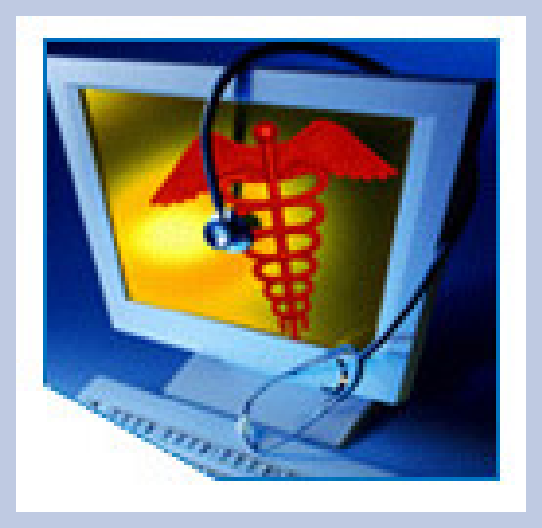
May 11, 2007
Version 2.0

HITSP Radiology Result Message Component

HITSP/C41



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2.0	Released for Implementation	Population Health Technical Committee	May 11, 2007

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FIGURES AND TABLES

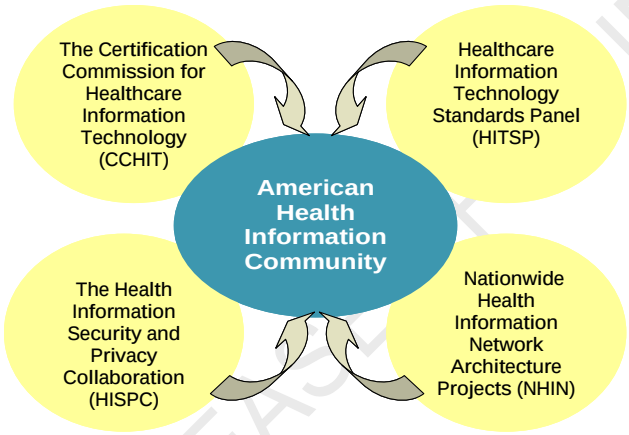
1.0 FOREWORD

This document is referred to as a Component and is an artifact of the Healthcare Information Technology Standards Panel (HITSP).

The following paragraphs provide background information about the HITSP and its role in the overall U.S. efforts to realize large scale interoperability of health information. It also describes the HITSP process for healthcare standards harmonization and explains how to use this document and other related documents to inform your health IT product development or product refinement. If you are familiar with HITSP and HITSP artifacts, please proceed to Section 2.0.

U.S. Nationwide Health Information Interoperability

Studies published by the Institute of Medicine and others have raised awareness of the extent to which the fragmented nature of clinical information adversely impacts the quality of care across the U.S. Health Information Technology (IT) can be used to enable better integration of clinical information. However, as of 2007, only a small number of U.S. healthcare providers have fully adopted health IT due, in part, to technical barriers associated with a lack of unambiguous and nationally recognized interoperability standards.



The American Health Information Community[1] (AHIC), a 2005 federally-chartered commission made up of leaders from public and private health sectors, was formed to provide recommendations on how to make health records digital and interoperable, and assure that the privacy and security of those records are protected, in a smooth, market-led way. At the same time, The Department of Health and Human Services, through the Office of the National Coordinator for Health IT (ONC) awarded contracts to 1) identify Interoperability Standards to facilitate the exchange of patient data (HITSP), 2) define a process for certifying that health IT products comply with appropriate standards through the Certification Commission for Healthcare Information Technology (CCHIT), and 3) develop a series of prototypes to establish the requirements of a Nationwide Health Information Network (NHIN). Under a renewed second year contract, HITSP scheduled activities will include identifying and constraining the standards needed for a standards-based security framework that provides the mechanisms needed to protect patient privacy and maintain confidentiality of information about the patient, as well as further work in additional Use Case priority areas recommended by AHIC. This year, CCHIT is expanding its certification efforts to inpatient, or hospital, electronic health record products. In

[1] http://www.hhs.gov/healthit/ahic.html

January 2007, four NHIN prototypes were delivered based on the requirements for health information exchange. The next phase will be to connect the prototypes and state and regional health information exchange efforts in trial implementations. These activities share the goal of widespread adoption of interoperable electronic health records within 10 years through public-private collaboration.

