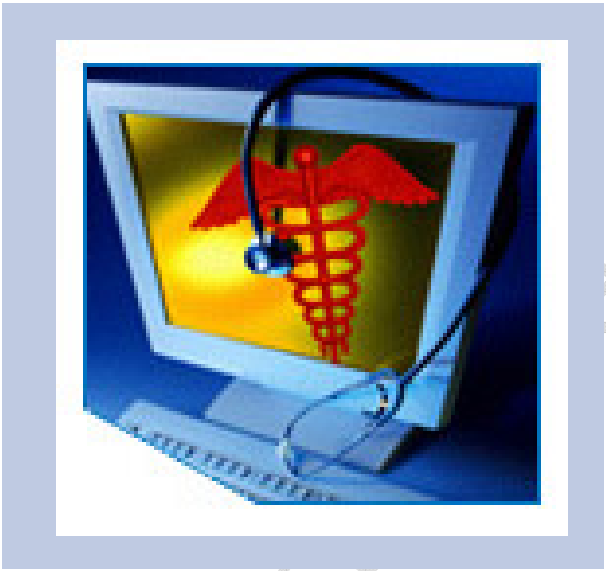
August 18, 2006
Version 1.0

HITSP Interoperability Specification: Radiology Result Message Component

HITSP/ISC-41



Submitted to:

Healthcare Information Technology Standards Panel

Submitted by:

Biosurveillance Technical Committee

DOCUMENT CHANGE HISTORY

Version Number	Description of Change	Name of Author	Date Published
1.0	Final Draft	Biosurveillance Technical Committee	18-August 2006

1.0 FOREWORD

Healthcare Information Technology Standards Panel (HITSP) is a multi-stakeholder coordinating body designed to provide the process within which affected parties can identify, select, and harmonize standards for communicating healthcare information throughout the healthcare spectrum. HITSP functions as a partnership of the public and private sectors and operates with a neutral and inclusive governance model administered by the American National Standards Institute. The goal of the Panel is to:

- Facilitate the development of harmonized interoperability specifications and information policies, including SDO work products (e.g. standards, technical reports). These policies, profiles and work products are essential for establishing privacy, security and interoperability among healthcare software applications.
- Coordinate, as appropriate, with other national, regional and international groups addressing healthcare informatics to ensure that the resulting standards are globally relevant.
- Be use-case driven, utilize information from stakeholders and base its decisions on industry needs.

The HITSP shall serve the public good by working to ensure that the combined work of various healthcare information standards organizations supports interoperability, accurate use, access, privacy and security of shared health information.

In order to advance the goal of expanding harmonized interoperability specifications and information policies, HITSP was tasked with developing interoperability specifications for three main use case "breakthroughs areas" in which specific, near term value to the health care consumer could be realized. The harmonized use case areas are:

1.	Biosurveillance	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.
2.	Consumer Empowerment	Allow consumers to establish and manage permissions access rights and informed consent for authorized and secure exchange, viewing, and querying of their linked patient registration summaries and medication histories between designated caregivers and other health professionals.
3.	Electronic Health Record	Allow ordering clinicians to electronically access laboratory results, and allow non-ordering authorized clinicians to electronically access historical and other laboratory results for clinical care.

The interoperability specification provides a detailed mapping of existing standards and specifications such as implementation guides, integration profiles to actions and actors that satisfy the requirements imposed by the relevant use cases. It identifies and constrains standards where necessary, and creates

groupings of specific actions and actors to further describe the relevant contexts. Where gaps and overlaps are identified, the interoperability specification provides recommendations and a roadmap for corrections to be made.

2.0 INTRODUCTION

2.1 OVERVIEW

The Interoperability Specification focuses on a set of constrained standards for information interchange that address the core requirements of the Use Case described herein. It does not define all functions, constructs and standards necessary to implement a conforming system in a real world environment. In particular, an implementer must provide the technical infrastructure and security framework necessary to support operations in accordance with law, regulation, best practices and business agreements.

2.2 AUDIENCE

The interoperability specification is designed to be used by analysts who need to understand the interoperability requirements for the described use case, and by implementers working to develop interoperable applications. Understanding and using the relevant interoperability set of specifications is a key requirement for establishing interoperability compliance.

2.3 TERMS AND DEFINITIONS

The definitions used for the purposes of this document can be found in the glossary. Refer to glossary in the appendix.

