



**MISSISSIPPI STATE DEPARTMENT OF HEALTH**

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# **Syndromic Surveillance Implementation Guide**

**Version 1.0  
October 2015**

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## **Introduction**

This document serves as the Mississippi State Department of Health's (MSDH) Syndromic Surveillance (SS) data implementation guide. The purpose of this document is to define how Syndromic Surveillance data should be communicated electronically to MSDH by an eligible or critical access hospital. This guide provides detail on how facilities will begin the On-Boarding process with a Kickoff call, structure HL7 content, validate data, and receive data certification.

The Syndromic Surveillance data objective requirement is to demonstrate the capability to submit Syndromic Surveillance data to public health agencies, except where prohibited, and in accordance with applicable law and practice. This objective will be measured by the successful ongoing submission of Syndromic Surveillance data from Certified EHR Technology to a public health agency for the entire EHR reporting period.<sup>1</sup>

MSDH works with the state health information exchange (the Mississippi Health Information Network- MS-HIN) to provide transport solutions for reporting public health data. MSDH has also designated MS-HIN the ability to satisfy Meaningful Use criteria for Syndromic Surveillance data transmissions. MS-HIN provides real time standards-based interfaces, as well as Direct secure messaging as a transport solution. Once an eligible or critical access hospital's readiness has been determined, MS-HIN staff will work closely with MSDH to determine the transport solution and implementation timeline.

## On-Boarding Process – Stage 2

### *Sending production level syndromic surveillance data reports*

At the end of this section you will know how to start and complete the MSDH Syndromic Surveillance Data process.

#### **Kick-off**

- Call with MSDH ELR/SS and MS-HIN Staff

#### **HL7 Structure/Content Validation**

- Formatting and Understanding each HL7 segment
- Identify National and Mississippi required fields

#### **Data Validation**

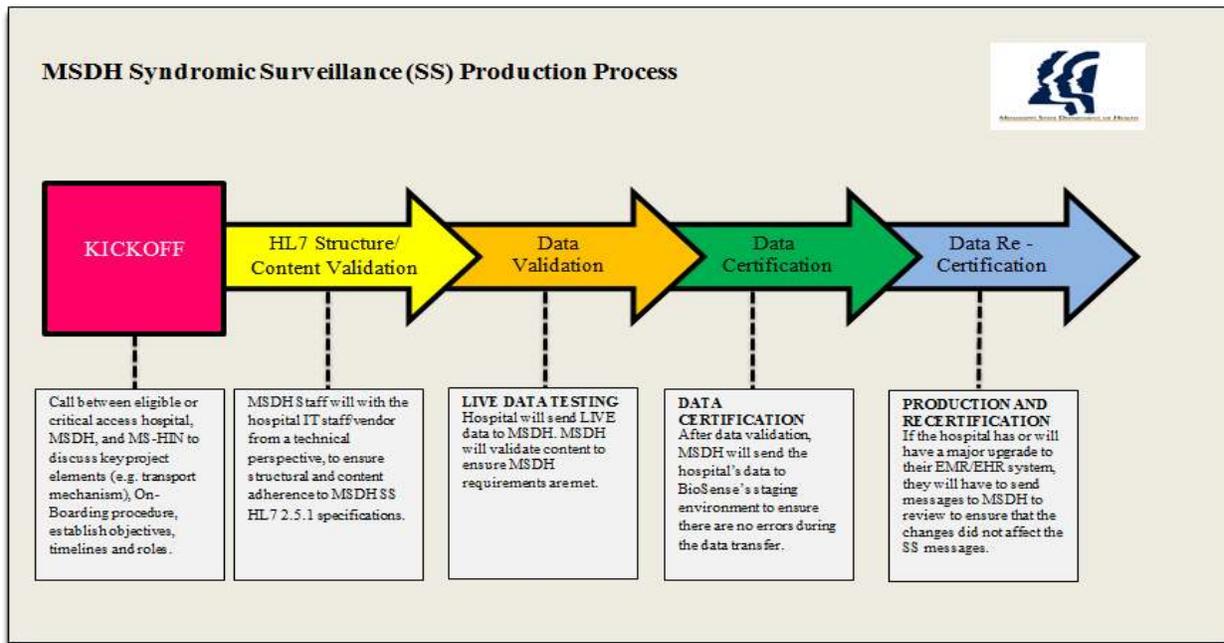
- Send production data in HL7 format
- Complete the facility template

#### **Data Certification**

- Send production data in HL7 format to BioSense Staging environment

#### **Data Re-Certification**

- After a major upgrade to a facility's EHR, messages will be re-certified to ensure the changes did not affect the SS messages.