HITSP's Role within Nationwide Interoperability Efforts

The HITSP[2] 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. As used by HITSP, the term "standard" refers, but is not limited to Specifications, Implementation Guides, Code Sets, Terminologies, and Integration Profiles. A standard should be produced through a well defined approach that supports a business process and

1. has been agreed upon by a group of experts
2. has been publicly vetted
3. provides rules, guidelines, or characteristics
4. helps to ensure that materials, products, processes, and services are fit for their intended purpose
5. is available in an accessible format
6. is subject to an ongoing review and revision process

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 information to ensure that the resulting standards are globally relevant
- Be Use Case driven, using information from stakeholders and basing decisions on industry needs

The work of the HITSP is conducted through formally chartered Technical Committees and Work Groups. The artifact of the Technical Committee and Work Group activities is an Interoperability Specification (IS) and related constructs referred to as Transaction Packages, Transactions, or Components. For additional information on these constructs, please refer to the HITSP Harmonization Framework.

This HITSP document pertains to the Interoperability Specification for the following:

[2] www.hitsp.org

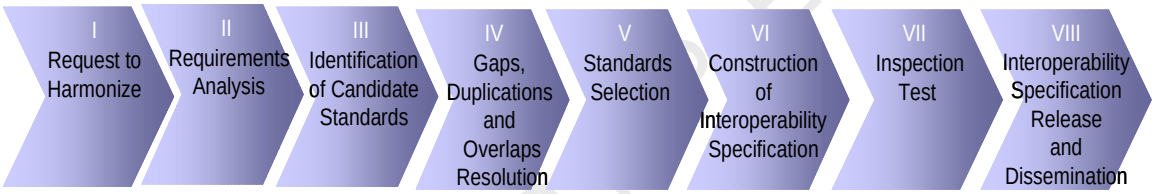
Use Case	Specific Scope of this Use Case
Biosurveillance	Transmit essential ambulatory care and emergency department visit, utilization, and laboratory result data from electronically enabled healthcare delivery and public health systems in standardized and anonymized format to authorized Public Health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

In its final state, this Interoperability Specification provides unambiguous instructions for how two or more systems should exchange information within this specific context of the Use Case.

How Use Cases and HITSP Interoperability Specifications are Developed

The American Health Information Community, as the representative of public and private health sector stakeholders, identified the three Use Cases (available at hitsp.org) that drove the initial efforts of the HITSP. Nationwide public and private health sector priorities continue to focus the efforts of the HITSP. The Use Case driven HITSP harmonization process is implemented by formally chartered Technical Committees. The volunteers that comprise a Technical Committee followed an 8 step process, depicted below.

Figure 1.0-1 HITSP Harmonization Process Steps



How to Read this Interoperability Specification

Each Interoperability Specification (IS) is actually a suite of documents that, taken as a whole, provide a detailed map to existing standards and specifications that will satisfy the requirements imposed by a given Use Case. 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. This Interoperability Specification includes the Transaction Packages, Transactions, and Components.

2.0 INTRODUCTION

As an introduction to the Radiology Result Message Component, this section provides a high level overview of an information sharing scenario enabled by following this specification, outlines the technical scope of the specification, describes the intended audience for the technical content of the document, acknowledges the copyright protections that pertain, provides Internet links to the HITSP Acronyms List and an explanation of the conventions used to convey the full descriptions and usage of standards. If you are already familiar with this information, proceed to Section 3.0.

2.1 OVERVIEW

This Component supports the process of sending radiology result data from a Biosurveillance Message Sender to a Biosurveillance Message Receiver. Radiology result data are captured as part of the normal process of care performed by healthcare providers.

2.2 TECHNICAL ASSUMPTIONS AND SCOPE

This Interoperability Specification focuses on a set of constrained standards for information interchange that address the core requirements of the Use Case described above. It may 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. The following paragraphs provide the HITSP principles with regard to several critical topics to ensure consistent interpretation of the Interoperability Specifications.