2.4 CONVENTIONS

This specification uses the following to convey the full descriptions and usage of standards:

UML sequence and activity diagrams

In these diagrams, the actors and transactions are highlighted within the framework of the specific scenario or context. The actors involved in the specified use-scenario or context are mapped out, and the interactions between each action and actor for a particular context, and the flow of data are provided through the use of arrows. Diagrams are named according to the section in which they reside, and will use the following naming convention:

Figure <section number>-<consecutive number for the diagram, e.g. 1, 2, 3, etc.>. <Short name/description of diagram>. For example, a diagram residing in section 3.1.3 showing the Actor Interactions for the Send Lab Results transaction package is named:

Figure 3.1.3-1. Send Lab Results Transaction Package

Tables

Tables are used to indicate standards categorizations, as well as dependencies and constraints between constructs. Tables are named according to the section in which they reside, and will use the following naming convention:

Table <section number>-<consecutive number for the table, e.g. 1, 2, 3, etc.>. <Short name/description of table>. For example, a table residing in section 2.7.1 showing the Dependencies between the transactions for the Send Lab Results transaction package is named:
Table 2.7.1-1. Send Lab Results Transaction Package dependencies

References

When references are made to another section within an Interoperability Specification a section number is used by itself. When references are made to other constructs that are related to the Interoperability Specification, such as Transaction Packages, Components or Composite Standards, the HITSP document short name and section number are displayed as follows:

<HITSP Document short name or Composite Standard Short Name>-<Volume Number>: <section number>

where:
<HITSP document short name> is a short designator for the construct (e.g. HITSP/ISTP-013)
<Composite Standard Short Name> is a short designator for the composite standard (e.g. IHE-ITI TF)
<Volume Number> is the applicable volume within the given composite standard (e.g. 1)
<section number> is the applicable section number (e.g. 3.1)

For example: HITSP/ISTP-013: 3.1 refers to Section 3.1 in the Interoperability Specification for a Transaction Package, IHE-ITI TF-2: 4.33 refers to Section 4.33 in volume 2 of the IHE IT Infrastructure Technical Framework.

Reproductions

Where large sections of composite standards or base standards are reproduced within a HITSP specification, the reproduced sections are cited with introductory text containing the reference information for the composite or base standard. In addition, the beginning and ending of the reproduced text are respectively shown using a beginning statement:

The text for the <composite or base standard name> specification begins here:

And an ending statement:

The text for the <composite or base standard name> ends here.

2.5 COMMENTS

To submit comments for this interoperability specification, please download the Comment Submission sheet from the HITSP site at www.hitsp.org and provide all relevant information, and then email the completed document to hitspcomments@ansi.org. Comments are consolidated periodically and sent to the Technical Committees for review.

2.6 COPYRIGHT PERMISSIONS

COPYRIGHT NOTICE

3.0 STANDARDS REFERENCES

3.1 LIST OF BASE STANDARDS

Context Standards	
Standard	Description/Reason for selection/Reference
None	
Information Interchange Standards	
Standard	Description/Reason for selection/Reference
HL7 ADT Messages	Description: HL7 ADT messages will be used to send Encounter-level information from a Biosurveillance information source to the BioSurveillance system Reasoning: HL7 is pervasively used in hospitals and other clinical settings that are the source of Biosurveillance information. Reference: HL7 v2.5-2003 ADT messages, Chapter 3
Terminology Standards	
Standard	Description/Reason for selection/Reference
SNOMED CT	Description: Systemized Nomenclature of Medicine Clinical Terms Reasoning: SNOMED CT was selected by the Consolidated Health Information Initiate (CHI) as appropriate terminology for data elements that are part of the Biosurveillance data set. Reference: http://www.snomed.org/
ICD-9 CM	Description: International Classification of Diseases Version 9 Clinical Modifications Reasoning: These are the codes that are in use by healthcare organizations and ICD-9 was selected by the Consolidated Health Information Initiative (CHI) as appropriate terminology for diagnosis information.

