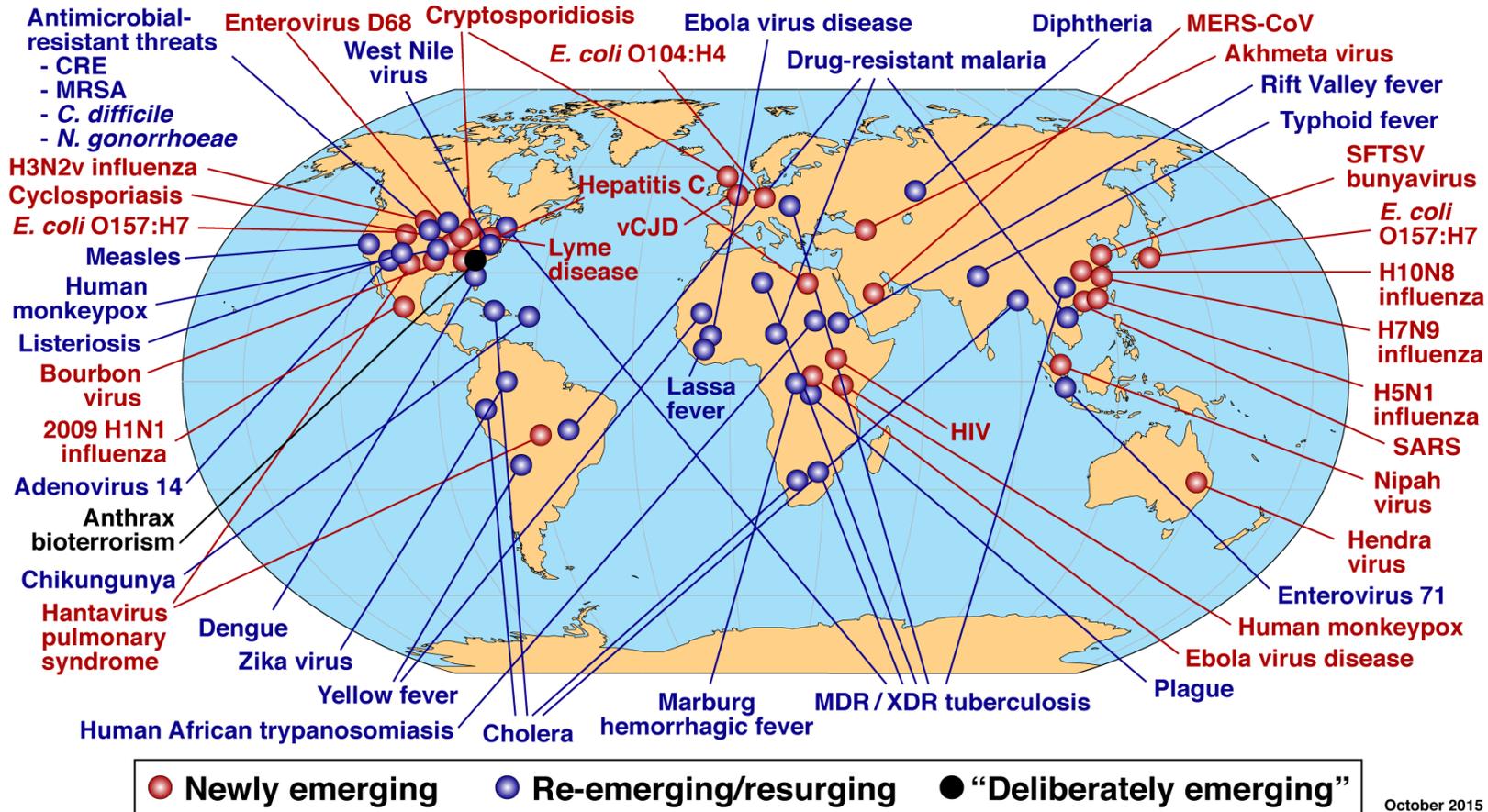


Respond rapidly to new and emerging disease threats



New/Improved Interventions

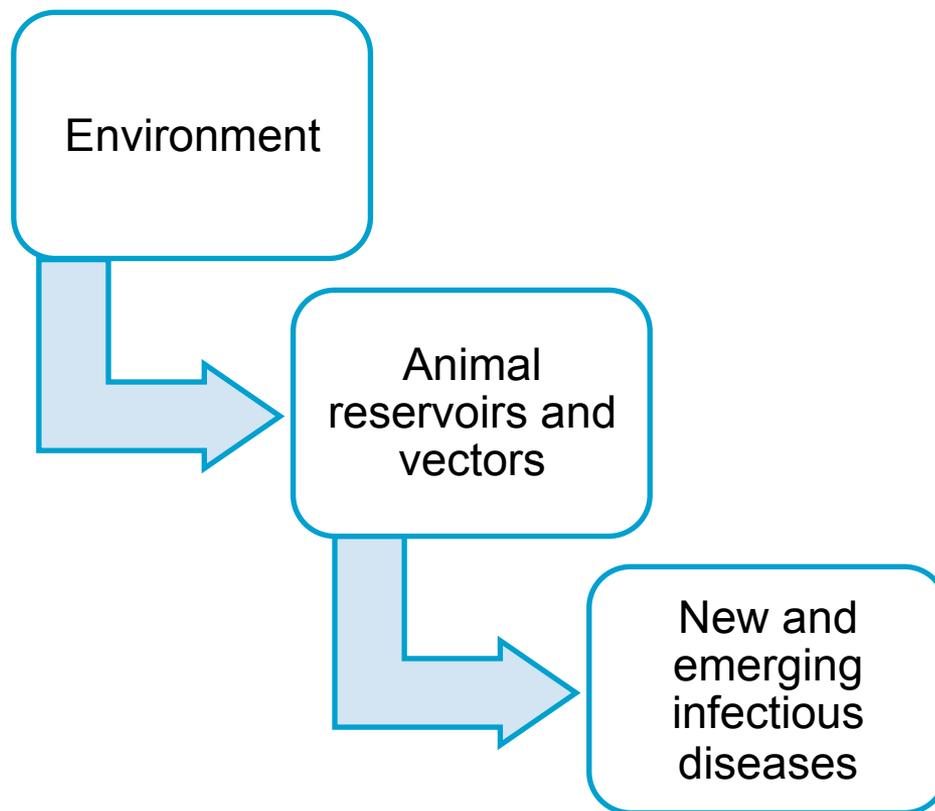
Emerging and Re-emerging Infectious Diseases



October 2015

Zoonotic Origin of Infectious Diseases

- Most new and re-emerging infectious diseases are zoonosis



Impact of Climate Change on Infectious Diseases

- Shifts in weather patterns can cause environmental changes that favor microbial growth
 - Cholera outbreaks as a result of high temperatures and flooding
- Vector borne diseases and zoonotic diseases are climate sensitive
 - Distribution of vector populations change with changes in temperature
 - Increased incidence of diseases with mosquito vectors

NIAID Programs with Environmental Focus

- Interagency agreement on international impact of climate change between NIAID and EPA.
- Inner-city Asthma Research
 - Environmental intervention study to reduce asthma morbidity in at-risk children
- Centers of Excellence for Influenza Research and Surveillance (CEIRS)
 - Virologic surveillance in aquatic birds and in live bird markets in Hong Kong to identify influenza viruses with pandemic potential
 - Natural history of influenza A viruses in wild birds, virus ecology and viral hosts