2.2.1 INTEROPERABILITY SPECIFICATIONS NOT FUNCTIONAL SPECIFICATIONS

The HITSP Interoperability Specification defines how two or more systems exchange standard data content in a standardized manner. Interoperability Specifications define the necessary business and technical actors, the transactions between them including the message, content and terminology standards for the actual information exchange. Interoperability Specifications do not specify the functional requirements or behaviors of the systems or applications.

2.2.2 ARCHITECTURAL NEUTRALITY

HITSP Interoperability Specifications, unless otherwise noted, are not intended to define or prescribe any system architecture or implementation. At the most basic level, the Interoperability Specifications define specific information exchange standards that are to be used by any two systems. Information exchange must be placed within the context of a transaction between defined technical actors which fulfill higher level business requirements derived from the Use Case. In some cases the necessary technical actors may require some architectural structure or make some assumptions involving synchronous or

asynchronous data exchanges, or require specific type of exchange, such as a message or document. These requirements may constrain to some degree the total range of choices regarding system architectures. When constraints are necessary to meet the Use Case requirements, the Interoperability Specification will note this and will retain as much architectural neutrality as possible. When appropriate, the Interoperability Specifications may provide architectural examples and discuss considerations of such examples.

2.2.3 THE USE OF MESSAGES AND DOCUMENTS AS APPROPRIATE

Within healthcare information there is an ongoing debate concerning the proper role of messages and documents as methods of exchanging data. Messages are typically non-persistent encapsulations of highly structured data that require external context. Documents are persistent encapsulations of both data and context which may be authenticated to insure non-repudiation. Persistence as defined by Health Level Seven (HL7), means that a clinical document continues to exist in an unaltered state for a time period defined by local and regulatory requirements. Non-repudiation, as defined by ISO adapted from ASTM E31, means a service that provides proof of the integrity and origin of data, which can be verified by any party. HITSP recognizes that requirements for both messages and documents exist and where consistent with harmonization will support both. For example, depending on specific phases of the workflow, a laboratory result might be exchanged as a message, as a document, or both. Business requirements may define which format is more effective.

2.2.4 IMPLEMENTATION TESTING

The 2006 set of Interoperability Specifications were evaluated by inspection testers (desktop review) and reviewed by HITSP members prior to HITSP approval. Although the Interoperability Specifications are based on approved standards, when published, they represent combinations and constraints that have not been tested in actual implementations. HITSP enlisted partners to develop test plans, data and suites to test the implementation and then to support a program for progressive testing, feedback and deployment of implementations. Feedback from test implementers has been used in the revisions in Version 2.0.

2.2.5 SECURITY AND PRIVACY

The Health Insurance Portability and Accountability Act (HIPAA) and its Administrative Simplification sections establish the minimum federal requirements for security and privacy of individually identifiable health information (IIHI). HIPAA requires that “covered entities” establish and maintain secure systems that protect IIHI from unauthorized disclosures while ensuring its availability for authorized uses. Most providers, health plans and intermediaries, and by contract their business associates, are covered by HIPAA regulation. However, HIPAA does not cover personal health records unless they are held by a covered entity, nor an individual’s use of their own health information.

Currently, HITSP is charged by ONC to harmonize standards based on Use Cases derived from AHIC requirements and priorities. Implicitly and in some cases explicitly, the Use Cases require a secure

infrastructure and certain security or privacy functions. Because of time and resource constraints and the need for further information as described below, HITSP has decided to defer specifying most security requirements, instead treating these as a pre-condition for implementing the core information exchanges. The underlying premise is that HITSP**,** based upon prioritization by AHIC and ONC, will in the future identify and constrain the standards needed for a standards-based security framework that provides the mechanisms needed to protect patient privacy and maintain confidentiality of information about the patient. This standards-based security framework will need to accommodate federal, state, local, and healthcare enterprise security and privacy policies and processes. Exceptions to the deferred requirements that are addressed in this first release are secure web-based messaging, pseudonymization and anonymization.