Context Standards	
	Reference: http://www.cdc.gov/nchs/icd9.htm
Unified Code for Units of Measure (UCUM)	Description: Unified Units of Measure from the Regenstrief Institute Reasoning: Commonly used within HL7 messages to express units of measure. Reference: http://aurora.regenstrief.org/UCUM/
FIPS 5-2 State Codes	Description: Federal Information Process standard 5-2 which list 2 character state codes. Reasoning: These are the state codes that are in routine use by healthcare organizations and is recommended by CHI. Reference: http://www.itl.nist.gov/fipspubs/fip5-2.htm
Universal Billing Codes (UB-92)	Description: Universal Billing Codes for Field 22, Discharge Disposition Reasoning: CHI adopted HL7 v2.4 and higher for the Clinical Encounter Domains. UB-92 codes have been selected by HL7 as the appropriate terminology for Discharge Disposition Reference: http://www.hipaanet.com/hisb_ub92.htm
Patient Class HL7 Version 2.5	Description: Patient classes define by HL7 version 2.5 Reasoning: CHI has recommended using HL7 v2.4 and higher terminology for patient class. Reference: See table HL0004 in the HL7 V2.5 standard, Chapter 3
Gender HL7 Version 2.5	Description: Gender defined by HL7 version 2.5 Reasoning: CHI has recommended using HL7 V2.4 and higher terminology for patient demographic information. CHI recommended restricting to Male, Female and Unknown. Reference: See table HL0001 in the HL7 V2.5 standard, Chapter 3
Diagnosis Type HL7 Version 2.5	Description: Diagnosis type from HL7 V2.5 Reasoning: HL7 diagnosis types are commonly used in HL7 messages Reference: See table HL0052 in the HL7 V2.5 standard, Chapter 6
Clinical Care Classification (Nursing)	Description: The Clinical Care Classification (CCC) is standardized coded framework for documenting, coding, and tracking of patient care by nurses and other clinical professionals in any health care setting. Reasoning: Nursing terminology with atomic-level concepts and therefore that meets criteria for a standardized terminology. Reference: www.sabacare.com http://www.ushik.org/registry/x/model_CCC.html
Security Standards	
Standard	Description/Reason for selection/Reference
None	

Context Standards	
Identifier Standards	
Standard	Description/Reason for selection/Reference
None	
Functionality and Process/Process and Workflow Standards	
Standard	Description/Reason for selection/Reference
None	
Legislative Standards	
Standard	Description/Reason for selection/Reference
None	
Other Standards	
Standard	Description/Reason for selection/Reference
None	

Table 3.1-1 List of Base Standards

3.2 LIST OF COMPOSITE STANDARDS

Not Applicable

4.0 COMPONENT

4.1 CONTEXT OVERVIEW

4.1.1 CONTEXTUAL CONSTRAINTS

4.1.2 TECHNICAL ACTORS

Actor	Description
Biosurveillance Message Sender	Copy definition from other components
Biosurveillance Message Receiver	Copy definition from other components

Table 4.1.2-1 Technical Actors

4.2 INFORMATION INTERCHANGE COMPONENTS: RULES FOR IMPLEMENTING

The Radiology Results Messaging component uses the HL7 V2.5 ORU^R01 unsolicited result message to send Biosurveillance data to the Biosurveillance system. The Biosurveillance data is constrained to the AHIC defined Biosurveillance data set (see section 4.2.3.1 Minimum Data Set) and codified with the appropriate terminology (section 6.3 Appendix).

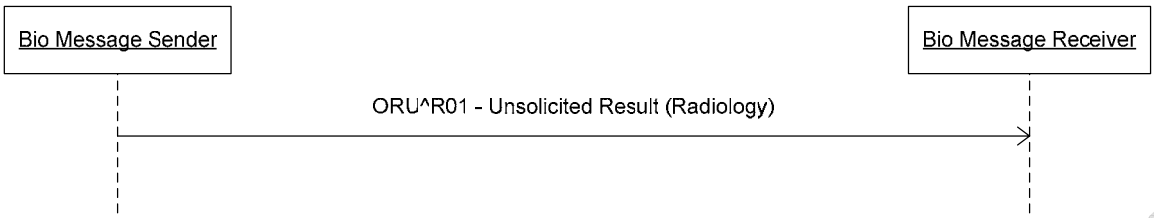


Figure 4.2-1 Send Biosurveillance data

4.2.1 PROCESS PRE-CONDITIONS

This document focuses on results reporting in Radiology. It is expected that Radiology reports will include information received from DICOM-compliant radiology systems, ADT patient registration and order entry systems.

4.2.1.1 PROCESS TRIGGERS

The trigger for sending the radiology report is the formatting of the radiology result data into a report.

4.2.2 PROCESS POST-CONDITIONS

The appropriate HL7 ORU^R01 message is created with the proper format and terminology.

