

# Health Information Exchange



*A Key Concept  
for Biosurveillance*



# HIE - Definition

“HIE provides the capability to **electronically move clinical information** between disparate health care information systems **while maintaining the meaning of the information** being exchanged. The goal of HIE is to facilitate access to and retrieval of clinical data to provide **safer**, more timely, efficient, effective and equitable, **patient-centered care.**”



# Key Areas to Explore

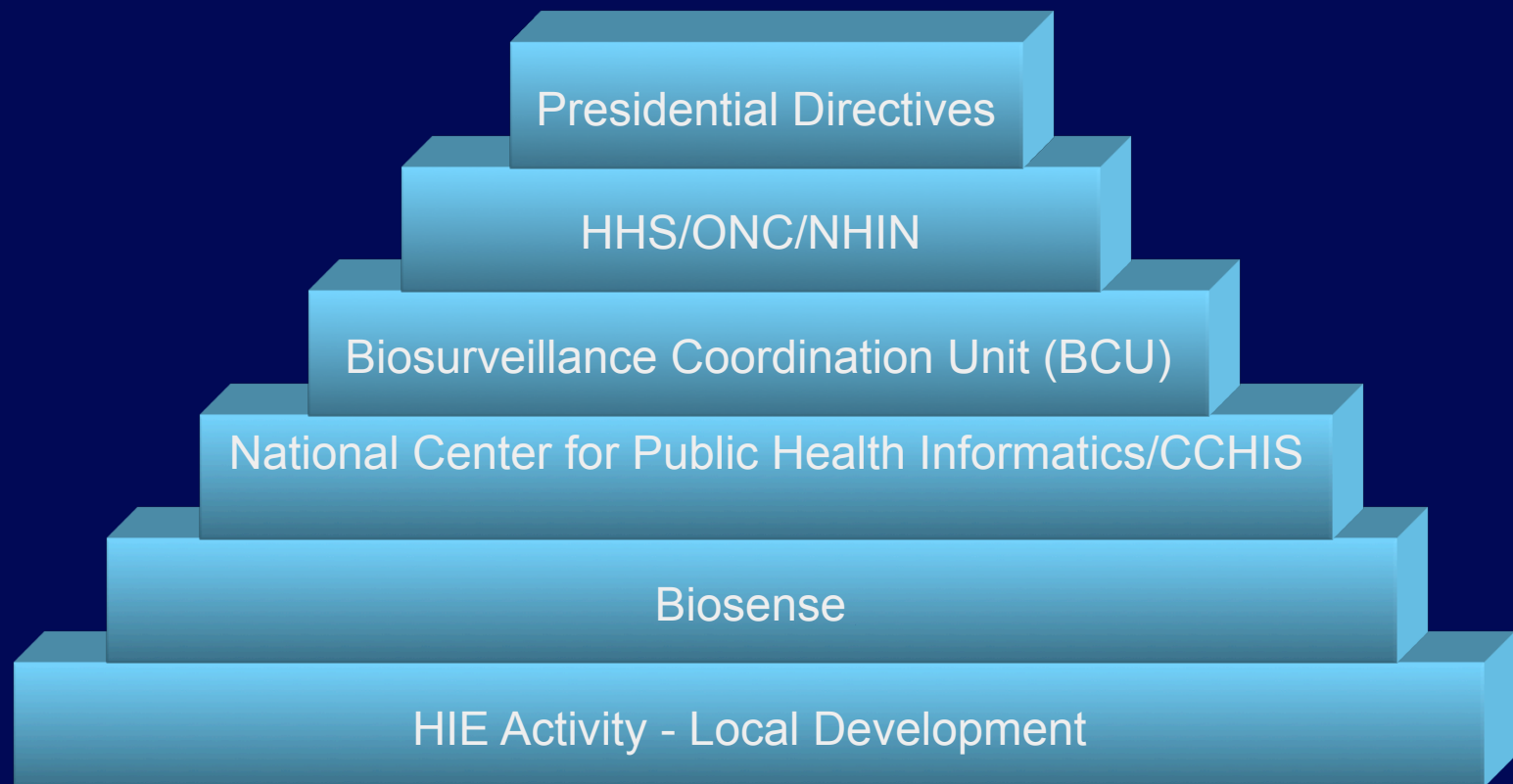
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- CDC's approach to health information exchange (HIE)
- Possible collaboration with FCC projects



# Health Information Exchange

## A View from CDC's Perspective





# HSPD\*-21

Calls on HHS to "establish an operational national epidemiologic surveillance system for human health, with international connectivity where appropriate, that is predicated on State, regional, and community-level capabilities and creates a networked system to allow for two-way information flow between and among Federal, State, and local government public health authorities and clinical health care providers."

