INSTRUCTIONS:

Each Workgroup should use this template to document the requirements necessary to specify, implement, test and demonstrate the identified priority information exchanges in each assigned use case.

This document will be used as input and guidance as the Use Case and Core Content and Technical Workgroups develop interface specifications to support the priority information exchanges in the use cases.

The Testing Workgroup will also use these requirements to facilitate the development of related test plans, test scenarios and demonstration materials for the Trial Implementations.

Use Case Title: Biosurveillance

Workgroup: Population Workgroup

Version: 1.0, April 29, 2008

Description:

AHIC Biosurveillance Use Case: Transmit essential ambulatory care and emergency department visit, utilization, and lab result data from electronically enabled health care delivery and public health systems in standardized and anonymized format to authorized Public Health Agencies with less than one day lag time.

- Generally describe the Workgroup's understanding and assumptions in analyzing the use case priority information exchanges.

  From the AHIC Biosurveillance Use Case Section 2:

  The use case describes the process or interaction that each primary stakeholder will invoke in the capture, discovery, anonymization, and transmission of relevant data.

  This use case is for the transmission of essential data from ambulatory care and emergency department visits, utilization, and lab result data from electronically enabled healthcare delivery and public health systems in a standardized and anonymized format to authorized Public Health Agencies with less than one day lag time. The system and processes must also support the ability for authorized public health personnel to go back to the data source to seek to re-link the biosurveillance data to the data source as part of an appropriate public health investigation.

  The management of data to ensure proper routing, security, privacy, and timely reporting is critical to enabling biosurveillance activities. Potential architectural solutions to data flow issues include using individual facility data sources (e.g., single hospitals or ambulatory care sites) or data a data

or network system such as a multi-faculty system or supporting organization that uses data in the course of providing other services and sends data to all appropriate public health agencies. Other permutations of these two models can also be considered. The role of the data or network system can be accomplished by several different stakeholders, including hospital systems, health plans, independent laboratories, and other possibilities. It is anticipated that Nationwide Health Information Network efforts will develop supporting approaches an infrastructure that may offer other solutions as well.

This use case primarily includes the actions that are required to identify specific clinical care information used in the context of care and share these data with public health organizations to support Biosurveillance needs including initial event detection, situational awareness, outbreak management and response support. There are activities that occur inside of Public Health Agencies and some health care organizations related to biosurveillance functions and processing. These functions are not portrayed in this document since the use case is focused on the exchange of data from clinical sources to Public Health Agencies, rather than how the data are employed by Public Health Agencies in the execution of their missions.

- Include general interpretations that the Workgroup made to support the priority information exchanges between HIEs and between an HIE and other actors in the exchange.

  From the AHIC Biosurveillance Use Case Section 3:

  Wherever possible, existing data, workflows, and systems shall be leveraged to minimize the barriers to participation in data sharing. Further, while this use case describes delivering clinical care data to Public Health Agencies, the policies, processes and standards may be applicable to many types of public health surveillance, including communicable disease, injury, and cancer surveillance. The use case scope includes the following:

  1. Data routinely entered into hospital, ambulatory care, and other ancillary care data systems. These may include patient demographics; diagnostic data; chief complaints; triage data; laboratory orders and results; physician orders; healthcare facilities' capacity information; and admission, discharge and transfer data.
  2. Hospital systems and affiliated clinical personnel who have clinical data of public health significance or oversee response management responsibilities.
  3. The legally authorized local, regional, state, and federal public health personnel who monitor and manage public health surveillance data.

- Assumptions
  - The receiver of the biosurveillance exchanges are public health, not other health information exchanges.
  - A consideration for NHIN testing is how the receipt and validation by public health will be simulated.
  - The identification of patient level data may differ based on jurisdictional laws and regulations.
  - The HITSP specifications for biosurveillance will be utilized to format the transactions in information exchange #5.
  - Data sent to the federal public health will be anonymized.
- Issues/Risks
  - Different public health agencies, e.g., state, local, federal, may require different levels of biosurveillance information, especially as it relates to patient identifiable information and state laws and regulations.
    i. During a biosurveillance workgroup meeting on 4/17/2008, participants agreed to use the HITSP Biosurveillance standard messages and supplement them, .i.e., additional

state-required data in optional data elements in the existing HITSP standard messages and documents.

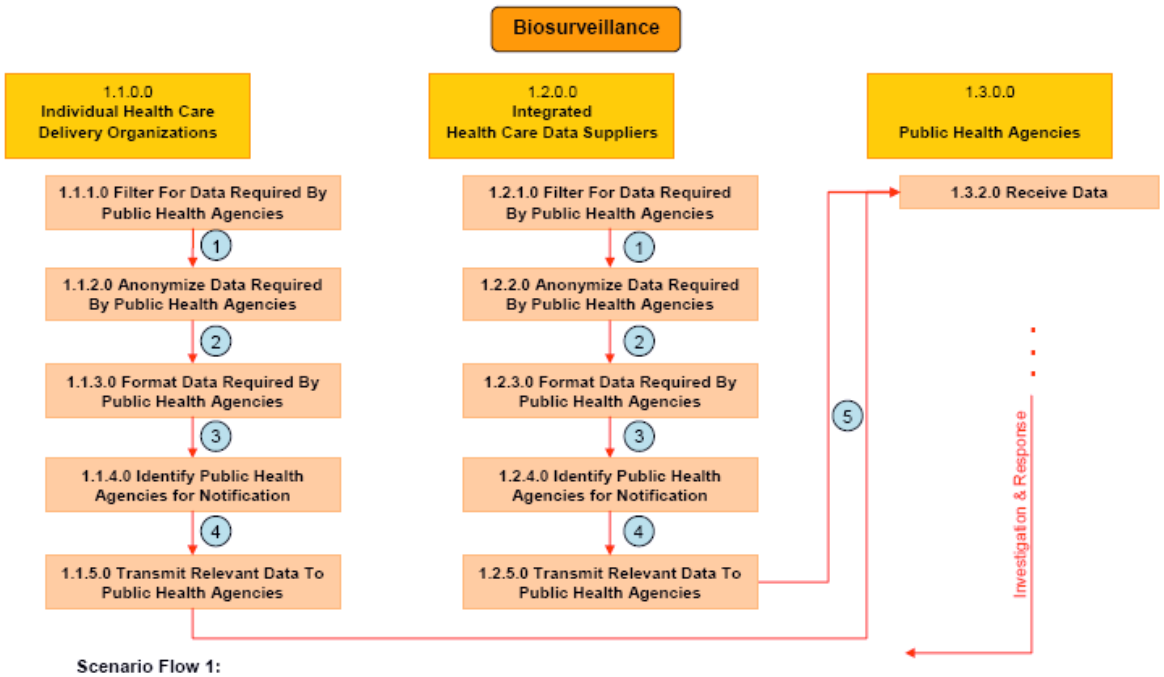
- Some sites may not have access to the full biosurveillance MDS and will only send the subset of the MDS available at the site.
- There is a perception that the HITSP Biosurveillance Interoperability Specifications are too complex. Each of the awardees will document suggested improvements to the HITSP specifications and provide this feedback to ONC.

