



# U.S. National Biosurveillance Strategy for Human Health

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**Daniel M. Sosin, MD, MPH  
Centers for Disease Control and Prevention  
[dsosin@cdc.gov](mailto:dsosin@cdc.gov)**



# Scope of Biosurveillance

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*“active data-gathering with appropriate analysis and interpretation of biosphere data that might relate to disease activity and threats to human or animal health --whether infectious, toxic, metabolic, or otherwise, and regardless of intentional or natural origin--in order to achieve early warning of health threats, early detection of health events, and overall situational awareness of disease activity” (HSPD-21, paragraph 2 a)*

The science and practice of managing health-related data and information so that effective action can be taken to mitigate adverse health effects from urgent threats



# National Biosurveillance Priority



- ❖ Homeland Security Presidential Directives 9 and 10
- ❖ Pandemic and All-Hazards Preparedness Act of 2006
- ❖ Homeland Security Presidential Directive-21
  - *“establish an operational national...[bio]surveillance system for human health”* and a
  - *“Federal Advisory Committee ... to ensure that the Federal Government is meeting the goal of enabling State and local government public health surveillance capabilities”*
- ❖ PanH1N1 Planning



# Enhanced Biosurveillance: Challenges

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## ❖ Workforce Limitations

- Capacity reductions at the most skilled end of the workforce
- Lack of competencies, curriculum, and mechanisms to develop the biosurveillance workforce of the future

## ❖ Duplication of Efforts

- Constrained data sharing
- Limited interagency collaboration and visibility of relevant work

## ❖ Unstable Funding

- Impedes research and development
- Impedes recruitment, retention, and collaboration



# Enhanced Biosurveillance: What It Will Take

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## ❖ Workforce

- New skills
- Greater capacity

## ❖ New Science

- Bridging of information and analytic fields
- Data and information safeguards
- Responsible application of new methods

## ❖ Modified Workflows and Business Processes



# Enhanced Biosurveillance: The Way Forward

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- ❖ The National Biosurveillance Strategy for Human Health (NBSHH)
  - Builds on the current capabilities and relationships
  - Respects multiorganizational and multidisciplinary perspectives
  - Ensures protection of rights and authorities
  - Serves as a reference point for the next generation biosurveillance capability
  - Version 1.0 was distributed on December 15, 2008
- ❖ The National Biosurveillance Advisory Subcommittee
- ❖ Interagency Concept Plan



# The *Strategy*: Priorities

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- ❖ **Electronic Health Information Exchange**
  - Create nationwide capability for health information exchange
  - Strengthen surveillance processes and notifiable disease reporting mechanisms, including electronic laboratory reporting
- ❖ **Electronic Laboratory Information Exchange**
  - Create a governance structure for electronic laboratory information exchange
  - Ensure interoperability and collaboration across human health-relevant laboratory domains
- ❖ **Unstructured Data**
  - Identify options for the use and management of unstructured data
  - Develop the capacity to collect and utilize unstructured data for biosurveillance for human health purposes



# The *Strategy*: Priorities



## ❖ Integrated Biosurveillance Information

- Establish a nationwide capability for integrated biosurveillance information management and exchange
- Create a collaborative environment for sharing of situation awareness information and health intelligence

## ❖ Global Disease Detection and Collaboration

- Strengthen Partnerships and leverage resources of U.S. Government (USG) and Non-USG partners
- Support efforts to connect the worldwide “network of networks” to foster more rapid information sharing and earlier detection

## ❖ Biosurveillance Workforce of the Future

- Assess current biosurveillance workforce capability – Identify numbers, composition and gaps
- Ensure a competent biosurveillance workforce through a continuous learning system



# National Biosurveillance Advisory Subcommittee (NBAS)

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- ❖ “To ensure that the Federal Government is meeting the goal of enabling state and local government public health surveillance capabilities” (HSPD-21)
- ❖ To review, research, guide, and endorse the National Biosurveillance Strategy for Human Health on an annual basis
- ❖ To serve as an innovative engine for advancing nationwide biosurveillance capability



# NBAS Facts

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- ❖ Created by the Advisory Committee to the CDC Director on May 1, 2008
- ❖ Comprised of 33 prominent public and private biosurveillance stakeholders and contributors
- ❖ Independent advisors for the development of the next generation biosurveillance capability
- ❖ Chaired by Dr. Larry Brilliant, President, Skoll Urgent Threats Fund
- ❖ Supported by Federal agencies : HHS– ASPR, CDC, FDA, ONC; DHS; DoD; VA; USDA; FBI; and EPA



# NBAS Steering Committee



## Larry Brilliant, Chair

- ❖ Animals, Food and Vectors
  - Arthur Reingold
- ❖ Integrating Clinical and Public Health Reporting
  - Farzad Mostashari
- ❖ Genomic Epidemiology and Digital Technologies
  - W. Ian Lipkin
- ❖ Biosurveillance Workforce of the Future
  - James Hadler
- ❖ Cross-sector Collaborations
  - Tara O'Toole
- ❖ Environmental Monitoring
  - Linda McCauley
- ❖ Global Disease Detection and Collaboration
  - Peggy Hamburg and David Heymann
- ❖ Diagnostics and Laboratory Information Exchange
  - Steven Hinrichs



# NBAS Themes

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- A. Organizational architecture and portfolio
  - i. With authority and effective/efficient ways of working across organizations
  - ii. Align mission (national enterprise), strategy, resources, and evaluation metrics
- B. Well-trained and diverse workforce
- C. Health information technology and data sharing
- D. Innovation; original research and leveraging advances in science and technology
- E. Global Disease Detection and Collaboration



# PanH1N1 Lessons

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- ❖ Familiarity was critical to use during response
- ❖ Visibility of local conditions (focal outbreak) was a gap; having people on the ground was critical to quality information flow
- ❖ Favored flexibility of manual systems and quality people
- ❖ Manual approaches amplified the local workload
- ❖ Horizontal communication was better than vertical
- ❖ Effort establishing critical information requirements in planning paid off



# Next Steps

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- ❖ Operationalize NBAS Recommendations
- ❖ Finalize and constitute inter-governmental governance
- ❖ Stepwise development of a biosurveillance activity catalog
- ❖ NBAS development of 2<sup>nd</sup> report
- ❖ Leverage work in new priorities (e.g., PanH1N1) toward generalizable biosurveillance capability



# Biosurveillance Coordination Unit

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For more information contact:

Biosurveillance Coordination Unit  
Centers for Disease Control and Prevention  
1600 Clifton Rd., NE, MS:K-72  
Atlanta, GA 30333  
Phone: 770-488-8806  
[bcucomments@cdc.gov](mailto:bcucomments@cdc.gov)

Thank you!