Exploring the Expanded PHIN Messaging Guide for Syndromic Surveillance

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Sponsored by the ISDS Public Health Practice and Education and Training Committees

Upcoming Events

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July 2013 ISDS Events

Friday, July 12 – 12:00 PM – 1:00 PM EDT – Meaningful Use Community Call

Friday, July 12 – 1:00 PM – 2:00 PM EDT – Research Committee Meeting

Tuesday, July 16 – 1:00 PM – 2:00 PM EDT – ISDS BioSense User Community Call

Monday, July 22 – 2:30 PM – 3:30 PM EDT – ISDS Webinar: ICD-10 Transition Overview

Tuesday, July 30 – 10:30 AM – 12:00 PM EDT – ISDS Webinar: Syndromic surveillance in animal health: public, animal and food safety

Learn more at www.syndromic.org

CPH Credit Available

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If you are seeking Certified in Public Health (CPH) recertification credit for this webinar, please complete the evaluation form at the end of the webinar.

One credit is available for attending this webinar and completing the evaluation.

If you have any questions, please contact us at syndromic@syndromic.org.

Objectives

- To review the purpose and content of Release 1.9 of the PHIN Guide for Syndromic Surveillance
- To describe how users can use Release 1.9 to guide implementation in hospital and urgent care settings
- To show users how to navigate the Guide and find relevant information

Introduction to Release 1.9

PHIN MESSAGING GUIDE FOR SYNDROMIC SURVEILLANCE: EMERGENCY DEPARTMENT, URGENT CARE AND INPATIENT SETTINGS

What is Release 1.9?

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- An improvement over prior versions of the PHIN Messaging Guide; more clear and specific
- An extension of the ISDS Meaningful Use Workgroups' work on providing syndromic surveillance data from inpatient, ED, and urgent care settings
- An expansion of prior versions; supplies specifications for inpatient data in addition to emergency department and urgent care
- The future of Meaningful Use EHR certification for beyond the 2014 edition

Looking forward

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- This guide may be used for urgent care settings not associated with hospitals
- It is not, however….
  - A guidance for ambulatory clinical settings in general

- Specifications for laboratory information are not yet complete

Syndromic Surveillance

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A process that regularly and systematically uses health and health-related data in near "real-time" to make information available on the health of a community

Syndromic Surveillance information can be used for:

- Situational awareness;
- Emergency response management; and
- Outbreak recognition and characterization.

Guide's Purpose

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To provide:

1. An HL7 messaging and content reference standard for national, syndromic surveillance electronic health record technology certification;
2. A basis for local and state syndromic surveillance messaging implementation guides; and
3. A resource for planning for the increasing use of electronic health record technology and for providing details on health data elements that may become a part of future public health syndromic surveillance messaging requirements.

Guide's Assumptions

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This Guide makes the following assumptions:

- Infrastructure is in place to allow accurate and secure information exchange between sending and receiving systems;
- Privacy and security has been implemented at an appropriate level; and
- External business rules are documented locally.

How to use Release 1.9

PHIN MESSAGING GUIDE FOR SYNDROMIC SURVEILLANCE: EMERGENCY DEPARTMENT, URGENT CARE AND INPATIENT SETTINGS

Who will benefit?

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- **EHR vendors & Policy Makers**
  - Developing EHR technologies compatible with future syndromic surveillance requirements
  - Prior Release 1.1 set standards for 2014 Meaningful Use EHR certification; this Guide anticipates certification guidelines for beyond 2014
- **Public Health & Hospitals**
  - Meets evolving needs of PHAs as Meaningful Use progresses and more PHAs incorporate inpatient data into their syndromic surveillance systems
  - Provides guidance for local implementations of syndromic surveillance systems

Components of Release 1.9

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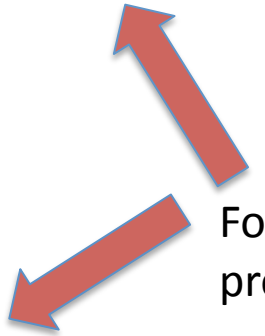
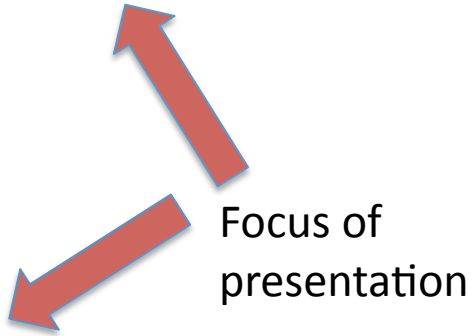
- Introduction
- Actors, Goals, and Messaging Transactions
- Messaging infrastructure
- Data type definitions
- Message segments by trigger event
- Appendix