Priority Information Exchanges:

Biosurveillance Use Case
(http://www.hhs.gov/healthit/usecases/documents/BiosurveillanceUtilizationUseCase.pdf)

Scenario 1: Transmission and Receipt of Relevant Biosurveillance Data

Priority Info. Exchanges	Use Case Description
Information Exchange #5	Data are transmitted to authorized public health agencies
Information Exchange (not numbered on right side of diagram)	During investigation public health requests re-linking of pseudonymized data



Scenario Flow 1:
Transmission and Receipt of Relevant Biosurveillance Data

1. Data from patient-clinician encounters in individual facilities (ambulatory, ER, and local labs) and from integrated healthcare data suppliers are filtered to identify the data relevant to biosurveillance. Integrated Health Care Data Suppliers include organizations such as laboratories, payer systems, claims clearing houses, integrated healthcare delivery networks, health information exchanges, et al.
2. Data are anonymized to meet privacy requirements but retain the ability to be "re-linked" to support public health investigations.
3. Data are formatted for transmission using approved standards.
4. Public Health Agencies that require data are identified
5. Data are transmitted to authorized public health agencies.

Figure 1. AHIC Biosurveillance Use Case Scenario Flow 1

Requirements:

Use Case Scenario: Biosurveillance

Information Exchange: Information Exchange #5 (Data are transmitted to authorized public health agencies)

1 Information Exchange Workflow

1.1 Workflow Steps and Description

[Describe the workflow steps in the identified use case information exchanges, including the functional capabilities of the exchanges and the actors involved.]
The following business actors, as identified in HITSP/IS-02, are involved in this functional flow scenario:

Message-Based Patient-level Surveillance Data Communication Scenario Business Actors

Actor	Description
Clinician (Bio Message Sender)	In ambulatory and emergency department settings, the healthcare providers within Healthcare Delivery Organizations with direct patient interface in the delivery of care, including physicians, nurses, and clinical supervisors. These business actors are involved in the entry of source data into the system. In the case of reportable conditions, these business actors will also enter supplemental public health data elements into the data capture form.
Message Source (Bio Message Sender)	Information system supporting the clinical care and information management for Ambulatory, inpatient, and emergency department settings for organizations, such as hospitals, physician practices, which manage the delivery of care and submission of utilization resource information.
Laboratory Information Systems (Bio Message Sender)	Information system supporting the testing, analysis, and information management for laboratory organizations. Medical laboratories, in either in a hospital or ambulatory environment, which analyze specimens as ordered by clinicians to assess the health status of patients. Laboratories, depending on how they are affiliated with hospitals, can be part of either Individual Healthcare Facilities or Integrated Healthcare Data Suppliers. These business actors are responsible for updating interface engine rules and triggers in response to Use Case modifications of requested data feeds.
Healthcare delivery organization (Bio Message Sender)	Organizations, such as hospitals, physician practices, which manage the delivery of care and submission of utilization resource information. These business actors are responsible for updating interface engine rules and triggers in response to Use Case modifications of requested data feeds.
Radiology Information Systems (Bio Message Sender)[1]	Information system supporting the testing, analysis, and information management for radiology service organizations. Radiology services, depending on how they are affiliated with hospitals, can be part of either Individual Healthcare Facilities or Integrated Healthcare Data Suppliers. These business actors are responsible for updating interface engine rules and triggers in response to Use Case modifications of requested data feeds.
Public Health Agencies (local/state/federal) (Bio Message Receiver)	Local, state, and federal government organizations and personnel that exist to help protect and improve the health of their respective constituents. A critical effort under this charge is collecting health information to monitor for the existence of emerging health threats appearing in the population and manage these threats once manifested. Staff of these agencies interacts with the BIS to verify and validate system indications of public health threats, and to assert acknowledgements that may be required by system processes.

[1] The AHIC MDS did not reflect radiology elements but it is specified in HITSP/IS-02.

It is expected that the communication of biosurveillance messages in this functional flow scenario will occur in an environment where the public health authorities, physician offices, laboratories, resources suppliers and hospitals establish secured point-to-point network connections. This may be achieved through either VPN or S/MIME approaches. There is no sharing in this functional flow scenario.

The following technical actors, as identified in HITPS/IS-02, are involved in this functional flow scenario:

Message-Based Patient-level Surveillance Data Communication Scenario Technical Actors

Actor	Description
Bio-Data Sender	BIO- Data Sender The holder of resource data who is communicating that data to the message receiver, typically the resource management information system (e.g. Census System/Bed Capacity System)
Bio-Data Receiver	An authorized entity that is receiving resource availability data (e.g. BIS/Emergency Operations Center)
Patient Identifier Cross-reference manager	Serves a well-defined set of Patient Identifier Domains. Based on information provided in each Patient Identifier Domain by a Patient Identification Source Actor, it manages the cross-referencing of patient identifiers across Patient Identifier Domains.
Patient Identifier Cross-reference consumer	This actor allows a system in a Patient Identifier Domain to determine the identification of a patient in a different Patient Identifier Domain by using the services of a Patient Identifier Cross-Reference Manager Actor.
Patient Identity Source	The Patient Identity Source Actor is a provider of unique identifier for each patient and maintains a collection of identity traits. Each Patient Identifier Domain requires this Actor to assign patient identities and to notify other Actors (e.g. a Patient Identifier Cross-reference Manager or a Registry Actor) of all events related to patient identification (creation, update, merge, etc.).
Pseudonymization Service (P & A Service)	Supplier of alternative identification information that permits a patient to be referred to by a key that suppresses his/her actual identification information.
Form Filler	The actor responsible for retrieving a form from a Form Manager, and for submitting form instance data to a Form Receiver. The mechanism by which a unique identification of a form is obtained is outside the scope of the Retrieve Form for Data Capture profile.
Form Manager	The actor that supplies a form based upon a request that supplies a unique form of identification.
Form Receiver (Biosurveillance Information System)	Repository of permanent source records of public health reports.

Transmission and Receipt of Relevant Biosurveillance

1. Data from patient-clinician encounters in individual facilities (ambulatory, ER, and local labs) and from integrated healthcare data suppliers are filtered to identify the data relevant to biosurveillance. Integrated Health Care Data Suppliers include organizations such as laboratories, payer systems, claims clearing houses, integrated healthcare delivery networks, health information exchanges, et al.
2. Data are anonymized to meet privacy requirements but retain the ability to be “re-linked”to support public health investigations.
3. Data are formatted for transmission using approved standards.
4. Public Health Agencies that require data are identified
5. Data are transmitted to authorized public health agencies.

1.2 Use Case References (e.g. Events/Actions)

[Cite applicable references to the use case (e.g. assumptions, events, actions, etc.) as well as the rationale to justify interpretations of the use case priority information exchanges.]

The technical specifications, including transaction packages and standards, are identified in the HITSP/IS-02 Interoperability Specifications for Biosurveillance.

The events and actions, from the AHIC Biosurveillance Use Case, along with applicable HITSP standards and NHIN trial implementation **Comments:**

AHIC Biosurveillance Use Case			NHIN Trial Implementation	
Code	**Description**	**Comment**	**HITSP Standards**	**Comments**
1.1.1.0	**Event:** Filter existing data to identify data required by public health agencies	Referencing data requirements communicated by Public Health Agencies in Event 1.3.1.0, all data that is appropriate to provide to public health agencies is identified so that it can be formatted using the approved data and technology standards to allow processing across the stakeholders in this use case.	Addressed somewhat in HITSP/ISTP-50 options	Noted as a GAP and deferred to roadmap efforts
1.1.1.**1**	**Action:** Filter collected data records to identify biosurveillance data	Relevant data are marked for inclusion in a transmission, via EHR or web-enabled system, to public health agencies.		
1.1.1.**2**	**Action:** Aggregate identified data	All essential data are aggregated.		