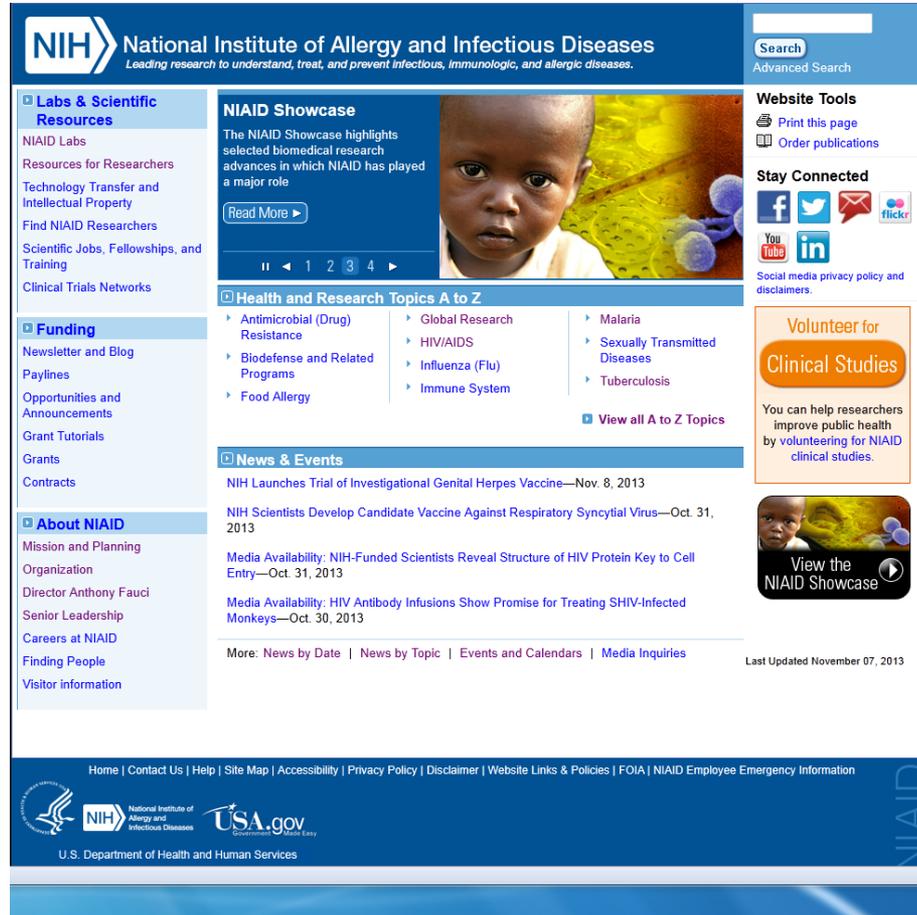
NIAID Future Goals

- Predict and prevent next epidemic before it happens
- Identify diseases that have the potential to appear and reappear

- How?
 - Strengthen relationship with environmental research partners
 - Engage research partners across different disciplines and fields (veterinary, agricultural, environmental partners)

For more information:

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The screenshot shows the NIAID website homepage. At the top, the NIH logo is followed by the text "National Institute of Allergy and Infectious Diseases" and the tagline "Leading research to understand, treat, and prevent infectious, immunologic, and allergic diseases." Below this is a search bar and a navigation menu. The main content area is divided into several sections: "Labs & Scientific Resources" with links to NIAID Labs, Resources for Researchers, Technology Transfer and Intellectual Property, Find NIAID Researchers, Scientific Jobs, Fellowships, and Training, and Clinical Trials Networks; "Funding" with links to Newsletter and Blog, Paylines, Opportunities and Announcements, Grant Tutorials, Grants, and Contracts; "About NIAID" with links to Mission and Planning Organization, Director Anthony Fauci, Senior Leadership, Careers at NIAID, Finding People, and Visitor Information; "NIAID Showcase" featuring a video player with a thumbnail of a young child and a microscope, with a "Read More" button; "Health and Research Topics A to Z" with a grid of links to Antimicrobial (Drug) Resistance, Biodefense and Related Programs, Food Allergy, Global Research, HIV/AIDS, Influenza (Flu), Immune System, Malaria, Sexually Transmitted Diseases, and Tuberculosis; "News & Events" with a list of recent news items including "NIH Launches Trial of Investigational Genital Herpes Vaccine—Nov. 8, 2013", "NIH Scientists Develop Candidate Vaccine Against Respiratory Syncytial Virus—Oct. 31, 2013", "Media Availability: NIH-Funded Scientists Reveal Structure of HIV Protein Key to Cell Entry—Oct. 31, 2013", and "Media Availability: HIV Antibody Infusions Show Promise for Treating SHIV-Infected Monkeys—Oct. 30, 2013"; "Website Tools" with links to Print this page and Order publications; "Stay Connected" with social media icons for Facebook, Twitter, YouTube, LinkedIn, and Flickr; and a "Volunteer for Clinical Studies" button with a "View the NIAID Showcase" button below it. At the bottom, there is a footer with navigation links, logos for NIH, USA.gov, and the U.S. Department of Health and Human Services, and a "Last Updated November 07, 2013" timestamp.