Components

- Introduction
- Actors, Goals, and Messaging Transactions
- Messaging infrastructure
- Data type definitions
- Message segments by trigger event
- Appendix



Actors & Business Rules

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Actors

- Patient - A person with symptoms of a health problem that seeks treatment

- Senders of syndromic surveillance data include, but are not limited to: Hospitals, emergency departments, urgent care centers, and regional data centers for hospitals.

Business Rules

- ED, UC and Inpatient:
  - Data transmission every 24 hours
  - Batch processing optional
- ED/UC only
  - Face-to-face encounters only
  - Traceable information for PH
  - When updates occur, resend all data elements
- Inpatient only
  - All admissions
  - All discharges
  - Traceable information for PH (both admits and discharges)

Laboratory Business Rules

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Laboratory Business Rules

If and only if senders are providing syndromic surveillance laboratory results data to PHA, the following business rules apply:

- Dynamic interaction model for laboratory reporting is the same as that for ADT messages (example on next slide);
- Lab reports are always to be sent without regards to synchronization with any other messages including ADT messages (can be sent together with ADT messages, but not requirement);
- Laboratory results should be sent as soon as they're available (within 24 hours of when they are received); and
- Matching PID segments or, at a minimum, patient identifier fields, must be sent.

Dynamic Interaction Models

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- Depict activity for sending syndromic surveillance data
  - Send data with acknowledgment
  - Send data without acknowledgment
  - Send data—batch

DYNAMIC INTERACTION MODELS

SEND SYNDROMIC SURVEILLANCE DATA WITH ACKNOWLEDGEMENT

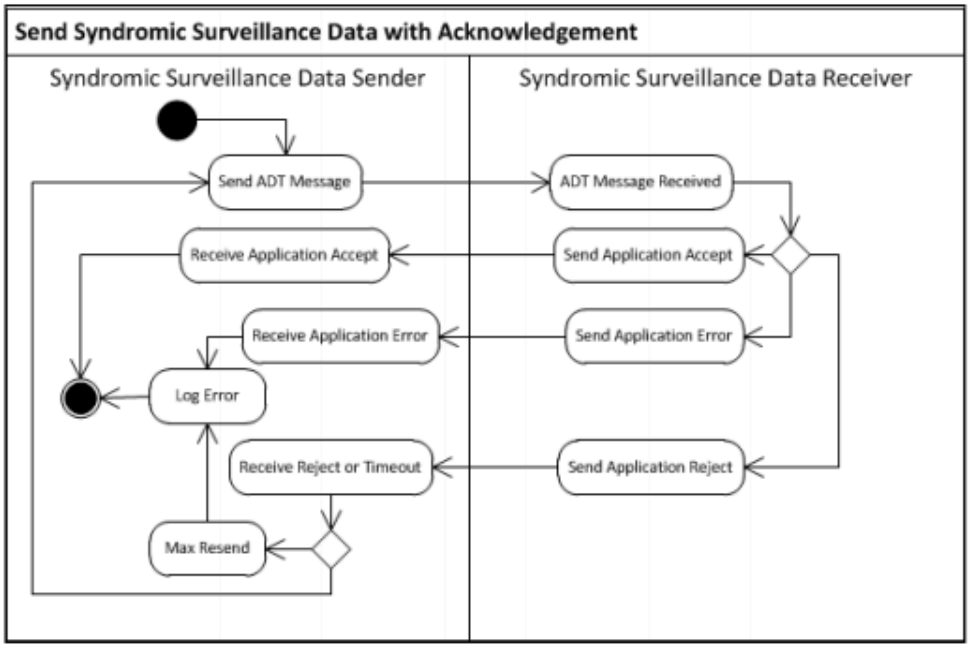

Figure 2.1.2 Activity Diagram for Send Syndromic Surveillance Data Use Case - Acknowledgement Required

Data Elements of Interest

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Usage Definitions

R: *Required.* Required indicates that the field is a required field. A value must be present in the field in order for the message to be accepted.