AHIC Biosurveillance Use Case			NHIN Trial Implementation	
Code	**Description**	**Comment**	**HITSP Standards**	**Comments**
1.1.2.0	**Event:** Anonymize data required by public health agencies	Data readied for transmission is anonymized to withhold direct patient identifiers. The process should allow for the data to be re-linked to a specific patient if required for and authorized public health investigation. All associated, randomized links are included with the data package.	HITSP/IST-24, HITSP/IST-25	
1.1.2.**1**	**Action:** Required data are checked to ensure full privacy requirement compliance	Ensure that all data included in biosurveillance package are anonymized and meet all applicable privacy and security considerations.		
1.1.2.**2**	**Action:** A randomized data linker is provided to allow authorized entities to re-link to patient data	Functionality is provided to re-link data to patient when required as part of an authorized public health investigation.		
1.1.3.0	**Event:** Format data required by public health agencies	Anonymized data are formatted using approved technology and data standards.	HITSP/IS-02, HITSP/ISC-36, HITSP/ISC-39, HITSP/ISC-41, HITSP/ISC-47, HITSP/ISC-48, IHE/ISC-37, HITSP/ISTP-49	
1.1.3.**1**	**Action:** Transform data using approved standards			

AHIC Biosurveillance Use Case			NHIN Trial Implementation	
Code	**Description**	**Comment**	**HITSP Standards**	**Comments**
1.1.4.0	**Event:** Identify Public Health Agencies that must be notified	For individual health care delivery organizations, the process to determine Public Health Agency jurisdiction and the requirement to notify is less complex than for multi-jurisdictional integrated health care data suppliers.	HITSP/IS-02	(Identified as a Gap)
1.1.4.**1**	**Action:** Determine which Public Health Agencies require notification	Apply business rules to determine which public agencies (which local, which state, and which federal agencies) need to be notified.		
1.1.5.0	**Event:** Transmit relevant data to public health agencies	Anonymized data are transmitted to public health agencies using approved data and technology standards.	HITSP/IS-02, HITSP/ISTP-13, HITSP/IST-29	
1.1.5.**1**	**Action:** Send results to public health agencies	Transmit the record to public health agencies. Any appropriate metadata will also be sent.		
1.1.5.**2**	**Action**: Log interaction between organization systems and public health agencies			
1.2.1.0	**Event:** Filter existing data to identify data required by public health agencies	Within the data repositories of these entities, all data that is appropriate to provide to public health agencies is identified so that it can be formatted using the approved data and technology standards to allow processing across the stakeholders in this use case.	Addressed somewhat in HITSP/ISTP-50 options	Noted as a GAP and deferred to roadmap efforts
1.2.1.**1**	**Action:** Filter stored data to identify biosurveillance data	Relevant data are marked for inclusion in electronic format to public health agencies.		

AHIC Biosurveillance Use Case			NHIN Trial Implementation	
Code	**Description**	**Comment**	**HITSP Standards**	**Comments**
1.2.1.**2**	**Action:** Aggregate identified data	All essential data are aggregated.		
1.2.2.0	**Event:** Anonymize data required by public health agencies	Data readied for transmission is anonymized to withhold direct patient identifiers. The process should allow for the data to be re-linked to a specific patient if required for an authorized public health investigation. All associated, randomized links are included with the data package.	HITSP/IST-24, HITSP/IST-25	
1.2.2.**1**	**Action:** Required data are checked to ensure full privacy requirement compliance	Ensure that all data included in biosurveillance package are anonymized and meet all applicable privacy and security considerations.		
1.2.2.**2**	**Action:** A randomized data linker is provided to allow authorized entities to re-link to patient data	Functionality is provided to re-link data to patient when required as part of an authorized public health investigation.		
1.2.3.0	**Event:** Format data required by public health agencies	Anonymized data are formatted using approved technology and data standards.	HITSP/IS-02, HITSP/ISC-36, HITSP/ISC-39, HITSP/ISC-41, HITSP/ISC-47, HITSP/ISC-48, IHE/ISC-37, HITSP/ISTP-49	
1.2.3.**1**	**Action:** Transform data using approved standards			

AHIC Biosurveillance Use Case			NHIN Trial Implementation	
Code	**Description**	**Comment**	**HITSP Standards**	**Comments**
1.2.4.0	**Event:** Identify Public Health Agencies that must be notified	For individual health care delivery organizations, the process to determine Public Health Agency jurisdiction and the requirement to notify is less complex than for multi-jurisdictional integrated health care data suppliers.	HITSP/IS-02	(Identified as a Gap)
1.2.4.**1**	**Action:** Determine which Public Health Agencies require notification	Apply business rules to determine which public agencies (which local, which state, and which federal agencies) need to be notified.		
1.2.5.0	**Event:** Transmit relevant data to public health agencies	Anonymized data are transmitted to public health agencies using approved data and technology standards.	HITSP/IS-02, HITSP/ISTP-13, HITSP/IST-29	
1.2.5.**1**	**Action:** Send results to public health agencies	Transmit the record to public health agencies. Any appropriate metadata may also be sent.		
1.2.5.**2**	**Action:** Log interaction between organization systems and public health agencies			
1.3.1.0	**Event:** Provide listing of required biosurveillance data	Public health agencies provide the listing of essential data for reporting, and specific field information.	Addressed somewhat in HITSP/ISTP-50 options; HITSP/IS-02	Noted as a GAP and deferred to roadmap efforts
1.3.1.**1**	**Action:** Notify involved organizations of data that must be transmitted to Public Health Agencies	A variety of methods for this notification may be necessary, including electronic or fax.		

AHIC Biosurveillance Use Case			NHIN Trial Implementation	
Code	**Description**	**Comment**	**HITSP Standards**	**Comments**
1.3.2.0	**Event:** Receive biosurveillance data	Public health agencies electronically receive anonymized data that is relevant to authorized biosurveillance activities. The data are anonymized, but the data contain randomized data linking capabilities to allow public health agencies to request that the sending organizations be able to support authorized public health investigators' need for more information. In cases where the message does not meet all the integrity rules, a retransmission request will be generated.	HITSP/IS-02, HITSP/ISTP-13, HITSP/ISTP-50	
1.3.2.**1**	**Action:** Receive clinical data from the all data sources.	The data as well as any pertinent information necessary for indexing and query is being provided.		
1.3.2.**2**	**Action:** Verify authenticity of transmission contents	Verify integrity of the transmission contents from the identified source. The data should contain appropriate anonymized patient information and other information per agreed to standards and policies.		
1.3.2.**3**	**Action:** Acknowledge receipt of clinical data	Send acknowledgment to senders that integrity, authenticity and completeness of results are acceptable.		
1.3.2.**4**	**Action:** Log receipt and storage of lab test results			

1.3 Key Assumptions

[Provide key assumptions the Workgroup used in interpreting the priority information exchanges, as well as the rationale.]

- HITSP references to Encounter includes AHIC Patient and Visit data.
- HITSP references to Resource Utilization includes AHIC Base Facility and Daily Facility Summary data.
- Radiology and Laboratory orders are not included in this trial implementation as there are no HITSP specifications.
- Although Radiology results are mentioned in the AHIC Biosurveillance Use Case, the data elements are not included in the AHIC Minimum Data Set.

2 Information Exchange Requirements

2.1 Triggers

[The applicable user and system-driven activities that initiate the information exchange. For example, this could describe how a particular query and retrieval, routing of information, etc. are initiated.]

The following table includes the subset of HL7 trigger events supported by the HITSP IS/02 Biosurveillance specification (and relevant components) and whether they will be include for the NHIN Trial Implementation.