\* Homeland Security Presidential Directive



# PAHPA\*

“IN GENERAL.—Not later than 2 years after the date of enactment of the Pandemic and All-Hazards Preparedness Act, the Secretary, in collaboration with State, local, and tribal public health officials, shall establish a near real-time electronic nationwide public health situational awareness capability through an **interoperable network of systems to share data** and information to enhance **early detection of rapid response** to, and **management** of, potentially catastrophic infectious disease outbreaks and other public health emergencies that originate domestically or abroad. Such network shall be built on existing State situational awareness systems or enhanced systems that enable such connectivity.”

\* Pandemic and All-Hazards Preparedness Act



# Public Health Biosurveillance

## Goal

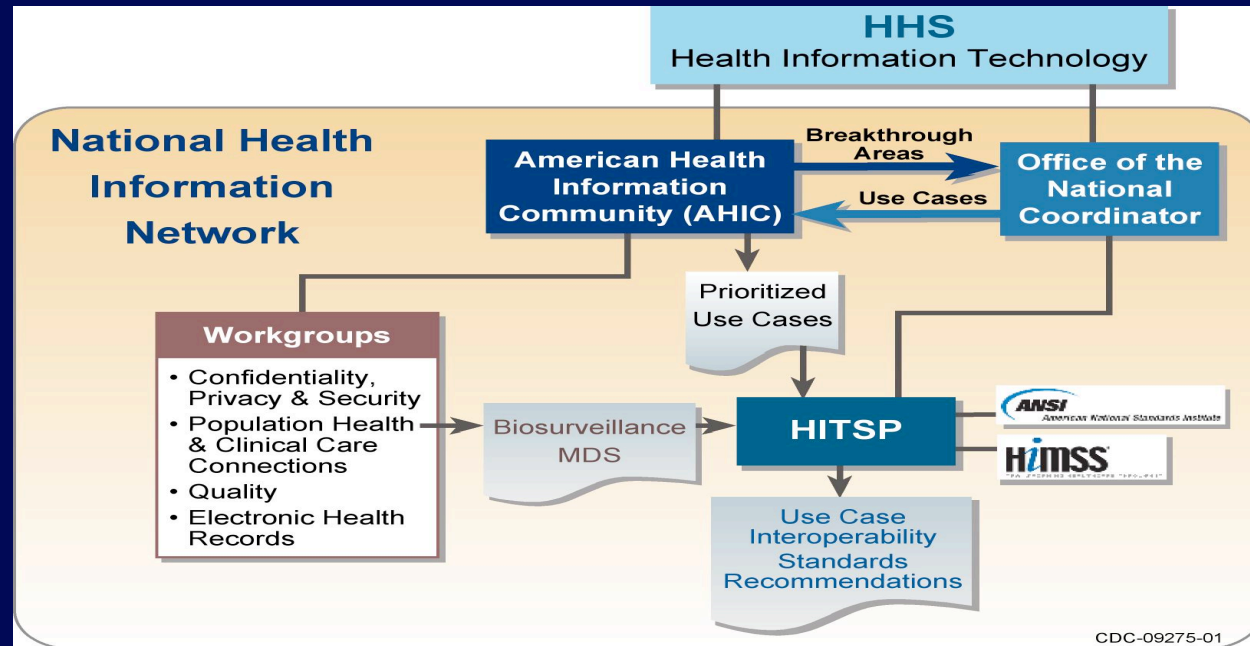
*Develop a real-time, nationwide public health event-monitoring capability to assist with the following items:*

- Early event detection
- Situational awareness
- Outbreak management
- Countermeasure and response administration



# Public Health Biosurveillance

## *Recent Activities at the National Level*



- HHS Office of the National Coordinator (ONC) for Health IT commissioned the American Health Information Community (AHIC) to define biosurveillance requirements
- AHIC created a workgroup to identify biosurveillance data requirements (i.e., Minimum Biosurveillance Data Set (MBDS))
- HITSP developed standards for transmitting biosurveillance data