There is a special case for the Consumer Empowerment (CE) Use Case. In the first year of HITSP's work, the Consumer Empowerment TC is to provide an Interoperability Specification for sharing of demographic data, medication lists, and allergies *based on patient consent*. Patient consent is clearly within the scope of the CE Use Case. However, HITSP requires further guidance on patient consent, particularly since patient consent is not addressed by HIPAA in the case of a personal health record (PHR) nor is it established within widely accepted PHR standards. Therefore HITSP identifies patient consent as a necessary pre-condition for successful implementation of a PHR that contains personal demographic data and medication histories. Patient consent will be documented as a pre-condition in the CE Interoperability Specification. Work on patient consent has been deferred until the second year of HITSP work.

2.3 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.

2.4 COPYRIGHT PERMISSIONS

the U.K. Department of Health and is a crown copyright. SNOMED is a registered trademark of the College of American Pathologists.

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2.5 ACRONYMS

The acronyms used in this document are contained in the HITSP Acronyms List.

2.6 CONVENTIONS

The conventions are used to convey the full descriptions and usage of standards in the Interoperability Specification and are contained the HITSP Conventions List.

3.0 REFERENCED STANDARDS

It is HITSP's policy to incorporate only standards that have been approved according to the formal policy of standards organization, as defined by HITSP, which publishes the standard. HITSP interprets approval to include Draft Standards for Trial Use. The objective is to incorporate only standards that are managed within a formal life cycle process as defined by the standards organization. In some cases, where we believe a standard that is not yet approved may best meet the requirements of an Interoperability Specification, HITSP may provide a roadmap of its future intent conditional on future actions by either or both the standards organizations and the HITSP Technical Committee. Thus there are four classes of HITSP-committed standards.

- Approved for Use – standards included for unconditional use within a HITSP construct
- Interim – standards included for use now within a HITSP construct but for a defined time period or conditional on future actions, e.g., "Intended for Use" standard is available
- Provisional - standards that are not yet but are expected to be approved by the Standards Organization by the time the Interoperability Specification is released by HITSP. A "Provisional" standard becomes an "Approved for Use" standard only if:
  - It is approved by the Standards Organization by the time that the Interoperability Specification is released by HITSP and
  - It is substantially the same as it was when it was provisionally used and
  - It requires no further action by the Technical Committee
- Intended for Use – proposed standards that are roadmapped for future use pending actions by the TC and/or the standards organization. Therefore a standard is defined as "Intended for Use" because it will not be approved by the time that the HITSP construct is released but is sufficiently defined to enable detailed evaluation of how well it will meet technical and business requirements

HITSP may continue to use "Provisional" or "Interim" standards as they existed when incorporated into the HITSP construct if the expected conditions are not satisfied until such time as HITSP can replace it with a more suitable standard. In this circumstance, the Standards Organization would have no responsibility to maintain or correct this artifact. If a standard "Intended for Use" is not developed and approved in terms of time frame or content as expected by the TC at the time of its initial selection, it may be replaced. All standards used by HITSP must meet the HITSP selection criteria. The use of "Interim" and "Intended for Use" standards will be weighed against the alternative of simply declaring a gap for HITSP and the Standards Organizations to resolve.

The Population Health Technical Committee has focused its work around an analysis of the Biosurveillance Use Case provided by the American Health Information Community (AHIC). This work has also been informed by the proceedings of the AHIC Biosurveillance Data Steering Group (BDSG).

The Population Health TC has selected standards first in accordance with HITSP Tier 1 and Tier 2 criteria. The TC worked with USHIK to evaluate the metadata and repository for use in standards selection using demographic and encounter data as a test case. Note that the United States Health Information Knowledgebase (USHIK) provides and maintains a metadata registry of health information data element definitions, values, and information models (www.ushik.org).The results and the resource will be used to extend this Interoperability Specification to additional domains and clinical data information exchange standards.

This TC has selected standards with more options than might otherwise be defined between communication partners. As Biosurveillance is based upon secondary use of clinical data, the processes and data capture options are somewhat opportunistic, and associated data mining processes have more latitude in translation and data preparation processes. Since it is important to maximize the data sources to contribute data to the biosurveillance information system, information exchange selections include options for data capture from both legacy environments and emerging environments. Vocabulary, message, and content standards have been selected in consideration of providing the most comprehensive, machine processable fulfillment of the data requirements provided by the AHIC BDSG.