*To begin the On-Boarding Process: Stage 2 for Syndromic Surveillance, complete the following instructions.*



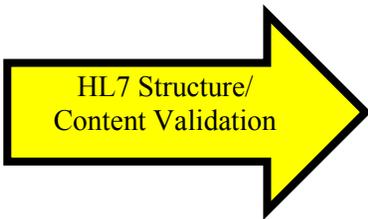
## KICKOFF CALL

*Call between eligible and critical access hospitals, MSDH, and MS-HIN to discuss key project elements (e.g., transport mechanism), On-Boarding procedure, establish objectives, timelines, and roles.*

### All Participants

- MSDH has designated MS-HIN the ability to satisfy Meaningful Use criteria for SS transmissions.
- Eligible and critical access hospitals can send SS data electronically MS-HIN and subsequently forwarded to MSDH in a timely manner.
- Please contact your [MS-HIN](#) representative to establish SS for your facility.





# HL7 STRUCTURE/ CONTENT VALIDATION

*MSDH Staff will work with the facility and IT staff/vendor, from a technical perspective, to ensure structural and content adherence to MSDH SS HL7 2.5.1 specifications.*

## SS Formatting

Each line of an SS has the following Format:

<A SegmentName>|Text11^Text12^Text13|Text21|^Test32^^^Test35|

A Segment Name can be:

- **MSH:** Provides information about the reporting facility
- **EVN:** Provides information about the event or reason for visit to ER/ED/UC
- **PID:** Provides information about the patient
- **PV1:** Provides information about the patient’s visit
- **PV2:** Provides continual information about the patient’s visit
- **OBX:** Provides information about an observation done
- **DG1:** Provides information about the patient’s diagnosis
- **PR1:** Provides information about the procedure(s) performed
- **IN1:** Provides information about the patient’s insurance

After the segment name you see many pipes (|) and carats (^). They are used as delimiters for fields. The first | marks the beginning of the Field 1 of a segment. The next | marks the end of the Field 1 and the beginning of the Field 2 and so on. Inside each field, you will see a ^ and the first one marks the end of subfield 1 and the beginning of the subfield 2.

## Identify National and Mississippi Required Fields

The following HL7 format fields are required by either the national level or by the state of Mississippi. Your facility has to adhere to All Required Fields (Column 5).

<b>1<sup>st</sup> Column</b>	<b>Name of Field</b>
<b>2<sup>nd</sup> Column</b>	<b>Possible example of what might be in the field</b>
<b>3<sup>rd</sup> Column</b>	<b>Segment</b>
<b>4<sup>th</sup> Column</b>	<b>The field number</b>
<b>5<sup>th</sup> Column</b>	<b>R=Required</b>
	<b>RE=Required, but can be empty</b>

## MSH

Field Separator	( )	1	R
Encoding Characters	(^,&, ~, \)	2	R
Sending Facility Namespace ID	Organization (20 - length)	4.1	RE
Sending Facility Universal ID	NPI Number (199 - digit)	4.2	R
Sending Facility Universal ID Type	"NPI" (6 - length)	4.3	R
Date/Time of Message	Date	7	R
Message Code	ADT	9.1	R
Trigger Event	A01, 03,04,08	9.2	R
Message Structure	ADT_A01...	9.3	R
Message Control ID	(NM)	10	R
Processing ID	(D, T, P)	11	R
Version ID	2.5.1	12	R

## EVN

Recorded Date/Time	Date/Time	2	R
Event Facility Namespace ID	Name - Text (20 - Length)	7.1	R
Event Facility Universal ID	NPI #	7.2	R
Event Facility Universal ID Type	"NPI"	7.3	R

## PID

Set ID-PID	(Usually "1")	1	RE
Patient Identifier List	Patient ID	3.1	R
Assigning Authority		3.4	RE
Identifier Type Code	"MR"	3.5	R
Assigning Facility		3.6	RE
Family Name		5.1	RE
Given Name		5.2	RE
Second Given Name or Initials		5.3	RE
Suffix		5.4	RE
Prefix	Mr., Ms., ...	5.5	RE
Name Type Code	L, S, U	5.7	R
Patient's Sex	M,F,U	8	RE
Race Identifier	Phin-Vads Code	10.1	RE
Race Text	Text	10.2	RE
Race Name of Coding System	"Phin-Vads"	10.3	C
Zip or Postal Code	Number	11.5	RE
County/Parish Code	Phin-Vads Code	11.9	RE
Ethnic Group Identifier	Phin-Vads Code	22.1	RE
Ethnic Group Text	Hispanic, ...	22.2	RE
Ethnic Name of Coding System	"Phin-Vads"	22.3	RE