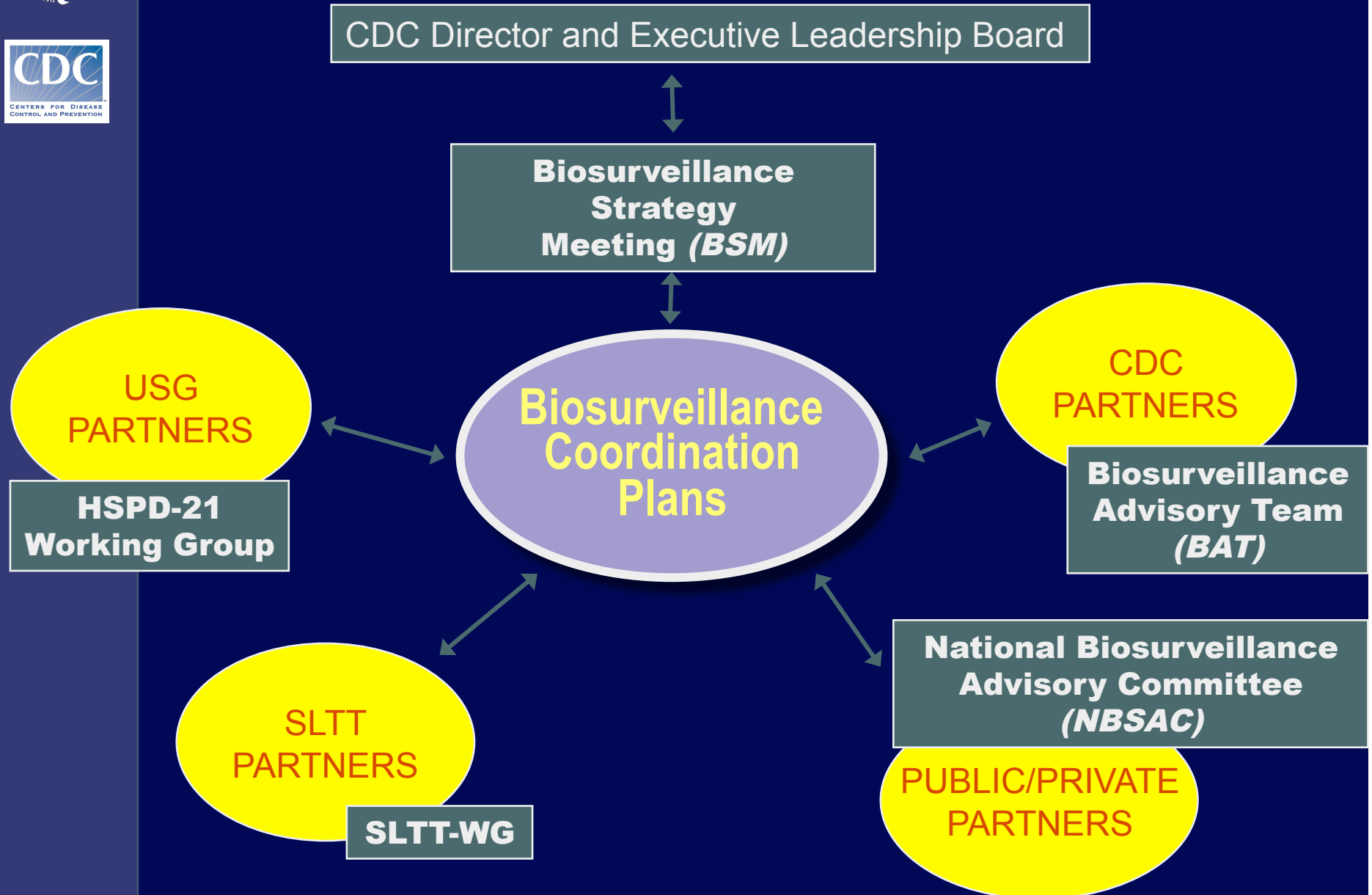
## BCU\* Mission at CDC

The BCU will coordinate the development of a strategy and implementation plan for integrated, nationwide public health surveillance to safeguard people from acute events by building upon current capabilities that **strengthen local public health practice** and **provide value to medical care.**

\* Biosurveillance coordination unit



# Stakeholder Coordination





Federal Biosurveillance

International Human Biosurveillance

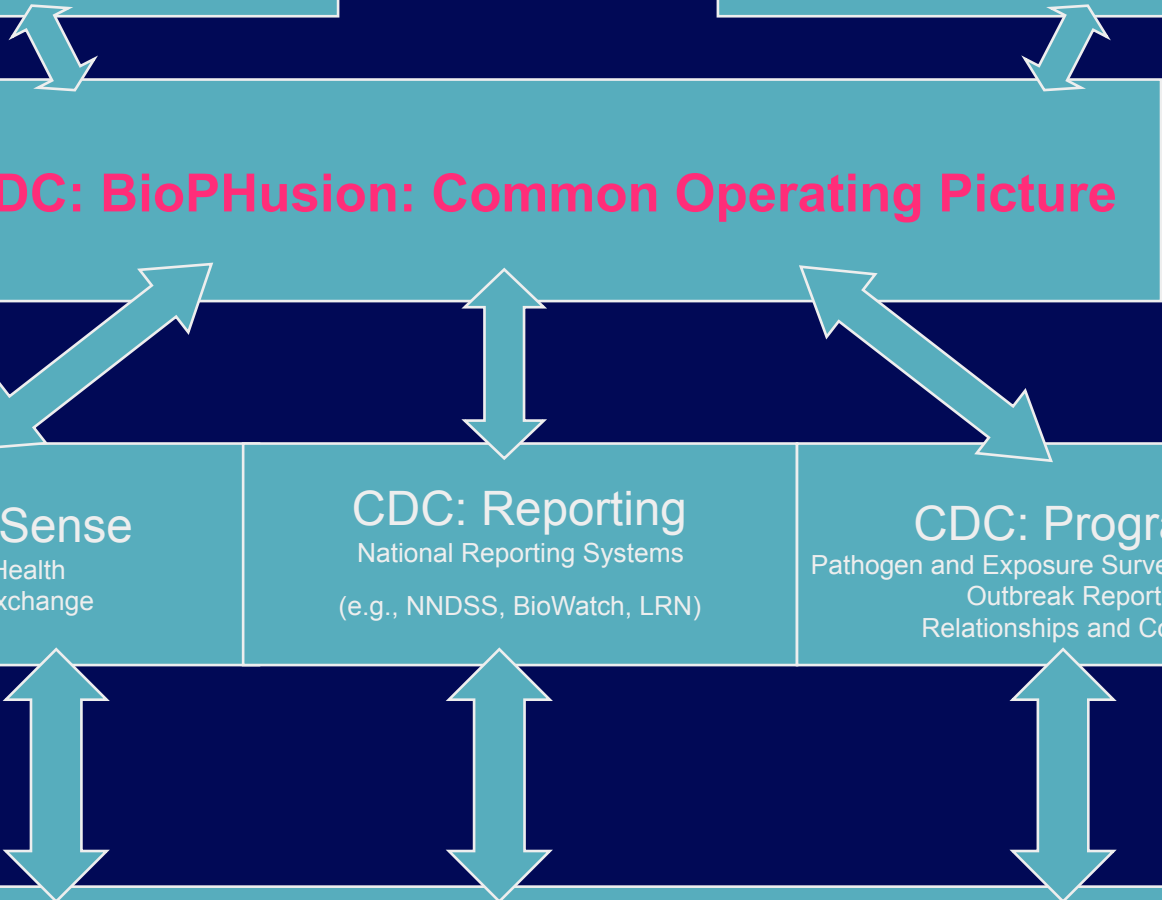
**CDC: BioPHusion: Common Operating Picture**