3.1 LIST OF STANDARDS

It is important to understand that the standards selected here are within the context of the specific Use Case requirements and do not necessarily reflect selection in other contexts. The following standards are used to implement this Interoperability Specification:

Table 3.1-1 List of Standards

Standard	Description
American Medical Association (AMA) Current Procedural Terminology (CPT®) Fourth Edition (CPT-4)	A uniform coding system used primarily to identify medical services and procedures furnished by physicians and other healthcare professionals. Visit www.ama-assn.org for more information.
College of American Pathologists Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT®)	SNOMED CT consists of a technical design, core content architecture, and Core content. SNOMED CT Core content includes the technical specification of SNOMED CT and fully integrated multi-specialty clinical content. The Core content also includes a concepts table, description table, relationships table, history table, ICD-9-CM mapping, and Technical Reference Guide. Additionally, SNOMED CT provides a framework to manage language dialects, clinically relevant subsets, qualifiers and extensions, as well as concepts and terms unique to particular organizations or localities. Visit www.snomed.org for more information.

Standard	Description
Federal Information Processing Standards (FIPS) Codes for the Identification of the States, the District of Columbia and the Outlying Areas of the United States, and Associated Areas Publication # 5-2, May, 1987	A set of two-digit numeric codes and a set of two-letter alphabetic codes for representing the 50 states, the District of Columbia and the outlying areas of the United States, and associated areas. The standard covers all land areas under the sovereignty of the United States, the freely associated states of Federated States of Micronesia and Marshall Islands, and the trust territory of Palau. Visit www.itl.nist.gov for more information. NOTE: ASC X12 transactions and ASC X12N Implementation Guides do not allow use of this standard; instead they require use of the U.S. Postal Service's National Zip Code and Post Office Directory -- which provides similar alphabetic code values.
Health Level Seven (HL7) Version 2.5[3]	The HL7 Version 2.5 Messaging Standard is an application protocol for electronic data exchange in healthcare. It and prior versions have widespread use in the U.S. and internationally. Both message formats and value sets / code tables (e.g., diagnosis type, gender, patient class, result status, specimen collection method, abnormal flags, observation result status codes interpretation, timestamp format) are contained in the standard. Of particular focus for HITSP Interoperability Specifications are message formats described in Chapters 2, 3, 5, and 7 including patient demographic (ADT) and lab result reporting. These are also used within composite standards from IHE for Patient Identity Cross-Referencing and Feed (PIX), Patient Demographics Query (PDQ), and Acknowledgements. Visit www.hl7.org for more information.
International Classification of Diseases, 9th Revision, Clinical Modifications (ICD-9-CM)	The International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM), Volumes I, II (diagnoses) and III (procedures) describes the classification of morbidity information for statistical purposes and for the indexing of healthcare records by diseases and procedures. Visit www.cdc.gov/nchs for more information.
International Classification of Diseases, 10th Revision, Procedure Coding System (ICD-10-PCS)	The International Classification of Diseases, 10th Revision, Procedure Coding System (ICD-10-PCS), describes the classification of inpatient procedures for statistical purposes and for the indexing of healthcare records by procedures. ICD-10-PCS is a procedural coding system managed by the Centers for Medicare and Medicaid Services (CMS). Visit www.cms.hhs.gov for more information.
International Classification of Diseases, 10th Revision, Related Health Problems (ICD-10-CM)	The International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM), describes the classification of morbidity information for statistical purposes and for the indexing of healthcare records by diseases. The National Center for Health Statistics (NCHS), the Federal agency responsible for use of the International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10) in the United States, developed a clinical modification of the classification for morbidity purposes. Visit www.cdc.gov/nchs for more information.

[3] HITSP references HL7 2.5.1 messaging for lab results reporting, and HL7 2.5 for other messages. Future maintenance work will move toward referencing a single HL7 version across HITSP documents.

Standard	Description
Unified Code for Units of Measure (UCUM)	A code system intended to include all units of measures being contemporarily used in international science, engineering, and business. The purpose is to facilitate unambiguous electronic communication of quantities together with their units. The focus is on electronic communication, as opposed to communication between humans. Visit aurora.regenstrief.org for more information.