Patient Death Date and Time	Date/Time	29	CE
Patient Death Indicator	yes/no	30	CE

### **PV1**

Set ID - PV1	Usually "1"	1	RE
Visit ID Number	Number	19.1	R
Visit ID Assigning Authority	Text	19.4	RE
Visit ID Identifier Type Code	"VN"	19.5	R
Visit ID Assigning Facility		19.6	RE
Discharge Disposition	Discharge Status	36	RE
Admit Date/Time	Date/Time	44	R

### **PV2**

Admit Reason Identifier	Code Number	3.1	RE
Admit Reason Text	Text	3.2	RE
Admit Reason Coding System	ICD-9, ...	3.3	C

### **OBX**

Set ID- OBX (1,2,3...)	OBX Seq. Number	1	RE
Value type	NM, CWE, ...	2	R
Observation Identifier	Code	3.1	R
Description	Text	3.2	O
Coding System	LN, PhinQuestion	3.3	C
Observation Value	Depends OBX2	5	RE
Units	Alphanumeric	6.1	R
Observation Result Status	F, W	11	R

### **DG1**

Set ID-DG1	Sequence ID	1	R
Diagnosis Code Identifier	Code	3.1	RE
Diagnosis Code Text	Text	3.2	RE
Diagnosis Name of Coding System	Text	3.3	C
Diagnosis Type	A, W or F	6	R

### **PR1**

Set ID-PR1	Sequence ID	1	R
Procedure Code	Code	3	R
Procedure Date/Time	Date/Time	5	R

### **IN1**

Set PR1	Sequence ID	1	R
Insurance Plan ID	Text	2	R
Insurance Company ID	ID Number	3	R

### Constrained Message Structure for ADT\_A01, A04, and A08

SEG	NAME	DESCRIPTION	USAGE
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
EVN	Event Type	Trigger event information for receiving application	R
PID	Patient Identification	Patient identifying and demographic information	R
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
PV2	Patient Visit Additional Information	Admit Reason information.	RE
OBX	Observation / Result	Information regarding the age, temperature, and other information	R
DG1	Diagnosis	Admitting Diagnosis and, optionally, Working and Final Diagnosis information	R
PR1	Procedures	Information relative to various types of procedures performed	R
IN1	Insurance	Information about insurance policy coverage information	R

### Constrained Message Structure for ADT\_A03

SEG	NAME	DESCRIPTION	USAGE
MSH	Message Header	Information explaining how to parse and process the message  This information includes identification of message delimiters, sender, receiver, message type, timestamp, etc.	R
EVN	Event Type	Trigger event information for receiving application	R

PID	Patient Identification	Patient identification and demographic information	R
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
PV2	Patient Visit Additional Information	Admit Reason information.	RE
DG1	Diagnosis	Admitting Diagnosis and, optionally, Working and Final Diagnosis information	R
PR1	Procedures	Information relative to various types of procedures performed	R
OBX	Observation / Result	Information regarding the age, temperature, and other information	R
IN1	Insurance	Information about insurance policy coverage information	R

**Legend:**

R	Required
RE	Required but can be empty (if data exists for the Segment/Field then that Segment/Field must be populated)
C	Conditional
CE	Conditional but can be empty (the data in this field is determined by the data entered in another field. If data exists for the field then that field must be populated). You will have to refer to the PHIN guide for the conditional requirements for each field in each section
O	Optional

**Translation of local codes to standardized codes**

Every facility in MS has their own local codes when it comes to identifying patient identifiers and etc. To be consistent and to standardize, the state requires the use of PHIN VADS codes.

PHIN VADS is the standardized vocabulary for patient identifiers. The facility and vendor need to work together to translate/map the locals codes to standard codes.