**CDC: BioSense**  
Electronic Health Information Exchange

**CDC: Reporting**  
National Reporting Systems  
(e.g., NNDSS, BioWatch, LRN)

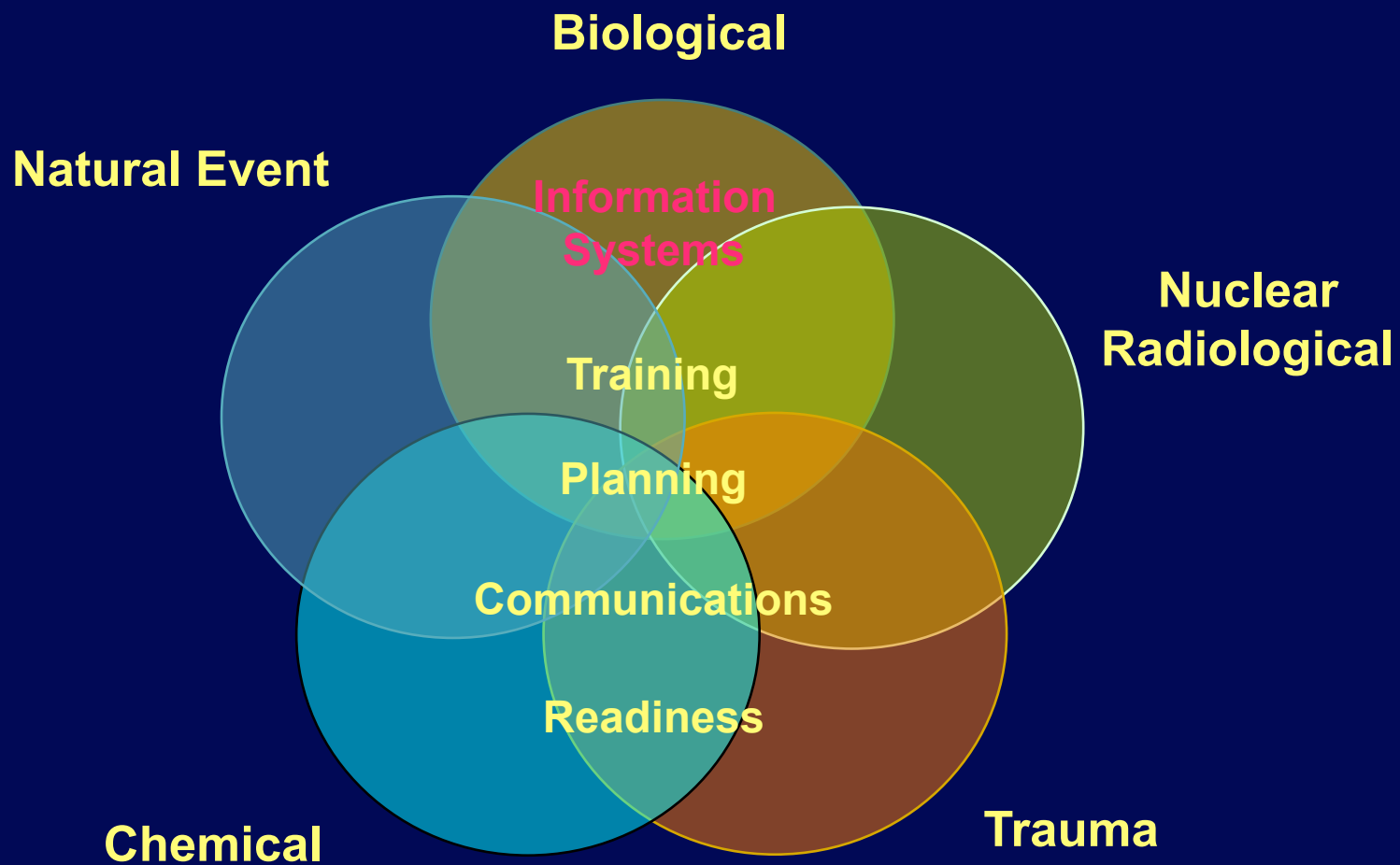
**CDC: Programs**  
Pathogen and Exposure Surveillance Systems  
Outbreak Reporting  
Relationships and Contacts