4.2.2.1 PROCESS OUTPUTS

The appropriate HL7 ORU message is created with the proper format and terminology. The HL7 ORU message will need to be anonymized and pseunonymized.

4.2.3 DATA STRUCTURE

The Radiology Results Biosurveillance data is formatted into a HL7 V2.5 ORU^R01 message structure The segments that are used to pass the Radiology result message elements are:

- Message Header (MSH)
- Patient Identification (PID)
- Observation Request (OBR)
- Observation (OBX)

The structure below portrays the HL7 2.5 ORU^R01 abstract message format constrained for use with the Radiology Result data elements.

ORU^R01 UNSOLICITED RESULT MESSAGE FORMAT	
ORU^R01^ORU_R01	Unsolicited Observation Message
MSH	Message Header

ORU^R01 UNSOLICITED RESULT MESSAGE FORMAT	
ORU^R01^ORU_R01	Unsolicited Observation Message
{	--- PATIENT_RESULT begin
[	--- PATIENT begin
PID	Patient Identification
[	--- VISIT begin
PV1	Patient Visit
]	--- VISIT end
]	--- PATIENT end
{	--- ORDER_OBSERVATION begin
[ORC]	Order common
OBR	Observations Request
[{	--- OBSERVATION begin
OBX	Observation related to OBR
{ [NTE] }	Notes and comments
}]	--- OBSERVATION end
[{	--- SPECIMEN begin
SPM	Specimen
}]	--- SPECIMEN end
}	--- ORDER_OBSERVATION end
}	--- PATIENT_RESULT end

Table 4.2.3-1 ORU^R01 Unsolicited Result Message Format

4.2.3.1 MINIMUM DATA-SET

RADIOLOGY RESULT MINIMUM DATA SET	
Data Element	Description
Study ID/Radiology Number	This is a unique identifier for the radiological study, so that we can link report revisions with the original report. This should be a composite of the accession numbers from the institution and the institution ID.
Pseudonymized Patient ID /Randomized Data Linker	A pseudonym Patient ID is created to uniquely distinguish a patient across all visits to a single institution, or across all visits to a healthcare system when a common patient identification system is used. The Biosurveillance Patient ID does not contain personally identifiable information. It is used by the healthcare facility to associate Biosurveillance patient data to the patient's medical record.
Date of Birth	Patient's year and month of birth (day is not included for privacy purposes)
Sex	Patient sex
Zip code	Patient residence zip code
State	Patient residence – state
Study date and time	Date / time the exam was performed.
Study Reason	Reason that the test was performed. This field may come from the order entry system or from DICOM, and is often passed on with the result.
Report date/time	Report/Reading Date.
Original vs. Revised Report Flag	A flag indicating if this is a revised report with code referencing the study ID. Status of the report (preliminary, final, corrected) is required in a result message.
Test Performed	Radiology test code/description.
Impressions	Radiologist's diagnosis and impressions.
Date / Time Revised	Date and time of the report revision

Table 4.2.3.1-1 Radiology Result Minimum Data Set

4.2.3.2 DATA MAPPING

4.2.3.2.1 HL7 SEGMENT AND FIELD DESCRIPTIONS

This section contains descriptions of the segments used. Within each segment, the supported fields are briefly described. For more information on segments and fields, refer to the *HL7 Standard*.

Segment Attribute Table Abbreviations

The abbreviated terms and their definitions as used in the segment table headings, are as follows:

SEGMENT ATTRIBUTES	
Abbreviation	Definition
Seq	Sequence of the elements as they are numbered in the HL7 segment.

SEGMENT ATTRIBUTES	
Abbreviation	Definition
Len	Maximum length of the element. Length of an element is calculated using the following rules: • Field length = (Sum of all supported component lengths) + (component number of the last supported component) – 1. • Component length = (Sum of all supported sub-component lengths) + (sub-component number of the last supported component) – 1. Lengths should be considered recommendations, not absolutes. The receiver may truncate fields, components, and sub-components longer than the recommended length. The receiver should not fail to process a message simply because fields, components, or sub-components are too long.
DT	Data type used for HL7 element.
Usage	Usage of the field for Biosurveillance messaging. Indicates if the field is required, optional, or conditional in a segment. Legal values are:
Repeats	A Y indicates that the element may appear more than once in the field. A number indicates the maximum number of instances.
Value Set	Pre-coordinated tables used in Biosurveillance messages.
HL7 Element Name	HL7 descriptor of the element in the segment.
Description/Comments	Context and usage for the element.