RE: *Required, but can be empty.* The field is a required field. However, if there is no data captured in the field due to the setting (e.g., no chief complaint data for a trauma patient) and the field is blank, the message may be sent with the field containing no data.

CE: *Conditional* (only applicable to age units; population of this field is dependent on population of Age, which is RE)

O: *Optional*. The field is optional. Local jurisdictions must further constrain these elements for implementation.

Data Elements of Interest

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ED, UC and Inpatient

Facility Identifier (Treating)
Facility Name (Treating)
Facility Street Address (Treating)
Facility City (Treating)
Facility ZIP Code (Treating)
Facility County (Treating)
Facility State (Treating)
Message Date/Time
Unique Patient/Visit Identifier
Age
Age Units* *(Conditional)*
Gender
Race
Ethnicity
Patient City/Town
Patient ZIP Code
Patient County
Patient State
Patient Country
Chief Complaint/ Reason for Visit

Admit or Encounter Date/Time
Patient Class
Hospital Unit
Diagnosis Type
Primary Diagnosis
Additional Diagnosis
Discharge Disposition
Discharge Date/Time
Systolic and Diastolic Blood Pressure (SBP/DBP)—most recent
Procedure Code
Laboratory test/panel requested
Laboratory Result
Laboratory test performed
Date/Time of laboratory test
Laboratory test status
Date of Lab Report
Performing organization
Specimen Type

Red=R
Blue=RE
Black=O

Inpatient only

Admit Reason
Height
Weight
Smoking Status

ED/UC only

Unique Physician Identifier
Initial Temperature
Observation, symptoms, and clinical findings
Triage Notes
Clinical Impression
Date of Onset
Facility/Visit Type
Medical Record Number
Initial Pulse Oximetry

Data Elements of Interest

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TABLE 2-5: DATA ELEMENTS OF INTEREST

Data Element Name	Description of Field	Sender Usage	Receiver Usage	Cardinality	Value Set /Value Domain	Implementation Notes	Recommended HL7 Location
Facility Identifier (Treating)	Unique facility identifier of facility where the patient is treated (original provider of the data)	R	R	[1..1]	Recommend the use of the National Provider Identifier Standard provided by Centers for Medicare and Medicaid Services. For more information about NPI, search for, or to apply for a NPI, click here. If NPI is not available, use a different unique identifier, such as OID or a State-designated identifier.	This number should be specific for each facility location (not a number representing an umbrella business) It is recommended that National Provider Identifier (NPI) be used for the Facility Identifier. National Provider Identifier. (10-digit identifier) **Note:** The use of 'NPI' should be discussed during the implementation process as local jurisdictions may differ on their use of identifiers for this field	EVN-7.2 Example EVN-7: |OTH_REG_MEDCTR^1234567890^NPI|

Data Element Name	Name of the core data set element as provided by ISDS
Description of Field	Description of the data element

Data Elements of Interest

Sending entity= hospital or urgent care setting

Receiving entity=PHA

TABLE 2-5: DATA ELEMENTS OF INTEREST

Data Element Name	Description of Field	Sender Usage	Receiver Usage	Cardinality	Value Set /Value Domain	Implementation Notes	Recommended HL7 Location
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Usage	Refers to whether an element must appear in the message. The Usage codes are: • R – Required Indicates that the field is a required field. A value must be present in the field in order for the message to be accepted. • RE – Required, but can be empty: Indicates that the field is a required field. However, if there is no data captured in the field due to the setting (e.g. no chief complaint data for a trauma patient) and the field is blank, the message may be sent with the field containing no data. • O – Optional: Optional for data to be sent in a message. Local jurisdictions must further constrain these elements for implementation.