## PHIN VADS: STANDARD PATIENT IDENTIFIER CODES

Concept Code		Concept Name
Sex	A	Ambiguous
	F	Female
	M	Male
	N	Not applicable
	O	Other
	U	Unknown
Race	1002-5	American Indian or Alaska Native
	2028-9	Asian
	2054-5	Black or African American
	2076-8	Native Hawaiian or Other Pacific Islander
	2131-1	Other Race
	2106-3	White
Ethnicity	2135-2	Hispanic or Latino
	2186-5	Not Hispanic or Latino
	U	Unknown

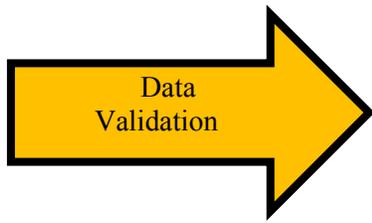
Numerous codes are being translated to standardized codes for consistent terminology. For example, when race is entered into the system, it needs to be in a standard code form so that it can correctly be read by the receiving system. The lists above cover codes for race, ethnicity, and sex. Here is an excerpt of sex, race, and ethnicity codes highlighted:

### PID example

```
PID|1||123456^^^GLH&1236547890&NPI^MR||TEST^TEST^T^^^L||12345678|F||2106-3^White^HL70005|11235 SOUTH BLVD^^GREENWOOD^MS^38930^^^28083|||||||2186-5^NOT HISPANIC OR LATINO^HL70189
```

See the following links for more details regarding PHIN VADS.

Link to PHIN VADS lookup web site	<a href="#">PHIN VADS Codes Look-up Web Site</a>
Link to MSDH PHIN VADS Spreadsheet	<a href="#">MSDH PHIN VAD spreadsheet</a>



## **LIVE DATA TESTING**

*Hospital will send LIVE data to MSDH. MSDH will validate content to ensure requirements are met.*

Send live patient data from the hospital to MSDH via Direct secure messaging.



## **DATA CERTIFICATION**

*Hospital will send LIVE data to MSDH. MSDH will send a feed to BioSense's staging environment for structure and content validation.*

Send live patient data from the hospital to MSDH. MSDH will open feed to BioSense's staging environment to ensure there are no errors during the data transfer.



## **DATA RE-CERTIFICATION**

*If a facility has a major upgrade to their EHR, they are required to resend messages for validation. This is to ensure the SS messages were not affected by the changes.*

Send live patient data from the hospital to MSDH via Direct secure messaging. MSDH will re-verify that the message structure and data has not been affect by the changes.

# FAQ

## How do I PHINVAD?

Follow the instructions on the [Vocabulary Worksheet](#). In short, you will find the standardized PHINVAD codes for Sex, Race, County Code, and Ethnicity. Your software vendor will also be able to answer any questions.

## Where can I find the required HL7 segments and fields?

The list of HL7 fields is on pages 7-11. It has a combination of all federal and state required HL7 fields and segments. This is the list that is used to validate whether or not a facility is ready to move into production.

## Can a facility use HL7 version 2.3.1?

In order to qualify for Meaningful Use, version 2.5.1 is required.

## What are the steps to completing the SS onboarding process?

Review the [MSDH SS Checklist](#) for the steps to complete the onboarding process.

## What types of SS messages does MSDH want to review?

There is a variety of SS data type messages from NM (numerical values), SN (numerical values that use greater than, less than, equal to, or ratios), and CE/CWE (coded result) formats. They should be as close to production level data as possible. Review the PHIN guide for other possible messages [PHIN Guide](#).

## Who is our State HIE?

MS-HIN is the State's HIE.

## Does a facility have to participate in MS-HIN in order to submit Meaningful Use- compliant public health data to MSDH?

Yes. MSDH and MS-HIN are working closely together to implement efficiencies in health information exchange throughout the state.

***MSDH is requiring that all EHs, EPs, and CAHs use MS-HIN to satisfy their MU Public Health reporting.***

## **What is the difference between a Leveraged Interface and an Independent Interface?**

A leveraged interface means that there will be one interface that will send all reporting information to the state HIE, MS-HIN, which will then send it to MSDH.

An Independent interface means that there will be at least two interfaces. One interface will send information to MS-HIN, while, a separate independent interface will send information from the hospital, pass through MS-HIN, and directly to MSDH for consumption.

## **What is the Direct Messaging SS email?**

The facility must use their Direct Messaging account to send secure information to MSDH to [msdh.ss.onboard@msdh.mshindirect.org](mailto:msdh.ss.onboard@msdh.mshindirect.org).

## **If a field is marked as “Required but Empty” (RE), does the facility still have to put in the field pipes |?**

Yes, the field pipes must be present for all Required but Empty (RE) fields. The facility will have to be able to demonstrate that it could populate the field if the information was available. The facility is not required to report the information, only demonstrate the ability.

## **If a field is marked as “Required but Empty” (RE), does the facility still have to put in the carats ^?**

Yes, the carats ^ must be present for all Required but Empty (RE) fields. The facility will have to be able to demonstrate that it could populate the field if the information was available. The facility is not required to report the information, only demonstrate the ability.