Table 4.2.3.2-1 Segment Attributes

MSH – Message Header Segment

215 The Message Header Segment (MSH) is necessary to support the functionality described in the Control/Query chapter of the *HL7 standard*. MSH is used to define the intent, source, destination, and some specifics of the syntax of a message. The message header is mandatory for every message.

MESSAGE HEADER SEGMENT (MSH)							
SEQ	LEN	DT	OPT	RPT/#	TBL #	HL7 Element Name	Description/Comments
1	1	ST	R			Field Separator	Character to be used as the field separator for the rest of the message. The supported value is |, ASCII (124).
2	4	ST	R			Encoding Characters	Field that always contains the following four characters, in the same order: |^~\&|.
3	227	HD	R			Sending Application	Field used to uniquely identify the sending application for messaging purposes.
3.1	20	IS	O			Namespace ID	
3.2	199	ST	R			Universal ID	
3.3	6	ID	R			Universal ID Type	
4	227	HD	R			Sending Facility	Unique identifier of the facility that sends the message.
4.1	20	IS	O			Namespace ID	
4.2	199	ST	R			Universal ID	
4.3	6	ID	R			Universal ID Type	
5	227	HD	R			Receiving Application	Field used to uniquely identify the receiving application for messaging purposes.
5.1	20	IS	O			Namespace ID	
5.2	199	ST	R			Universal ID	

MESSAGE HEADER SEGMENT (MSH)							
SEQ	LEN	DT	OPT	RPT/#	TBL #	HL7 Element Name	Description/Comments
5.3	6	ID	R			Universal ID Type	
6	227	HD	R			Receiving Facility	Unique identifier of the facility that is to receive the message.
6.1	20	IS	O			Namespace ID	
6.2	199	ST	R			Universal ID	
6.3	6	ID	R			Universal ID Type	
7	24	TS	R			Date/Time Of Message	Date/time the sending system created the message.
7.1	24	DTM	R			Time	YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ], where at least the first fourteen digits are used to specify to a precision of "second." The time zone (+/-ZZZZ) is represented as +/-HHMM offset from Coordinated Universal Time (UTC) (formerly Greenwich Mean Time [GMT]), where +0000 or -0000 both represent UTC (without offset). Note that if the time zone is not included, the time zone is understood to be the local time zone of the sender.
9	15	MSG	R			Message Type	Field containing the message type, trigger event, and the message structure ID for the message. For the Resource Availability messages, the value in this field will reflect the use of the Unsolicited Result Message ORU^R01'.
9.1	3	ID	R			Message Code	Literal value: 'ORU'.
9.2	3	ID	R			Trigger Event	Literal value: 'R01'.
9.3	7	ID	R			Message Structure	Literal value: 'ORU_R01'.
10	20	ST	R			Message Control ID	String that uniquely identifies the message instance from the sending application.
11	3	PT	R			Processing ID	Field that indicates the intent for processing the message, such as "Testing," "Development," or "Production."
11.1	1	ID	R			Processing ID	
11.2	1	ID	O			Processing Mode	Processing mode is understood to be "Current," if not explicitly sent in the message.
12	5	VID	R			Version ID	HL7 version number used to interpret format and content of the message.
12.1	5	ID	R			Version ID	Literal value: '2.5'.
15		ID	X			Accept Acknowledgment Type	In or out?
16		ID	X	[0..0]		Application Acknowledgment Type	In or out?
21	411	EI	O			Message Profile Identifier	Field used to reference or assert adherence to a message profile. Message profiles contain detailed explanations of grammar, syntax, and usage for a particular message or set of messages.
21.1	199	ST	O			Entity Identifier	

MESSAGE HEADER SEGMENT (MSH)							
SEQ	LEN	DT	OPT	RPT/#	TBL #	HL7 Element Name	Description/Comments
21.2	4	IS	O			Namespace ID	
21.3	199	ST	O			Universal ID	
21.4	6	ID	O			Universal ID Type	

Table 4.2.3.2-2 Message Header Segment

PID – Patient Identification Segment

The following table portrays the PID segment constrained to capture the patient demographic elements in the AHIC minimum data set.