**If Sender Usage is R or RE, certified EHRs will need to be able to send that data element*

Data Elements of Interest

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TABLE 2-5: DATA ELEMENTS OF INTEREST							
Data Element Name	**Description of Field**	**Sender Usage**	**Receiver Usage**	**Cardinality**	**Value Set /Value Domain**	**Implementation Notes**	**Recommended HL7 Location**
Facility Identifier (Treating)	Unique facility identifier of facility where the patient is treated (original provider of the data)	R	R	[1..1]	Recommend the use of the National Provider Identifier Standard provided by Centers for Medicare and Medicaid Services. For more information about NPI, search for, or to apply for a NPI, click here. If NPI is not available, use a different unique identifier, such as OID or a State-designated identifier.	This number should be specific for each facility location (not a number representing an umbrella business) It is recommended that National Provider Identifier (NPI) be used for the Facility Identifier. National Provider Identifier. (10-digit identifier) **Note:** The use of 'NPI' should be discussed during the implementation process as local jurisdictions may differ on their use of identifiers for this field	EVN-7.2 Example EVN-7: |OTH_REG_MEDCTR^1234567890^NPI|

Cardinality	Minimum and maximum number of times the element may appear

Data Elements of Interest

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Value Set OID / Name	Value Set OID and Name of value set containing the values that define the data element. These may be used to populate the tables from which coded message fields are drawn

Data Elements of Interest

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TABLE 2-5: DATA ELEMENTS OF INTEREST

Data Element Name	Description of Field	Sender Usage	Receiver Usage	Cardinality	Value Set /Value Domain	Implementation Notes	Recommended HL7 Location
Facility Identifier (Treating)	Unique facility identifier of facility where the patient is treated (original provider of the data)				he use l ifier ided by edicare more out NPI, to apply here. vailable, unique as OID ignated identifier.	This number should be specific for each facility location (not a number representing an umbrella business) It is recommended that National Provider Identifier (NPI) be used for the Facility Identifier. National Provider Identifier. (10-digit identifier) **Note:** The use of 'NPI' should be discussed during the implementation process as local jurisdictions may differ on their use of identifiers for this field	EVN-7.2 Example EVN-7: |OTH_REG_MEDCTR^1234567890^NPI|

Implementation Notes

INPATIENT DATA ELEMENT OF INTEREST ONLY

Implementation Note	Describes additional notes that are relevant to the rules and/or processing of the data element field. **NOTE**: If it is not otherwise explicitly stated, data element usage applies to both INPATIENT and ED/UC settings.

Data Elements of Interest

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TABLE 2-5: DATA ELEMENTS OF INTEREST

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Recommended HL7 Location	Recommended location of Data Element for HL7 message population

Components

- Introduction
- Actors, Goals, and Messaging Transactions
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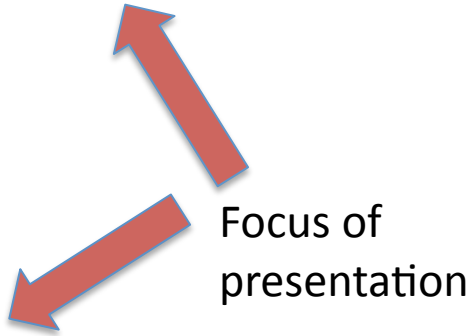
- Data type definitions
- Message segments by trigger event
- Appendix



Message type/trigger events

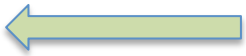
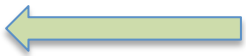
HL7 ADT Message Types in the Guide:

- ADT^A01: Admit/Visit Notification
- ADT^A04: Register a Patient
- ADT^A08: Update Patient Information
- ADT^A03: Discharge/End Visit
- ACK^AXX*: General Acknowledgment

*Can send ACK messages for each of the ADT message types

Message types

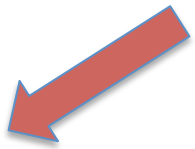
HL7 ADT Message Types

ADT^A01	Admit/Visit Notification		Inpatient
ADT^A04	Register a Patient		ED/UC
ADT^A08	Update Patient Information		ED/UC
ADT^A03	Discharge/End Visit		All settings
ACK^A01	General Acknowledgment		Inpatient
ACK^A04	General Acknowledgment		ED/UC
ACK^A08	General Acknowledgment		ED/UC
ACK^A03	General Acknowledgment		All settings

Message type/trigger events

Segment profiles consist of:

- Field name
- Sequence
- Data Type
- Length
- Sender/Receiver Usage
- Cardinality
- Description/Comments



These details correspond to those delineated in "Data Elements of Interest" section

Message type/trigger events

ADMIT / VISIT NOTIFICATION MESSAGE (ADT^A01)

ADT^A01 messages are used to communicate syndromic surveillance data to PHAs in the event of a patient admission to a hospital inpatient facility. This may occur as a result of a patient transfer from another facility (e.g., an emergency department or another hospital), or from other places (e.g., home).