4.0 COMPONENTS

4.1 CONTEXT OVERVIEW

4.1.1 CONTEXTUAL CONSTRAINTS

Not Applicable

4.1.2 TECHNICAL ACTORS

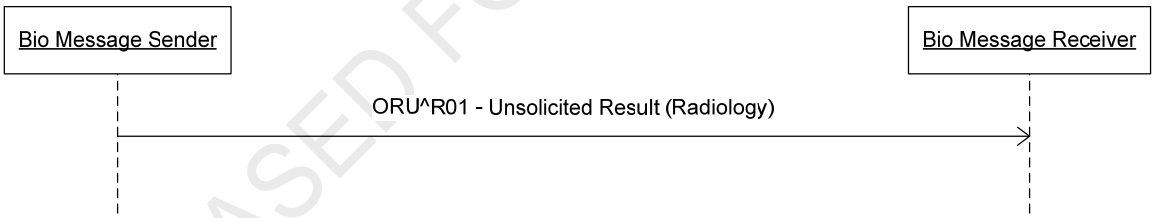
Table 4.1.2-1 Technical Actors

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

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 are constrained to the AHIC defined Biosurveillance data set (see section 4.2.3.1 Minimum Data Set) and codified with the appropriate terminology.

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 pseudonymized.

4.2.3 DATA STRUCTURE

The Radiology Results Biosurveillance data are 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.

Table 4.2.3-1 ORU^R01 Unsolicited Result Message Format

ORU^R01 Unsolicited Result Message Format	
ORU^R01^ORU_R01	Unsolicited Observation Message
MSH	Message Header
{	--- 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

ORU^R01 Unsolicited Result Message Format	
ORU^R01^ORU_R01	Unsolicited Observation Message
}]	--- SPECIMEN end
}	--- ORDER_OBSERVATION end
}	--- PATIENT_RESULT end

4.3 AHIC MINIMUM DATA SET CROSS-REFERENCE

4.3.1 CROSS-REFERENCE TABLE KEY

Table 4.3.1-1 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 were 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.

4.3.2 RADIOLOGY RESULTS

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

Table 4.3.2-1 Radiology Result Minimum Data Set

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	HL7 2.5 Administrative Sex Codes	PID-8 Administrative Sex	IS	
Zip code	Patient residence zip code			PID-11 Patient Address Component 5 Zip or Postal Code	String component of XAD data type	
State	Patient residence – state		FIPS Alpha State Codes	PID-11 Patient Address Component 4 State or Province	String component 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	
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.		HL7 2.5 Result Status Codes	OBR-25 Results/Report Status	ID	

RADIOLOGY RESULT MINIMUM DATA SET						
Data Element	Description	Source	Limit/Range/ Vocabulary	Destination/ HL7 Context	Data Type	Conditions for Use
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	

4.3.2.1 DATA MAPPING

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.
This document uses the following table convention to describe HL7 messages and their segments and data elements used.

Table 4.3.2.1-1 HL7 Table Convention

Name of structure being documented, e.g., HL7 Patient Identification SEGMENT							
SEQ	LEN	DT	OPT	RPT	TBL	Data Element Name	Description/Comments
	Where expanded descriptions / comments are needed, they will be placed in an additional multi-line row inserted immediately following each applicable data element. Otherwise, this extra row will not be present.						

Table/Column Notes:

a) HL7 messages and the table only contain data elements (i.e., segments, fields, components, and sub-components) from HL7 version 2.5 that are actually to be populated in a message. This applies even when messages have segments, fields, components, and sub-components that are not consecutive segments, fields, components, or sub-components
b) A field which is not just a simple data element (i.e., the field contains a sub-structure of components) is always shown along with the component(s) that are to be populated in the message
c) A component which is not just a simple data element (i.e., the component contains a sub-structure of sub-components) is always shown along with the sub-components that are to be populated in the message