SLTT Public Health and Medical Biosurveillance (Systems, Relationships, and Workforce)





# All Hazards Approach





# BCU

## *Some Recent Activities*

- Created the NBS\*
  - *Membership*
    - Public health (7)
    - Academic (7)
    - Private sector/NGO (6)
    - Medicine (7)
    - Animal health and international health (1 each)
  - *Chair – Dr. Larry Brilliant of Google*
- First meeting in SF August 11<sup>th</sup> and 12<sup>th</sup>

\* National Biosurveillance Subcommittee



# BCU

## *Priority Areas*

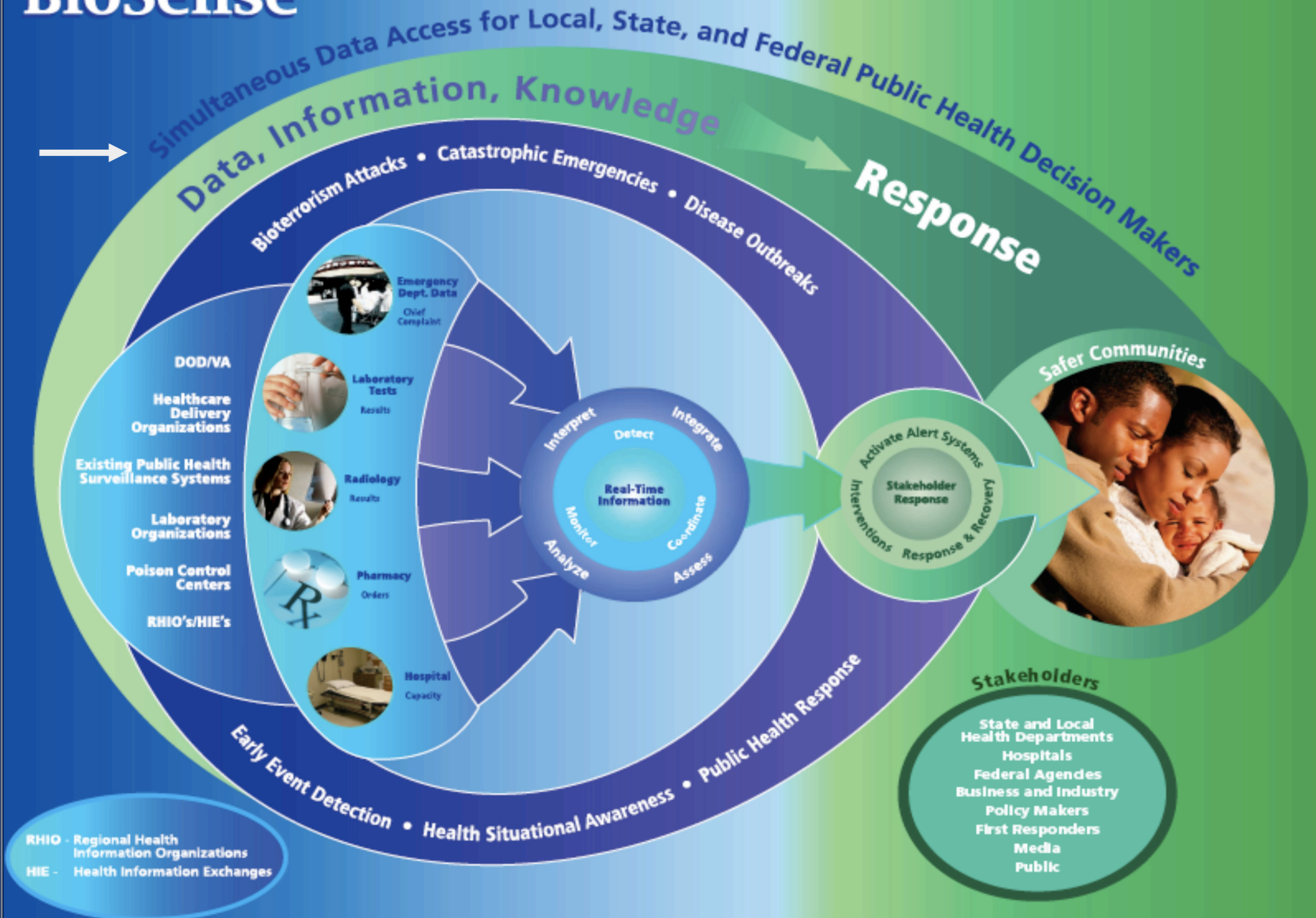
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- Health information exchange
- Laboratory innovation and creativity
- Unstructured data collection
- Integrated interpretation and communication of health-relevant information
- Global capability and connectivity
- Analytic training and workforce development