TABLE 5-3 ADT^A01 ADMIT / VISIT NOTIFICATION

SEG	NAME	DESCRIPTION	USAGE	CARDINALITY
MSH	Message Header	Information explaining how to parse and process the message Information includes identification of message delimiters, sender, receiver, message type, timestamp, etc.	R	[1..1]
EVN	Event Type	Trigger event information for receiving application	R	[1..1]
PID	Patient Identification	Patient identifying and demographic information	R	[1..1]
PV1	Patient Visit	Information related to this visit at this facility including the nature of the visit, critical timing information and a unique visit identifier.	R	[1..1]
[PV2]	Patient Visit Additional Information	Admit Reason information.	RE	[0..1]
{OBX}	Observation / Result	Information regarding the age, temperature, and other information	R	[1..*]
[{DG1}]	Diagnosis	Admitting Diagnosis and, optionally, Working and Final Diagnosis information	RE	[0..*]
[{PR1}]	Procedures	Information relative to various types of procedures performed	O	[0..*]
[{IN1}]	Insurance	Information about insurance policy coverage information	O	[0..*]

Message type/trigger events

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ADMIT / VISIT NOTIFICATION MESSAGE (ADT^A01)

Message Header (MSH) Segment

The MSH Segment is used to define the intent, source, destination, and some specifics of the syntax of the message. This segment includes identification of message delimiters, sender, receiver, message type, timestamp, etc.

TABLE 5-3A: MESSAGE HEADER SEGMENT (MSH)

Field Name	Seq	DT	Length	Sender Usage	Receiver Usage	Cardinality	Description/Comments
Field Separator	1	ST	1	R	R	[1..1]	**Definition**: This field contains the separator between the segment ID and the first real field, MSH-2-encoding characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message. Default value is |, (ASCII 124).

Not a data element of interest

							equal EVN-2 (Message Date/Time)
Security	8	ST	40	X	X	[0..1]	
							Conformance Statement SS-014: MSH-9 (Message

Indicates field is not supported

Message type/trigger events

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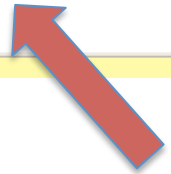
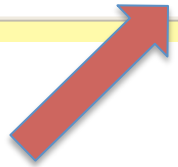
ADMIT / VISIT NOTIFICATION MESSAGE (ADT^A01)

TABLE 5-3C: PATIENT IDENTIFICATION SEGMENT (PID)

Field Name	Seq	DT	Length	Sender Usage	Receiver Usage	Cardinality	Description/Comments
Date/Time of Birth	7	TS	26	O	O	[0..1]	**Definition**: This field contains the patient's date and time of birth.
Administrative Sex	8	IS	1	RE	RE	[0..1]	PHVS_Gender_SyndromicSurveillance **Definition**: This field contains the patient's sex. **Data Element of Interest:** Gender





Administrative sex is a data element of interest

Closing notes

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- Continue the conversation by…
  - Attending ISDS's monthly Meaningful Use calls
    - Next meeting: **tomorrow, July 12, 12 pm-1 pm EDT**
    - Call information detailed in ISDS calendar (www.syndromic.org)
  - Contacting ISDS if you have questions or see any errors in Release 1.9
  - Joining the ISDS forum and participating in conversations in the Meaningful Use group

Acknowledgments

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- Technical support
- Development of messaging specifications

ISDS surveillance community

- Provided comments and feedback on draft versions of this Guide through phone calls, discussion forum, and email

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ISDS Meaningful Use Workgroups

- Development of Recommendations that served as basis for Guide information

This work supported by funding to ISDS through a CDC cooperative agreement to the Task Force for Global Health

Thank you!

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Questions?

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For more information:

www.syndromic.org

Link to PHIN Guide, Release 1.9:

http://www.cdc.gov/phin/resources/PHINguides.html#ss