Patient Identification SEGMENT (PID)							
SEQ	LEN	DT	OPT	RPT/#	TBL #	HL7 Element Name	Description/ Comments
1	4	SI	O			Set ID - PID	Only one patient/one PID segment per message is supported for this interface. The field null or it may contain a '1'.
3	250	CX	R			Patient Identifier List	This may be a pseudonymized identifier.
3.1	15	ST	R			ID Number	Please check LEN fields
3.2	1	ST	X			Check Digit	
3.3	3	ID	X			Check Digit Scheme	
3.4	227	HD	R			Assigning Authority	
3.4.1	20	IS	O			Namespace ID	
3.4.2	199	ST	R			Universal ID	
3.4.3	6	ID	R			Universal ID Type	
5						Patient Name	Patient names are not passed as part of the BIO minimum data set.
.1						Family Name	
5.1.1	50	ST	C			Surname	Required field for the PID segment, containing the literal value |""| for patient de-identification purposes. Any other value in this field should be considered an error.
7	26	TS	O			Date/Time of Birth	Patient's birth date in YYYYMM format. Only the year and month will be passed in this field.
8	1	IS	O	0001		Administrative Sex	Patient's sex.
11	250	XAD	O			Patient Address	Residence address of the patient. For de-identification purposes, only the state and zip code components are passed.
11.4	50	ST	O			State or Province	
11.5	12	ST	O			Zip or Postal Code	

Table 4.2.3.2-3 Patient Identification Segment (PID)

OBR – Observation Request Segment

In the reporting of clinical data, the OBR serves as the report header. It identifies the observation set represented by the following atomic observations. It includes the relevant ordering information when that applies. It contains many of the attributes that usually apply to all of the included observations.

OBSERVATION REQUEST SEGMENT (OBR)							
SEQ	LEN	DT	OPT	RPT/#	TBL #	HL7 Element Name	Description/ Comments
1	4	SI	O			Set ID - OBR	
2	22	EI	R			Placer Order Number	The Standard describes this field as required for the result message when the ORC segment is not present. Literal Value: “”
3	22	EI	R			Filler Order Number	The Standard describes this field as required for the result message when the ORC segment is not present. Literal Value: “”
4	250	CE	R			Universal Service Identifier	Will be assigning a universal identifier to use as a report identifier. May need one for the Daily Facility Summary Report and one for the Dynamic Resource Availability Report.
7	26	TS	R			Observation Date/Time	Relevant date/time for the information contained on the report.
22	26	TS	R			Results Rpt/Status Chng - Date/Time	This field is used to indicate the date and time that the results are composed into a report and released, or that a status, as defined in *ORC-5-order status*, is entered or changed. This timestamp will update when a report is corrected or an addendum is added.
25	1	ID	R		0123	Result Status	This field is required whenever the OBR is contained in a report message. Literal Value: ‘F’.

Table 4.2.3.2-3 Observation Request Segment (OBR)

OBX – Observation Result Segment

The Observation Result Segment (OBX) is used to convey observations in both ADT and result messages.

OBSERVATION/RESULT SEGMENT (OBX)							
SEQ	LEN	DT	OPT	RPT/#	TBL #	HL7 Element Name	Description/ Comments
1	4	SI	O			Set ID – OBX	Field that contains the sequence number of the OBX, which increments up by one for each observation segment in the group.

OBSERVATION/RESULT SEGMENT (OBX)							
SEQ	LEN	DT	OPT	RPT/#	TBL #	HL7 Element Name	Description/ Comments
2	2	ID	C		0125	Value Type	Format of the observation value expressed in OBX-5. The expected value types for this message are ST, TX or CE. See breakdown for each data type in OBX-5 below.
3	250	CE	R			Observation Identifier	Observations that may be captured with this component are assigned a LOINC code that is used to identify the observation being passed.
3.1	20	ST	R			Identifier	LOINC code.
3.2	199	ST	R			Text	LOINC Description.
3.3	20	ID	R			Name of Coding System	LOINC Code system identifier
3.4	20	ST	O			Alternate Identifier	Local Code.
3.5	199	ST	O			Alternate Text	Local Description.
3.6	20	ID	O			Name of Coding System	Local Coding System.
4	20	ST	C			Observation Sub-ID	Observation sub-id is used to group multiple OBX segments with the same OBX-3 value. These groupings are especially important for text results such as radiology reports.
5	999991	varies	C	Y2		Observation Value	The length and format of the Observation Value changes depending on the value in OBX-2 Value Type.
BREAKDOWN FOR ST (STRING) DATATYPE							
5.1	199	ST	R			String Data	String data is left-justified with trailing blanks optional. It may be any displayable (printable) ACSII characters (hexadecimal values between 20 and 7E, inclusive, or ASCII decimal values between 32 and 126), except the defined escape characters and defined delimiter characters.
BREAKDOWN FOR TX (TEXT) DATATYPE							
5.1	no limit	TX	R			Text Data	String data meant for user display (on a terminal or printer). Such data would not necessarily be left-justified, since leading spaces may contribute greatly to the clarity of the presentation to the user. Because this type of data is intended for display, it may contain certain escape character sequences designed to control the display. Escape sequence formatting is defined in Section 2.7 of the *HL7 2.5 Standard Use of Escape Sequences in Text Fields*. Leading spaces should be included. Trailing spaces should be removed.