# From a Conceptual Model to a System

## BioSense





## Case Recognition: Integration with Regional HIE's

- Case detection occurs at the institutional level
- Suspected case forwarded to HIE
- HIE's search other clinical data sources in region for relevant data for suspected case and retrieves this data
  - Suspect case can be confirmed or rejected
- Composite case forwarded to state and local public health as well as CDC (when indicated)





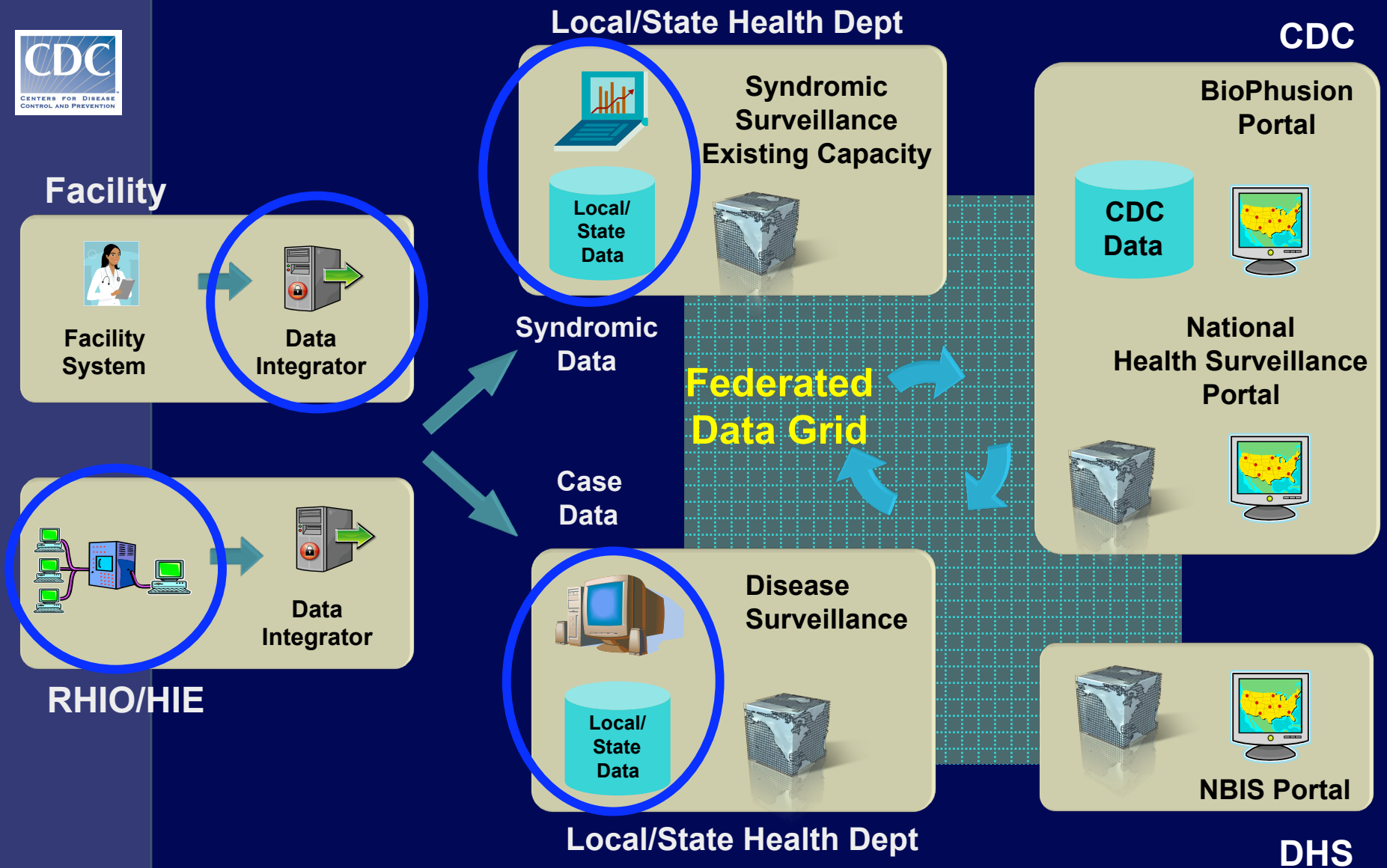
# Open Source Collaborative Development

- Lead a Public Health Informatics Community
  - Community determines technology efforts
  - Community collaborates on strategy
- Use Open Source Methods
  - Anyone can use the software
  - Anyone can copy & modify the software
  - Only trusted contributors can provide enhancements to the base product