## **If an ER Patient is admitted as an Inpatient, do you want to receive any further updates, or does that end the reporting?**

Yes, the facilities should continue to report after the patient has received an inpatient status.

## **If a patient comes in the ER/ED/UC and receives a temporary ID and the patient status is changed to inpatient, will the patient having two IDs cause an issue with BioSense?**

Yes, BioSense is aware of this issue and is currently working to address this problem. BioSense is encouraging all facilities to continue send data.

## **Does a facility have to use county PHINVAD codes in PID 11.9 if the patient is from outside of Mississippi?**

Only Mississippi counties need to be PHINVAD coded; however, if the EHR is capable of sending the

out- of-state county name, then this information would be helpful to receive.

### **Why should a facility send IN1 data to MSDH?**

If the vendor is not sending IN1 data to MS-HIN, there is no reason for the data to be included in the syndromic surveillance feed to MSDH.

### **What types of ADT messages are required for validation?**

ADT\_A01, A03, A04, and A08 messages are required for validation. Each facility must ensure that the messages they are sending are complete. Meaning, if diagnosis, chief complaints, and other viable information are not complete, then the facility will have to send messages collected from the ER/ED department. Incomplete messages will cause issues with the feed to BioSense.

# Appendix

## Look-Up Links

[PHIN VADS Codes Look-up Web Site](#)

[Certified EHR Technology Vendor List](#)

## Helpful Links

[CDC Introduction to Meaningful Use](#)

[CMS Stage 1 Requirements Overview](#)

[CMS Stage 2 Requirements Overview](#)

[CMS - Getting Started with EHR Incentive Program](#)

[PHIN Requirements Version 2](#)

## Acronyms and Definitions

<b>AHIC</b>	American Health Information Community	A federal group formed in 2005 to advise the Secretary of the Department of Health and Human Services on methods of increasing EHR adoption in healthcare facilities.
<b>ARRA</b>	American Recovery and Reinvestment Act	Commonly referred to as the Stimulus or The Recovery Act, was an economic stimulus package enacted by the 111th United States Congress in February 2009 and signed into law on February 17, 2009, by President Barack Obama.
<b>CDC</b>	Center for Disease Control	The national public health institute of the United States.
<b>CMS</b>	Centers for Medicare and Medicaid Services	Department within Department of Health and Human Services (DHHS) that administers the Medicare program and works in partnership with state governments to administer Medicaid,
<b>Direct Email</b>	Secure Messaging Service	A secure electronic exchange of patient information which allows health care providers a quick, secure, reliable access to patient health records.
<b>EHR/EMR</b>	Electronic Health Records/Electronic Medical Record	Term used to describe both an individual's record and the software system used to present the information of the record.
<b>HIE</b>	Health Information Exchange	Provides the capability to electronically move clinical information among disparate health care information systems while maintaining the meaning of the information being exchanged.
<b>HIPAA</b>	Health Insurance and Portability and Accountability Act	Protects the privacy of individually identifiable health information.

<b>HITECH</b>	Health Information Technology for Economic and Clinical Health	Enacted to promote the adoption and meaningful use of health information technology.
<b>HL7</b>	Health Level 7	Standard Used for sending Medical Records securely across disparate systems.
<b>LIMS</b>	Laboratory Information Management System	A software-based laboratory and information management system.
<b>MS-HIN</b>	Mississippi - Health Information Network	A secure electronic exchange of patient information which allows health care providers a quick, secure, reliable access to patient health records. T
<b>ONC</b>	Office of the National Coordinator (for Health IT)	ONC is organizationally located within the Office of the Secretary for the U.S. Department of Health and Human Services (HHS).
<b>ORU</b>	Observational Report – Unsolicited	This is the type of HL7 message that has been designated for ELRs. There are many, many other types of HL7 messages.
<b>PHIN</b>	Public Health Information Network	Standards used by the CDC for using nation- wide interoperable information systems to support public health at the national, state, territorial, and local levels.
<b>PHIN VADS</b>	Public Health Information Network Vocabulary Access and Distribution System	PHIN VADS is a web-based enterprise vocabulary system for accessing, searching, and distributing vocabularies used in public health and clinical care practice.
<b>SS</b>	Syndromic Surveillance data Reporting	SS data reporting allows hospital to report Syndromic Surveillance data to BioSense.



# MISSISSIPPI STATE DEPARTMENT OF HEALTH

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Syndromic Surveillance Data Reporting Implementation Guide to On-Boarding  
Version 1.0 - October 2015