OBSERVATION/RESULT SEGMENT (OBX)							
SEQ	LEN	DT	OPT	RPT/#	TBL #	HL7 Element Name	Description/ Comments
11	1	ID	R		0085	Observation Result Status	For purposes of this interface, literal value 'F' may be used to meet the mandatory use of this field.
14	26	TS	O			Date/Time of the Observation	Date/time the observation identified in OBX-3 was performed.

Table 4.2.3.2-4 Observation/Result Segment (OBX)

4.2.4 ADDITIONAL SPECIFICATIONS

Sample Message Instances

This message indicates that the Radiology result was loaded into one section, since the results are not discrete.

MSH|^~\&|RAD|^SendingFacility||^ReceivingFacility|200609011912133||ORU^R01^ORU_R01|200
6091018321330035|D|2.5<CR>
PID|1||BioID^^^&BioIDAssignAuth||""||196712|M|||^^^OR^97005<CR>
OBR|1||XR312739^|^^^CXR^Chest X-Ray^L||||||||||||||||||RAD|F||||||786.51^PRECORDIAL
PAIN^2.16.840.1.113883.6.103~786.7^ABNORMAL CHEST
SOUNDS^2.16.840.1.113883.6.103~786.05^SHORTNESS OF
BREATH^2.16.840.1.113883.6.103|||||||||||71020^Chest X-
ray^2.16.840.1.113883.6.12<CR>
OBX|1|TX|18782-3^XR STUDY OBSERVATION^2.16.840.1.113883.6.1|1|A chest X-Ray, AP and Lateral, was done as a portable in ED. The patient is short of breath and has had a fever for several days. There are upper respiratory symptoms, nasopharyngitis, and wheezing.<CR>
OBX|2|TX|18782-3^XR STUDY OBSERVATION^2.16.840.1.113883.6.1|1|The film shows disseminated left lower lobe infiltrates consistent with pneumonia. <CR>
OBX|3|TX|18782-3^XR STUDY OBSERVATION^2.16.840.1.113883.6.1|1|Would recommend a chest CT to further clarify findings. <CR>
OBX|4|TX|18782-3^XR STUDY OBSERVATION^2.16.840.1.113883.6.1|1|/mam 10/20/2005<CR>

This message indicates that the Radiology Result was reported in more discrete sections that allowed the text to be broken into more typical, dictated report sections: "Observations," "Impressions," "Recommendations."

MSH|^~\&|RAD|^SendingFacility||^ReceivingFacility|200609011912133||ORU^R01^ORU_R01|200
6091018321330035|D|2.5<CR>
PID|1||BioID^^^&BioIDAssignAuth||""||196712|M|||^^^OR^97005<CR>
OBR|1||XR312739|^^^CXR^Chest X-Ray^L||||||||||||||||||RAD|F||||||786.51^PRECORDIAL
PAIN^2.16.840.1.113883.6.103~786.7^ABNORMAL CHEST
SOUNDS^2.16.840.1.113883.6.103~786.05^SHORTNESS OF

BREATH^2.16.840.1.113883.6.103|||||||||||71020^Chest X-ray^2.16.840.1.113883.6.12<CR>

OBX|1|TX|18782-3^XR STUDY OBSERVATION^LN|1|A chest X-Ray, AP and Lateral, was done as a portable in ED. The patient is short of breath and has had a fever for several days. There are upper respiratory symptoms, nasopharyngitis, and wheezing.<CR>

OBX|2|TX|19005-8^XR IMPRESSION^LN||The film shows disseminated left lower lobe infiltrates consistent with pneumonia. <CR>

OBX|3|TX|18783-1^RADIOLOGY STUDY RECOMMENDATION^LN||Would recommend a chest CT to further clarify findings. <CR>

5.0 CONSTRAINTS FOR REUSE

Not applicable.