# End State





# HIE - Our Major Activity

- A five-year, thirty-eight million dollar effort in three areas – WA/ID, IN, NY
- Initiated in February 08
- Coordinators
  - *WA/ID – SAIC*
  - *IN – Regenstrief Institute*
  - *NY*
    - Health Research Inc.
    - NYSDOH
    - NYCDOHMH



# Superb Attributes for **Team** Success

- **WAID – SAIC**
  - *Technical expertise*
  - *Government experience – CDC and NHIN*
- **IN – Regenstrief**
  - *Thirty years of HIE experience*
  - *Internationally renowned research center*
- **NY**
  - *Significant state funding*
  - *Powerful political support for statewide HIE*

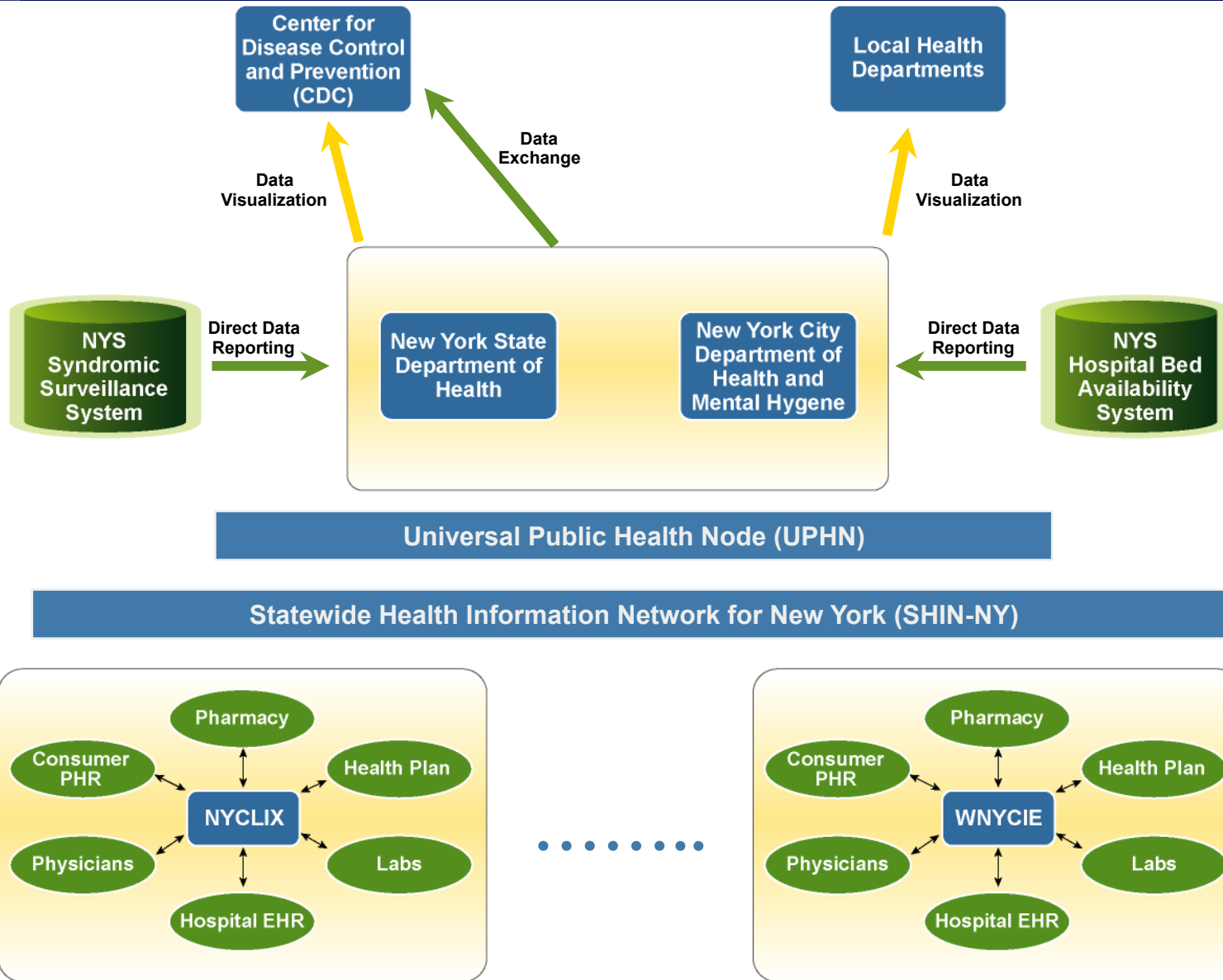


# Key Deliverables – Year 1

- Develop, test, evaluate and implement the biosurveillance use case (BUC) and Minimum Biosurveillance Data Set (MBDS)
- Demonstrate successful interchange using NHIN specifications for the BUC
- Evaluate and exchange the MBDS for ID reporting
- Bidirectional communication
- Assess analytic tools