Awardee Instructions:

The table below assumes that the Biosurveillance MDS feeds will be triggered by an HIE's existing HL7 message traffic. The table, as depicted, shows a biosurveillance message being created (HITSP Format). If the awardee is sending biosurveillance documents, the HITSP format should be replace by the appropriate may be a HL7 CDA document.

Each awardee should identify the triggers from the list of HL7 messages below that they will use to create the BioSurveillance data feeds to public health for this NHIN demonstration.

If the awardee is demonstrating this trigger in the NHIN demo, the NHIM Demo column should be set to Yes.

Table 1. Trigger Events, Descriptions and Requirements

HITSP Category	HITSP Format	Description	Sending Trigger	Sending System	Real Time?	NHIN Demo?
Encounter	ADT^A01	Admit/Visit Notification	ADT^A01	NW-PHIE	Yes	Yes
Encounter	ADT^A03	Discharge/End Visit	ADT^A03	NW-PHIE	Yes	Yes
Encounter	ADT^A04	Register a Patient	ADT^A04	NW-PHIE	Yes	Yes
Encounter	ADT^A06	Change an Outpatient to an Inpatient	ADT^A06	NW-PHIE	Yes	Yes
Encounter	ADT^A07	Change an Inpatient to an Outpatient	ADT^A07	NW-PHIE	Yes	Yes
Encounter	ADT^A08	Update Diagnosis/Procedure	ADT^A08	NW-PHIE	Yes	Yes
Encounter	ADT^A08	Update Patient Information	ADT^A08	NW-PHIE	Yes	Yes
Encounter	ADT^A11	Cancel Admit / Visit Notification	ADT^A11	NW-PHIE	Yes	Yes

HITSP Category	HITSP Format	Description	Sending Trigger	Sending System	Real Time?	NHIN Demo?
Encounter	ADT^A13	Cancel Discharge / End Visit	ADT^A13	NW-PHIE	Yes	Yes
Encounter	ADT^A18	Merge Patient Information				No
Encounter	ADT^A19	Patient Query				No
Encounter	ADT^A24	Link Patient Information				No
Encounter	ADT^A28	Add Person or Patient Information				No
Encounter	ADT^A29	Delete Person Information				No
Encounter	ADT^A30	Merge Person Information				No
Encounter	ADT^A31	Update Person Information				No
Encounter	ADT^A34	Merge Patient Information - Patient ID Only				No
Encounter	ADT^A35	Merge Patient Information - Account Number Only				No
Encounter	ADT^A36	Merge Patient Information – Patient ID & Account Number				No
Encounter	ADT^A37	Unlink Patient Information				No
Encounter	ADT^A39	Merge Person – Patient ID				No
Encounter	ADT^A40	Merge Patient – Patient Identifier List	ADT^A40	NW-PHIE	Yes	Yes
Encounter	ADT^A41	Merge Account – Patient Account Number				No
Encounter	ADT^A43	Move Patient Information – Patient Identifier List				
Encounter	ADT^A44	Move Account Information – Patient Account Number	ADT^A44	NW-PHIE	Yes	Yes
Encounter	ADT^A45	Move Visit Information – Visit Number				
Encounter	ADT^A46	Change Patient ID				
Encounter	ADT^A47	Change Patient Identifier List				
Encounter	ADT^A48	Change Alternate Patient ID				
Encounter	ADT^A49	Change Patient Account Number				
Encounter	ADT^A50	Change Visit Number				
Encounter	ADT^A51	Change Alternate Visit ID				

HITSP Category	HITSP Format	Description	Sending Trigger	Sending System	Real Time?	NHIN Demo?
Encounter	ORU^R01	Unsolicited Observation Message - Encounter Clinical		NW-PHIE	Yes	Yes
Base Facility	ORU^R01	Unsolicited Observation Message (Base Facility)				No
Daily Facility Summary	ORU^R01	Unsolicited Observation Message (Daily Facility Summary)				No
Lab/Micro Results	ORU^R01	Unsolicited Observation Message - Lab				No
Radiology Results	ORU^R01	Unsolicited Observation Message - Rad				No

2.2 Data Content Requirements

[The type of data needed in the exchange and when that data should conform to a specification, and (if available) identified gaps in existing NHIN or HITSP specifications that need to be addressed for the information exchange.]

For the NHIN Trial Implementation demonstration, we suggest that the participants demonstrate the sending of at least the encounter data elements. These are the element numbers

Notes:

- The AHIC Patient and Clinical data elements are combined for HITSP as Encounter.
- Base Facility and Daily Facility Summary data elements are combined for HITSP as Resource.
- The Resource data elements are not included here.

Awardees should identify the subset of the Biosurveillance MDS they will be transmitting during the demonstration. If the awardee is sending additional data elements, e.g., due to state laws or regulations, those data elements should be listed as addendum to this table.

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
Base Facility					**Resource**		
1.1	Facility Identifier	**N**	Unique facility identifier	General: - Facility identifier is routinely transmitted; facility name and location are derived.	Y	HIPAA National Provider Identifier http://www.cms.hhs.gov/NationalProvIdentStand/ 10-position all-numeric identification number assigned by the NPS to uniquely identify a healthcare provider.	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
1.2	Facility Name	**N**	Name of facility		Y		
1.3	Facility Location	**N**	City, (county) and State	General: - May use FIPS county codes	Y	**GAP:** Looks like only State (the SDO data type and example)	
1.4	Number of Facility Beds	**N**	Total number of physically available facility beds including those in non-participating or non-licensed areas; regardless of licensing or staffing status	General: - Potentially active or usable beds at full capacity in a disaster. If the data can be extracted from the appropriate system, it could be conveyed in the census messages.	Y	**GAP:** Not in HITSP/ISC-47 Resource Utilization component	
1.5	Number of Licensed Beds	**N**	Total number of Medicare and/or Medicaid certified and licensed beds within a facility)		Y		

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
Base Facility					**Resource**		
2.1	# Admissions last 24 hours	**N**	Number of admissions to facility in last 24 hours		Y	From HITSP/ISC47: OBX Segment: OBX-2 = SN OBX-3 = Admissions^Admissions Past 24 hours ^TBD OBX-5= ^nn OBX-11 = 'F'	
2.2	# Discharges last 24 hours	**N**	Number of discharges from facility in last 24 hours		Y	From HITSP/ISC47: OBX Segment: OBX-2 = SN OBX-3 = Discharges^Discharges Past 24 hours^TBD OBX-5= ^nn OBX-11 = 'F'	
2.3	# Deaths last 24 hours	**N**	Number of deaths recorded at facility in last 24 hours.	General: (Health Level 7 [HL7]) § Table 0136: Patient Death Indicator § Values: Yes/No § Where used: PID § Additional: Patient Death date/time § Values: Time Stamp § Where used: PID	Y	From HITSP/ISC47: OBX Segment: OBX-2 = SN OBX-3 = Deaths^Deaths Past 24 hours^TBD OBX-5= ^nn OBX-11 = 'F'	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
2.4	Clinical Status	**N**	Facilities clinical resources are operating § Within normal conditions. § At Level-1 surge conditions. § At Level-2 surge conditions. § Exceeded; acceptable care cannot be provided to additional patients. Diversion or community surge response is required.	General: § Description and values are based on proposed Hospital Availability Exchange (HAVE) specification http://www.comcare.org/HAVE.html	Y	From HITSP/ISC47: HAVE Values: Normal - Hospital clinical resources are operating within normal conditions. Level1 - Hospital clinical resources are operating at Level-1 surge conditions. Level2 - Hospital clinical resources are operating at Level-2 surge conditions. Full - Hospital clinical resources are exceeded and acceptable care cannot be provided to additional patients. Diversion or community surge response is required. OBX-2 = CE OBX-3 = 'ClinicalStatus^ The clinical status of the facility^TBD' OBX-5= "coded result" OBX-11 = 'F'	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
2.5	Facility Status	**N**	Facility resources are operating under: § No limitation adversely affects routine/general facility operations § Limited conditions due to damage, operating on emergency backup systems, or facility contamination. § Severe conditions with active process of partial or full evacuation. § Closure; facility no longer capable of providing services and only emergency services/restoration personnel may remain in the facility.	General: (HAVE) § CDC currently receives automatically but there has been no evaluation Feasibility: § May be possible to retrieve from current systems (e.g., EMSystems used in 35% of EDs; over 50% use some system)	Y	From HITSP/ISC47: HAVE Values: Normal - No conditions exist that adversely affect the general operations of the facility. Compromised - General operations of the facility have been affected due to damage, operating on emergency backup systems, or facility contamination. Evacuating - Indicates that a hospital is in the process of a partial or full OBX Segment: OBX-2 = CE OBX-3 = HospitalFacilityStatus^The status of the facility.^TBD OBX-5= “coded result” OBX-11 = ‘F’	