6.0 APPENDIX

6.1 GLOSSARY

Included is the common interoperability glossary that is used for all the Use Cases. This is the HITSP glossary that spans all the interoperability specifications, which can be found in the following folder on the HITSP site:
http://publicaa.ansi.org/sites/apdl/Documents/Forms/AllItems.aspx?RootFolder=http%3a%2f%2fpublicaa%2eansi%2eorg%2fsites%2fapdl%2fDocuments%2fStandards%20Activities%2fHealthcare%20Informatics%20Technology%20Standards%20Panel

6.2 AHIC MINIMUM DATA SET CROSS-REFERENCE

6.2.1 CROSS-REFERENCE TABLE KEY

DATA ELEMENTS CROSS REFERENCE	
Data Element	Definition
Data Element	Data element name/identifier.
Description	Biosurveillance data element description.
Source	Source of the data element – where the data was created
Destination	Destination of the data element – where it is going to be used
Limit/Range / Vocabulary	Expected data values if data element has finite values Pre-coordinated vocabulary value set name or coding system from which values may be drawn
HL7 Context	Segment and field where the data element appears in the HL7 message and other context as required.
HL7 Data Type	HL7 data type for the data element – indicates format and processing requirements.
Conditions for Use	Describe all the prevailing conditions that are assumed to be in place to be able to use the data. State the need for a particular actor if one is involved.

295 Table 6.2.1-1 Cross-Reference Table Key

6.2.2 RADIOLOGY RESULTS

The AHIC Biosurveillance Data Minimum and Target Data Elements are used by this component are cross-referenced below to the HL7 context in which the element would be expressed in the messages being sent.

RADIOLOGY RESULT MINIMUM DATA SET						
Data Element	Description	Source	Limit/Range/ Vocabulary	Destination/ HL7 Context	Data Type	Conditions for Use
Study ID/Radiology Number	This is a unique identifier for the radiological study, so that we can link report revisions with the original report. This should be a composite of the accession numbers from the institution and the institution ID.	Radiology system assigned		OBR-3 Filler Order Number	EI	Required in each message.
Pseudonymized Patient ID /Randomized Data Linker	A pseudonym Patient ID is created to uniquely distinguish a patient across all visits to a single institution, or across all visits to a healthcare system when a common patient identification system is used. The Biosurveillance Patient ID does not contain personally identifiable information. It is used by the healthcare facility to associate Biosurveillance patient data to the patient's medical record.	PID-3 Patient ID/MRN used to create the randomized linker patient ID		PID-3 Patient Identifier List.	CX	Required in every message
Date of Birth	Patient's year and month of birth (day is not included for privacy purposes)	Most ADT carry the date of birth in PID-7		PID-7 Date of Birth in YYYYMM format	TS	
Sex	Patient sex	Most ADT messages carry Sex in PID-8	Administrative Gender_HL7_ 2.5	PID-8 Administrative Sex	IS	
Zip code	Patient residence zip code			PID-11 Patient Address Component 5 Zip or Postal Code	String com-ponent of XAD data type	
State	Patient residence – state		State_FIPS_5-2, 2-character alpha	PID-11 Patient Address Component 4 State or Province	String com-ponent of XAD data type	
Study date and time	Date / time the exam was performed.			OBR-7 Observation Date/Time	TS	
Report date/time	Report/Reading Date.			OBR-22 Results/Rpt Status Chg Dt/time	TS	

RADIOLOGY RESULT MINIMUM DATA SET						
Data Element	Description	Source	Limit/Range/ Vocabulary	Destination/ HL7 Context	Data Type	Conditions for Use
Report Status	A flag indicating if this is a revised report with code referencing the study ID. Status of the report (preliminary, final, corrected) is required in a result message.		PHVS_Result Status_HL7_2 x	OBR-25 Results/Report Status	ID	
Test Performed	Radiology test code/description.		CPT+ Textual Description which can include modification	OBR-4 Universal Service ID	CE	
Impressions	Radiologist's diagnosis and impressions.		SNOMED CT Or ICD9-CM	OBX-2=TX OBX-3 19005-8^ X-RAY IMPRESSION^LN OBX-5=Impressions text	CE, TX	
Date / Time Revised	Date and time of the report revision			OBR-22 Result/Report Status Change Date/time	TS	

300 Table 6.2.2-1 Radiology Result Minimum Data Set