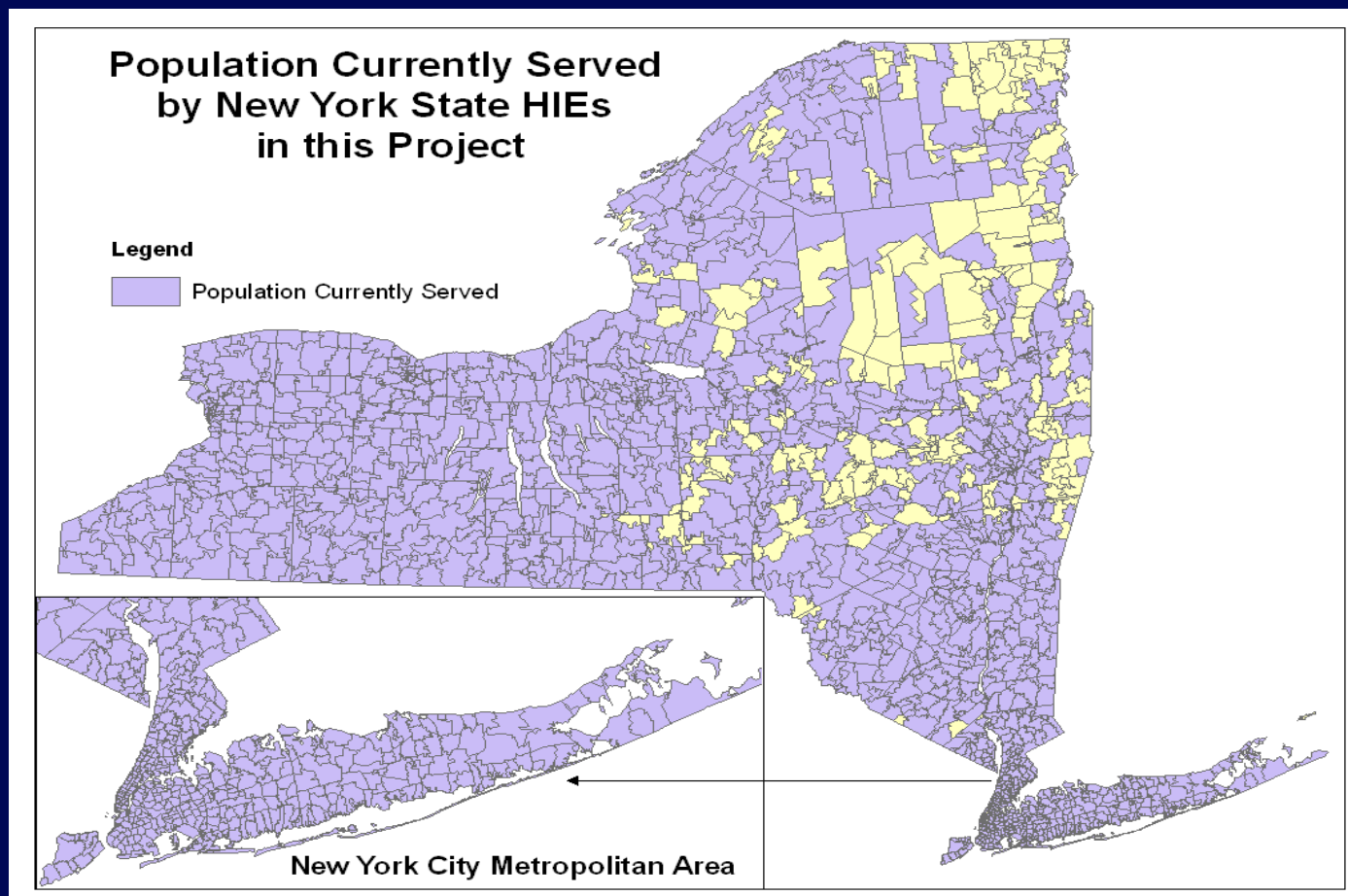


# Data Exchange – Year 2 and Beyond





# HIE Coverage in New York



## Approximate Number of People Covered in the Population Currently Served

The estimated total population served is 19,235,300; 98.54% of the New York State population including 100% of New York City Metropolitan population



# Possible Collaboration Opportunities

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- Establish communication between CDC HIE sites (IN, WA/ID, NY) and FCC-funded organizations in these regions
- Identify other HIE's that operate in areas with FCC-funded collaboratives and explore areas of joint interest that could be facilitated by CDC and FCC





## Possible Collaboration Opportunities (2)

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- Elucidate areas where FCC-funded sites are directed to collaborate with HHS/CDC and determine how HHS/CDC can assist in meeting these directives
- Examine ways that FCC-funded sites can enhance HIE activities and preparedness efforts



Questions?