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NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
2.6	Facility Operations	**N**	Status of supplies necessary for facility operations § Meets the current needs. § Current needs not being met	General: (HAVE) § Pharmacy stock data (especially antibiotics) should be gathered.	Y	From HITSP/C47: Y/N w comment HAVE Values: Adequate - Meets the current needs. Insufficient – Current needs are not being met OBX-2 = CE OBX-3 = 'FacilityOperations^The status of supplies necessary for facility operations. ^TBD' OBX-5= "coded result" OBX-11 = 'F'	
2.7	Staffing	**N**	Available personnel to support facility operations § Meets the current needs. § Current needs not being met.	General: (HAVE) § Staffing capacities should be broken down by specialty (i.e., nurse, physician, respiratory therapy,and pharmacist).	Y	From HITSP/ISC47: Y/N w comment HAVE Values: Adequate - Meets the current needs. Insufficient – Current needs are not being met OBX-2 = CE OBX-3 ='Staffing^The status of staffing. ^TBD' OBX-5= "coded result" OBX-11 = 'F'	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
2.8	Decontamination Capacity	**N**	Capacity for chemical/biological/radiological patient decontamination. § Not being used, but available if needed. § In use and able to accept additional patients. § In use at maximum capacity. § Needs exceed available capacity.	General: (HAVE) § Might quantify to determine throughput capability and threshold for rerouting to other facilities. Feasibility: § No electronic form of decontamination capacity data exist.	Y	From HITSP/ISC47: Y/N w comment HAVE Values: I - Inactive - Not being used, but available if needed O - Open - In use and able to accept additional patients F - Full - In use at maximum capacity Exceeded - Needs exceed available capacity OBX Segment: OBX-2 = CE OBX-3 = 'DeconCapacity ^LOINC DESC^LN' OBX-5= Y or N OBX-11 = 'F'	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
2.9	EMS Traffic Status	**N**	Facility capable of: § Accepting all EMS traffic. § Some limited EMS traffic due to specific resource limitation § Receiving no EMS traffic and requesting re-route of traffic to other facilities. § Not Applicable. This facility does not have an emergency department.	General: (HAVE)	Y	From HITSP/ISC47: Value must be one of: Normal - Accepting all EMS traffic Advisory - Experiencing specific resource limitations which may affect transport of some EMS traffic. Closed - Requesting re-route of EMS traffic to other facilities. NotApplicable - Not Applicable. This hospital does not have an emergency department. OBX Segment: OBX-2 = CE OBX-3 = EMSTrafficStatus^ Ability of this emergency department to receive patients via emergency medical services.^TBD OBX-5= « coded result » OBX-11 = 'F'	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
2.10	EMS Capacity	**N**	Number of each triage patient type the hospital can accept. § Number of victims with immediate needs. § Number of victims with delayed needs. § Number of victims with minor needs. § Number of deceased victims. § One or more comments.	General: (HAVE)	Y	From HITSP/ISC47: CapacityTriageRed count CapacityTriageYellow count CapacityTriageGreen count CapacityTriageBlack count OBX Segment for each one: e.g., OBX-2 = SN OBX-3 = CapacityTriageRed ^^TBD OBX-5= ^nn OBX-11 = 'F'	
2.11	EMS Census	**N**	Number of each triage patient type the overall hospital currently has. § Number of victims with immediate needs. § Number of victims with delayed needs. § Number of victims with minor needs. § Number of deceased victims. § One or more comments.	General: (HAVE)	Y	From HITSP/ISC47: CensusTriageRed count CensusTriageYellow count CensusTriageGreen count CensusTriageBlack count OBX Segment for each one: e.g., OBX-2 = SN OBX-3 = CensusTriageRed^Number of Triage Red patients^TBD OBX-5= ^nn OBX-11 = 'F'	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
2.12	Adult ICU Beds	**N**	Capacity status for adult ICU beds	General: (HAVE) Beds supporting critically ill or injured patients; includes ventilator support and all major subtypes of ICU beds (e.g., neuro, cardiac, trauma, or medical) except burn ICU beds.	Y	From HITSP/ISC47: OBX Segment: OBX-2 = SN OBX-3 = AdultICUAvailableCount^Capacity status for adult ICU bed type^TBD OBX-5= ^nn OBX-11 = 'F'	
2.13	Medical Surgical Beds	**N**	Capacity status for medical-surgical beds.	General: (HAVE) § Ward beds; may or may not include cardiac telemetry capability.	Y	From HITSP/ISC47: OBX Segment: OBX-2 = SN OBX-3 = MedicalSurgicalAvailableCount ^ Capacity status for medical-surgical beds^TBD OBX-5= ^nn OBX-11 = 'F'	
2.14	Burn Beds	**N**	Capacity status for burn beds.	General: (HAVE) § Burn ICU beds; either approved by the American Burn Association or self-designated; NOT included in other ICU bed counts.	Y	From HITSP/ISC47: OBX Segment: OBX-2 = SN OBX-3 = BurnAvailableCount^Capacity Status for Burn ICU Beds^TBD OBX-5= ^nn OBX-11 = 'F'	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
2.15	Pediatric ICU Beds	**N**	Capacity status for pediatric ICU beds.	General: (HAVE) § Similar to adult ICU beds, but for patients 17-years-old and younger.	Y	From HITSP/ISC47: OBX-2 = SN OBX-3 = PediatricICUAvailableCount^Capacity Status for Pediatric ICU Beds^TBD OBX-5= ^nn OBX-11 = 'F'	
2.16	Pediatric Beds	**N**	Capacity status for pediatrics beds.	General: (HAVE) § Ward medical/surgical beds for patients 17-years-old and younger.	Y	From HITSP/ISC47: OBX-2 = SN OBX-3 = PediatricAvailableCount^Capacity Status for Pediatric Beds^TBD OBX-5= ^nn OBX-11 = 'F'	
2.17	Negative Flow Isolation Beds	**N**	Capacity status for negative airflow isolation beds.	General: (HAVE) § Respiratory isolation. NOTE: Value may include beds counted above.	Y	From HITSP/ISC47: OBX-2 = SN OBX-3 = NegativeFlowIsolationAvailableCount^ Capacity Status for Pediatric Beds^TBD OBX-5= ^nn OBX-11 = 'F'	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
2.18	Available Ventilators	**N**	Functional ventilators not in current use	General: § Ventilator category: Should include Bi-Pap machines and several other machines that can assist ventilation Feasibility: § Not routinely collected nor collected by BioSense § No identified specification	Y	From HITSP/ISC47: OBX-2 = SN OBX-3 = VentilatorAvailableCount^ Capacity Status for Ventilators OBX-5= ^nn OBX-11 = 'F'	
	Emergency Department Status - EMS Offload Minutes				N	**GAP:** Found in HITSP/ISC-47 MDS OBX Segment: OBX-2 = SN OBX-3 = EMSOffloadMinutes^EMS Offload Minutes^TBD OBX-5= ^nn OBX-11 = 'F'	
	HospitalBedCapacityStatus - Available Peds General Beds				N	**GAP:** Found in HITSP/ISC-47 MDS OBX Segment: OBX-2 = SN OBX-3 = BurnAvailableCount^Capacity Status for Burn ICU Beds^TBD OBX-5= ^nn OBX-11 = 'F'	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
	Report Date/Time				N	**GAP:**Found in HITSP/ISC-47 Date/time the data on this report is relevant. OBR-7 Observation Date/time Required	
Patient					**Encounter**		
3.1	Pseudonymized Data Linker	**N**	A health care organization-specific longitudinal number that links to patient-level information (i.e., medical record number, name and address) retained at the reporting facility.	General: The MBDS data sent to local, state and national public health agencies will not be fully identifiable	Y	**Definition:** A unique, randomly generated, encoded number that links to patient-level information (i.e., name and address) retained at the facility. A unique, randomly generated, encoded number that links to patient-level information (i.e., name and address) retained at the facility. **Comments:** Patient ID/MRN used to create the randomized linker patient ID.	
3.2	Event Date/Time	**N**	Date /time of the patient admission/discharge/ transfer (ADT)	General: (HL7) Values: Time Stamp Where used: EVN for ADT Concerns about duplicate (ADTs) out of the multiple sending systems.	Y	**Definition:** Time of the patient presentation for care. [Encounter has meaning only for outpatient settings.]* **Comments:** Expected on ADT^A04 Registration and ADT^A01 Admit transactions TC does not necessarily agree with the encounter comment.	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
3.3	Event Type	**N**	Designation of event type: admission, discharge, or transfer.	General: (HL7) Table 0003: Event Type Code Values: HL7 defined Where used: EVN for ADT Additional: MSH – 9	N	Not in HITSP/IS-02 but is in the Encounter messages specification	
3.4	Date of Birth	**Y**	Limited to month and year	General: (HL7) Where used: PID Full DOB not needed, and introduces confidentiality concerns (w/ zip/gender). Filtering: Requires an action or manipulation to remove the day	Y	**Definition:** [limited to month and year] **Comments:** Proposed **Definition:** "Date of Birth, limited to month and year for privacy purposes" May not be passing DOB for age over 89 due to HIPAA requirements.	
3.5	Age	**Y**	Numeric value for age	General: Requires calculation for some ADT systems Filtering: For sparsely populated areas will need to limit actual age and categorize into less specific groups	Y	**Definition:** [could be calculated] **Comments:** Proposed definition: Patient age, which may be calculated from full date of birth before the days are removed.	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
3.6	Age units	**N**	Days, Month or Years	General: Requires calculation for some ADT systems BioSense: Unified Code for Units of Measure (UCUM) Where used: OBX-6	Y	**Selected Standards:** Unified Code for Units of Measure (UCUM) for Age Units http://aurora.regenstrief.org/UCUM/	
3.7	Gender	**N**	HL7 Administrative Sex F – Female M – Male O - Other U - Unknown	General : (HL7) Table 0001: Administrative Sex Values: User defined Where used: PV-1, PID-8	Y	**Definition:** [Use standard codeset (e.g., Census)] **Selected Standards:** HL7 2.5 Administrative Sex Codes **Comments:** Proposed Definition: "Patient sex" May want to limit to M, F, U	
3.8	Zip Code	**Y**	Home address [minimum 5 Digit Zip]	General: 5-digit zip may not be needed, depending on use/purpose. Refer to HIPAA guideline Filtering: Sparsely populated geographic locations will need filtering of 5 digit zip code	Y	**Definition:** Home address [minimum 5 Digit Zip] **Comments:** Not ZIP plus Four, but will not aggregate to the first 3 characters http://zip4.usps.com/zip4/	
3.9	State	**N**	Home address [2 character abbreviation]	General: (HL7) Where used: PID-11 Patient Address	Y	**Definition:** Home address [2 character abbreviation] Selected Standard: FIPS State codes **Comments:** Data type should be coded. http://www.itl.nist.gov/fipspubs/fip55-3.htm	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
3.10	Transaction date/time	**N**	System Time stamp for when the message was sent (all registration (ADT) system transactions)	General: Required for de-duplication and/or data manipulation at receiving site based on temporal order.	Y	**Definition:** Expected date/time stamp for all registration (ADT) system transactions	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
Clinical					**Encounter**		