d) SEQ column – the HL7 segment's field number, and, where applicable, component and sub-component numbers as decimals; e.g., the data element SEQ number for the Universal Service ID of the Assigning Authority of Patient Identifier List in a PID Segment is shown as 3.4.2
e) LEN column – value directly copied from HL7 standard segment table for completeness
f) DT column – value directly copied from HL7 standard segment table for completeness
g) OPT column – for fields and components that are displayed solely to show structure of the field, value copied directly from HL7 standard segment table. For fields, components, and sub-components that indicate actual data values to be populated in the message, one of the following codes:
    R -- Required; i.e., must always be populated in message
    RE -- Required if data are available in sending system
    O -- Optional; i.e., may be populated solely at discretion of sending system
    C -- Conditional; i.e., depends on a Boolean statement that is contained in Description / Comments
h) RPT column – Y only if field repeats; components and sub-components only repeat within the context of a repeating field
i) TBL column – the relevant HL7 Table from which data element values are populated. If data element is from a source other than an HL7 table, the applicable Code Domain is entered in Descriptions / Comments
j) Data Element Name column – the HL7 standard name plus any other generally accepted short industry name useful in understanding the data to be populated for the data element
k) Description / Comments column – any otherwise not already included information about the following attributes is included in the description/comments section, e.g.:
    - Source – where data element is obtained; particularly if Source is not the sending system
    - Rationale – where used for cases / situations that aren't part of the norm
    - Code Domain – typically, where code domain is not an HL7 table

MSH – Message Header Segment

Use of the MSH segment is described in the Message Control portion of IHE-ITI TF-2 §C.1 along with IHE-ITI TF-2 Table C.1-1. Use of the MSH segment is described in IHE-ITI TF-2 §3.21.4.1.2.1. Further descriptions of MSH segment use are contained in the Message Control portion of IHE-ITI TF-2 §C.1 along with IHE-ITI TF-2 Table C.1-1. A HITSP Constraint on this usage is that data element MSH-5.1 must always be non-null valued.

PID – Patient Identification Segment

The following table portrays the PID segment constrained to capture the patient demographic elements in the AHIC minimum data set. Use of the PID segment is described in IHE-ITI TF-2 §§3.8.4.1.2.3. The table below shows only additional HITSP Biosurveillance constraints on this usage.

Table 4.3.2.1-2 HITSP Additional PID Segment Constraints

HL7 Segment - PID - Patient Identification							
SEQ	LEN	DT	OPT	RPT	TBL	Data Element Name	Description / Comments
1	4	SI	R			Set ID – PID	Only the number 1 may be used
3	250	CX	R	Y		Patient Identifier List	
3.1		ST	R			ID Number	Include all check digits and other qualifiers - used only for pseudonymization purposes.
3.4		HD	R			ID Number Assigning Authority	
3.4.2		ST	R			Assigning Authority's Universal ID	Shall only contain ISO Object Identifier (OID)
3.4.3		ID	R			Assigning Authority's Universal ID Type	Will always be 'ISO'.
7	26	TS	RE			Date/Time of Birth	Will strip off day of birth and send only YYYYMM.
8	1	IS	RE		0001	Administrative Sex	
11	250	XAD	O	Y		Patient Address	
11.1		SAD	O			Street Address	Not sent for Biosurveillance.
11.2		ST	O			Other Designation	Not sent for Biosurveillance.
11.3		ST	O			City	Though not required by HL7 standard, use of national postal service standardized values is strongly recommended
11.4		ST	O			State / Province	
11.5		ST	O			ZIP / Postal Code	
11.6		ST	O			Country	
	Though not required by HL7 standard, use of the International Standards Organization Codes for Representation of Names and Countries, ISO-3166, is strongly recommended; available from American National Standards Institute 25 West 43rd Street, Fourth Floor New York, NY 10036						

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.
The OBR - Observation Request Segment usage for results messages is described in the ANSI/HL7 V2.5-2003 Chapter 7, Observation Reporting. There are no additional HITSP Biosurveillance constraints on this segment.

OBX – Observation Result Segment

The OBX - Observation Result Segment is described in the ANSI/HL7 V2.5-2003 Chapter 7, Observation Reporting. There are no additional HITSP Biosurveillance constraints on this segment.

4.3.3 ADDITIONAL SPECIFICATIONS

None

5.0 CONSTRAINTS FOR REUSE

Not applicable.

6.0 CHANGE HISTORY

6.1 MAY 11, 2007

This document is now Released for Implementation.