4.1	Diagnosis/ Injury Code	**Y**	▪ ICD-9 Clinical Modification diagnosis codes ▪ Supplementary Classification of External Causes of Injury and Poisoning ▪ Supplementary Classification of Factors Influencing Health Status and Contact with Health Services	General: Likely not available in real time May vary as more information is acquired Feasibility: Available but incomplete due to reporting delay Filtering: Mental/behavioral health and STD/HIV conditions or diagnoses should be filtered	Y	**Definition:** ICD-9 code [may vary as more information is acquired] **Selected Standards:** ICD-9/10 CM Or SNOMED CT http://www.cms.hhs.gov/ICD9ProviderDiagnosticCodes/07_summarytables.asp http://www.nlm.nih.gov/research/umls/Snomed/snomed_main.html **Comments:** Proposed **Definition:** "Diagnosis or diagnoses assigned as a result of the encounter" Industry uses mostly ICD-9 diagnosis codes used for billing purposes. The previously available SNOMED CT to ICD 9 CM statistical mapping has been enhanced to include a SNOMED CT to ICD-9-CM rule based reimbursement map. The mapping has been completed and is currently being evaluated by the NLM and vendor community. Further validation will be done by AHIMA	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
4.2	Diagnosis Type	**N**	Qualifier for Diagnosis/Injury Code specifying type of diagnosis Preliminary Interim Final Admitting	General: Correct for billing but not necessarily during an encounter or within 24 hours of event.	Y	**Definition:** Preliminary, Interim, final **Selected Standards:** HL7 2.5 Diagnosis Type Codes Proposed **Definition:** "Type of diagnosis being sent (admitting, working, final)" Data type should be Coded. Values are site-defined but typically are "working", "admission", and "final". http://tinyurl.com/enojf This field contains a code that identifies the type of diagnosis being sent. Refer to User-defined Table 0052 - Diagnosis type for suggested values. This field should no longer be used to indicate ""DRG"" because the DRG fields have moved to the new DRG segment. User-defined Table 0052 - Diagnosis type	
4.3	Diagnosis Date/Time	**N**	Date of onset of diagnosis	General: Not readily available, surrogate would be system time stamp of diagnosis data entry.	Y	**Definition:** [System time stamp of data entry likely to be only associated date and time+E94] **Comments:** Proposed **Definition:** "Date/time the diagnosis was made"	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
4.4	Discharge Disposition	**N**	If discharged, place to where patient was released. (e.g. Discharged to home or self care (routine discharge), Admitted as an inpatient to this hospital, Left against medical advice or discontinued care)	General: (HL7) Table 0112: Discharged Disposition Values: User defined Where used: PV1-36, PV2-27	Y	**Definition:** If discharged, place to where patient was released. [Need to develop a standardized list – does BioSense have one] **Selected Standards:** Universal Billing codes (UB-92/NUBC CURRENT UB DATA SPECIFICATIONS MANUAL) **Comments:** Proposed **Definition:** "Patient's anticipated location or status following the encounter." Data type should be Coded. Expected in Discharge transactions only. http://www.nubc.org	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
4.5	Patient Class	**N**	Patient classification within facility: E:Emergency I: Inpatient O: Outpatient P: Pre-admit R: Recurring patient B: Obstetrics	General: (HL7) Table 0004: Patient Class Values: User defined Where used: PV1-2	Y	**Definition:** [Need to develop a standardized list – does BioSense have one] **Selected Standards:** HL7 2.5 Patient Class Codes **Comments:** Proposed **Definition:** "General type of patient, e.g., Inpatient, Outpatient, Emergency." Data type should be Coded. May want to constrain to Emergency, Inpatient, and Outpatient. http://tinyurl.com/ezyhd This field is used by systems to categorize patients by site. It does not have a consistent industry-wide definition. It is subject to site specific variations. Refer to User-defined Table 0004 - Patient Class for suggested values. B Obstetrics C Commercial Account E Emergency I Inpatient N Not applicable O Outpatient P Preadmit R Recurring patient	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
4.6	Symptom/ Illness Onset Date/Time	**N**	Documented date/time of symptom/illness onset by triage or clinician	General: ▪ Symptom onset typically recorded in free text without any coded value ▪ Paper dominated process at present, but evolving electronic applications make data capture more feasible in the future. ▪ May require significant reformatting of onset date/time (e.g., 2 weeks ago to actual date)	Y	**Definition:** Recorded by triage or clinician [may not be coded value] **Comments:** Proposed **Definition:** Date and time of illness onset as recorded by triage or clinician Passed as observation tagged with LOINC code: '11368-8^Illness/Injury Onset Date/time^LN' There is a gap because illness onset date and time is not currently captured in a consistent manner at data sources. It is not always a date/time field and does not lend itself to responses such as "three days" or "two weeks ago". LOINC code: '11368-8^Illness/Injury Onset Date/time^LN'	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
4.7	Chief Complaint	**N**	Short description of reason for seeking care, recorded during initial registration	General: Most often text string in current registration systems. Coded complaint recorded by clinicians likely to become available in next 2-3 years as emergency department electronic triage systems are installed.	Y	**Definition:** Short description, recorded during triage, for seeking care. [may have text string or coded (e.g., ICD-9) values] **Selected Standards:** SNOMED-CT and/or Clinical Care Classification recommended for codifying of free-form text **Comments:** May be collected as a LOINC-tagged observation: '11292-0^ED Chief Complaint – Patient Reported^LN' Expected to be available with Registration and Admission transactions	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
4.8	Temperature	**N**	Recorded temperature during triage	General: (HL7 & LOINC) LOINC Code for 'Body temperature' Where Used: OBX-3 Feasibility: Not currently captured electronically in most departments,; for example in one state surveillance system, only 1 in 67 hospitals capture this data electronically. Electronic capture of this data element will likely become available in next 2-3 years as emergency department electronic triage systems are installed	Y	**Selected Standards:** Unified Code for Units of Measure (UCUM) for Temperature units **Comments:** Passed as observation tagged with LOINC code '8310-5^BODY TEMPERATURE^LN', including timestamp for when it was done	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
4.9	Pulse Oximetry	**N**	Record pulse oximetry value during triage	General: (HL7 & LOINC) LOINC Code for 'Pulse Oximetry' Where Used: OBX-3 Feasibility: Not currently captured electronically in most departments,; for example in one state's surveillance system, only 1 in 67 hospitals capture this data electronically; Electronic capture of this data element will likely become available in next 2-3 years as emergency department electronic triage systems are installed	Y	**Comments:** Passed as observation tagged with LOINC code: '19960-4^PULSE OXIMETRY^LN' including timestamp for when it was done	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
4.10	Nursing/Triage Notes	**Y**	Text string written by nurse or health care partner	General: May have serious implications for privacy and security May be source for travel history No current travel history menu boxes Usually stored as data string May be source to search for recent (e.g., in the past 24, 48, and 72 hours) patient location (e.g., mall, concert, stadium). Filtering: Filtering will not solve significant privacy issues and concerns	Y	**Definition:** Text string written by nurse or healthcare partner [may have implications for privacy and security] **Selected Standards:** SNOMED-CT and/or Clinical Care Classification recommended for codifying of free-form text **Comments:** Passed as observation tagged with LOINC code: '34120-6^INITIAL EVALUATION NOTE^LN'	
Lab Test Order					**Laboratory/Microbiology Test Order**		
5.1	Order Number	**N**	Accession number as defined by reporting laboratory § HITSP may use the term "specimen ID".	General: § Laboratories receive one source specimen that yields multiple specimens for various tests. The accession number is not unique to a specific test but rather the specimen source.	Y	**GAP:** There is no lab order component document	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
5.2	Test/Procedure Name	**N**	Procedure name from reporting laboratory	General: § Laboratory name will be used to interpret test as non-LOINC codes will be meaningless to receiver Filtering: § Tests and procedures associated with legally protected status conditions or diagnoses (e.g., HIV) should be filtered	Y	**GAP:** There is no lab order component document	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
5.3	Test/Procedure Code	**Y**	A code (e.g., LOINC/DICOM) and/or text description name should be sent; Idiosyncratic codes are the norm, thus a text description is required at a minimum	General: § Assuring accurate LOINC test code values for each test requires a submission and communication with Regenstrief Institute to add new tests and corresponding codes Feasibility: § Standardizing to LOINC mapping and implementation is difficult in smaller labs § Limited current market penetration of LOINC code mapping makes natural language processing of test/procedure name (description) a necessity § Will become easier as LOINC coding progresses in dealing with panels and institutions convert to utilize LOINC in the Laboratory Information Systems (LIS) Filtering: § Tests and procedures associated with legally protected status conditions or diagnoses (e.g., HIV) should be filtered	Y	**GAP:** There is no lab order component document LOINC DICOM	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
Lab Results					**Lab Results**		
6.1	Reporting Laboratory Identifier	N	Standard national identifier value	General: § CLIA or CAP laboratory number	Y	CLIA Unique Laboratory ID [FDA]	
6.2	Performing Laboratory	N	Standard national identifier value	General: § CLIA or CAP laboratory number Feasibility: § When sending specimen from referring laboratory to performing lab – CLIA # is not carried on request	Y	CLIA Unique Laboratory ID [FDA]	
6.3	Report Date/Time	N	Date and time of report transmission	General: § Electronic time stamp	Y	HI7 defined	
6.4	Result Status	N	Is the result: § Preliminary § Partial § Final § Corrected § Amended	General: (HL7) § Where Used: OBR-25	Y	HL7 V2.5	
6.5	Collection Date/Time	N	Date (and time, when appropriate) of the specimen collected	General: § Generally no Collection Date/Time indicated on paper requisitions; may use default (accession) date/time for specimen receipt	Y	None	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
6.6	Specimen Source	N	The Identification of the Specimen Material (e.g. CSF – Cerebral Spinal Fluid, SER – Serum, FLU – Body Fluid Unspecified, BLDV – Blood Venous)	General: (HL7) § Table 0070: Specimen Source Codes § Values: HL7 defined § Where used: OBR-15 Feasibility: § Some data sources may only have free-text field stored in message	Y	SNOMED –CT	
6.7	Ordered test code	N	A code (e.g., LOINC) and/or text description name should be sent; Idiosyncratic codes are the norm, thus a text description is required at a minimum	General: § Need method to convert to a standard code set, e.g., LOINC Feasibility: § Must at least have the data source ordered test description name § Will become easier as LOINC coding progresses in dealing with panels and institutions convert to utilize LOINC in the LIS	Y	LOINC code associated with test/procedure	

AHIC Minimum Biosurveillance Data Set (MBDS)					HITSP/IS-02 BioSuveillance		NHIN Demo?
NO.	**Data Element**	**Filter[3] (Y/N)**	**Description (values)**	**Notes/Comments**	**Included?**	**Standards / Comments**	
6.8	Resulted test	Y	Standard codes or LOINC have greatest coverage for resulted test	General: § Many institutions may have limited LOINC implementations § Association of Public Health Laboratories (APHL) has built a filter to select appropriate tests for communicable disease reporting Feasibility: § Limited implementation of LOINC codes will delay capacity to filter; would need to key off institution's idiosyncratic code Filtering: § For large organizations (e.g., national laboratories) operating at a very large scale (e.g., 10 million results/day) daily processing may delay reporting/transmission, § Would require mapping of idiosyncratic codes to defined lists (e.g., APHL, see above) to effectively filer by test codes § BioSense looks at the diagnostics section field to determine if is microbiologic test; ideally would filter on diagnostics, but uncertain if available uniformly	Y	LOINC Laboratory Test Identifiers	

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6.9	Result	N	Includes all test results including susceptibilities, serology's, non-organisms; coded value	General: § Currently, test results are generally report in the test interpretation field (see 6.11) § Need method to convert to a standard code set, e.g., SNOMED	Y	SNOMED-CT, NCCLS harmonization	
6.10	Result unit	N	May be in various formats: § Coded value (e.g., SNOMED) for organism without a unit § Susceptibility would have a unit § Viral copies	General: § Need method to convert to a standard code set, e.g., SNOMED Feasibility: § Likely available only as free text; if end-user processes free text this would be feasible (Y)	Y	UCUM	

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6.11	Test interpretation	N	May be in various formats: § Organism may be SNOMED coded § Modifiers may describe growth (e.g., colony count or "heavy") § Susceptibility for each antibiotic with accompanying minimal inhibitory concentration (MIC) value § Qualitative susceptibility measures (e.g., resistant, susceptible, intermediate) § Viral copies § Categorical (positive/negative)	General: § Variable use of SNOMED by facilities § Where Used: OBX-8 Feasibility: § Free text interpretations. § May need to convert into 3 or 4 fields since transmitted field blends multiple concepts Filtering: § Group was unable to define specific rules and methods to implement a filtering process on test interpretation field § Filtering should occur at the resulted test level (see 6.8) since the absence of a result (e.g., faulty transmission) does not uniformly indicate test was negative. § Abnormal flags would only be available for tests done on-site § BioSense does not filter at level of positive test, they receive all tests. § APHL is developing a method (i.e., natural language processing) to find appropriate test results by reading the free text test interpretation field	Y	This field contains a table lookup indicating the normalcy status of the result. We strongly recommend sending this value when applicable. (See ASTM 1238 - review for more details). Refer to User-defined Table 0078 - Abnormal flags for valid entries. When the laboratory can discern the normal status of a textual report, such as chest X-ray reports or microbiologic culture, these should be reported as N when normal and A when abnormal. Multiple codes, e.g., abnormal and worse, would be separated by a repeat delimiter, e.g., A~W. User-defined Table 0078 - Abnormal flags < Below absolute low-off instrument scale > Above absolute high-off instrument scale A Abnormal (applies to non-numeric results) AA Very abnormal (applies to non-numeric units, analogous to panic limits for numeric units) B Better--use when direction not relevant D Significant change down H Above high normal HH Above upper panic limits I Intermediate. Indicates for microbiology susceptibilities only. L Below low normal LL Below lower panic limits MS Moderately susceptible. Indicates for microbiology	

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NO.	Data Element	Filter[3] (Y/N)	Description (values)	Notes/Comments	Included?	Standards / Comments	
6.12	Test status	N	Coded value: § O: Order received; specimen not yet received § I: No results available; specimen received, procedure incomplete § S: No results available; procedure scheduled, but not done § A: Some, but not all, results available § P: Preliminary: A verified early result is available, final results not yet obtained § C: Correction to results § R: Results stored; not yet verified § F: Final results; results stored and verified. Can only be changed with a corrected result. § X: No results available; Order canceled. § Y: No order on record for this test. (Used only on queries) § Z: No record of this patient. (Used only on queries)	General Comments: (HL7) § Table 0123: Results Status § Values: HL7 defined § Where used: OBR-25	Y	This field contains the status of results for this order. This conditional field is required whenever the OBR is contained in a report message. It is not required as part of an initial order. There are two methods of sending status information. If the status is that of the entire order, use ORC-15-order effective date/time and ORC-5-order status. If the status pertains to the order detail segment, use OBR-25-result status and OBR-22-results rpt/status chng - date/time. If both are present, the OBR values override the ORC values. This field would typically be used in a response to an order status query where the level of detail requested does not include the OBX segments. When the individual status of each result is necessary, OBX-11-observ result status may be used. A Some, but not all, results available C Correction to results F Final results; results stored and verified. Can only be changed with a corrected result. I No results available; specimen received, procedure incomplete (Used only on queries) Z No record of this patient. (Used only on queries) O Order received; specimen not	

2.3 Other unique requirements

[Identify the functionality or interoperability capabilities that will be needed to support the information exchange.]

For the purposes of the NHIN Trial Implementation demonstration, each participant will create conformant biosurveillance messages based off a set of input transactions from their respective systems based on the test scenarios.

Use Case Scenario: Biosurveillance

Information Exchange: Information Exchange (not numbered on right side of diagram) (During investigation public health requests re-linking of pseudonymized data)

1 Information Exchange Workflow

1.1 Workflow Steps and Description

[Describe the workflow steps in the identified use case information exchanges, including the functional capabilities of the exchanges and the actors involved.]

The authorized public health personnel will need to go back to the data source to seek to re-link the biosurveillance data to the data source as part of an appropriate public health event or investigation.

1.2 Use Case References (e.g. Events/Actions)

[Cite applicable references to the use case (e.g. assumptions, events, actions, etc.) as well as the rationale to justify interpretations of the use case priority information exchanges.]

1.3 Key Assumptions

[Provide key assumptions the Workgroup used in interpreting the priority information exchanges, as well as the rationale.]

- No standard PIX system is assumed.
- Re-identification of patients will only be done within an HIE, not between HIEs.
- Source systems will need to have a way to identify and authorize the public health users
- The users will have the Pseudonymized Data Linker identifier as sent in the biosurveillance messages and documents and will receive the hospital identifiers for that Pseudonymized Data Linker identifier.

2 Information Exchange Requirements

2.1 Triggers

[The applicable user and system-driven activities that initiate the information exchange. For example, this could describe how a particular query and retrieval, routing of information, etc. are initiated.]

Typically, this information exchange begins when a need arises to re-identify the patient in a public health event or investigation. There are no message or document triggers.

2.2 Data Content Requirements

[The type of data needed in the exchange and when that data should conform to a specification, and (if available) identified gaps in existing NHIN or HITSP specifications that need to be addressed for the information exchange.]

The Pseudonymized Data Linker will be utilized to trace back to the hospital identifiers.

2.3 Other unique requirements

[Identify the functionality or interoperability capabilities that will be needed to support the information exchange.]