



**TEXAS**  
Health and Human  
Services

**Texas Department of State  
Health Services**

# **Texas Syndromic Surveillance (TxS2)**

## **Procedure**

### **Data Provider Onboarding and Messaging**

**Version 2**

**November 1, 2017**

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## Section 1. Purpose

This document defines the specific steps required for Data Providers (for example hospitals) to successfully test and submit syndromic data to the TxS2 system.

## Section 2. Background

Texas Syndromic Surveillance (TxS2) is a statewide syndromic surveillance system built and maintained by the Texas Department of State Health Services (DSHS) for use by Local Health Departments (LHDs), DSHS Public Health Regions (PHRs), DSHS central office, and hospitals for enhanced surveillance of emerging public health conditions or threats. Syndromic surveillance utilizes trend analysis to establish a baseline and then uses algorithms to compare the current data to that baseline and issue alerts when aberrations are detected.

The TxS2 technical infrastructure consists of production and test environments. The TxS2 configuration consists of Data Providers (for example hospitals) using secure protocols to share individual-level data through the DSHS Health Services Gateway. Rhapsody<sup>®</sup> software is used for data ingestion and Texas Data Center Services (DCS) is used for data hosting. Data is stored in a secure database and accessed by Users (LHDs, DSHS PHRs, DSHS central office, and participating hospitals) via the Internet using the analysis software called ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics), developed by the Johns Hopkins University Applied Physics Laboratory.

## Section 3. Onboarding Procedure

Participation in TxS2 by Data Providers requires a fully executed Memorandum of Understanding (MOU). Instructions for executing the MOU and other steps in the registration and onboarding process are outlined in the Data Provider and TxS2 User Registration and Onboarding Procedure (located under [Policies and Procedures](#) on the [TxS2 website](#)). Please contact [syndromic.surveillance@dshs.texas.gov](mailto:syndromic.surveillance@dshs.texas.gov) if you need more information about the process.

Once DSHS receives the Data Providers intent to submit data and the Data Provider begins Part 1 of Onboarding and Testing (begins the process to obtain a signed MOU), DSHS will contact the Data Provider and invite them to initiate the following steps (see Appendix A for a checklist):

1. Data Provider coordinates with DSHS to review the secure transport method and HL7 message format.
2. Data Provider develops an HL7 message conformant to the [PHIN Messaging Guide for Syndromic Surveillance: Emergency Department and Urgent Care Data; ADT Messages A01, A03, A04, and A08 HL7 v2.5.1: Release 2.0 \(August 2015\)](#) and based upon Texas Syndromic Surveillance Messaging Guidelines (see Section 4).
3. Data Provider tests HL7-based syndromic surveillance message with the [NIST HL7 syndromic surveillance validation tool](#) and resolves any identified issues.
  - a. All four HL7 Admit-Discharge-Transfer (ADT) message types should be created and tested (A01 – Admit/Visit, A03 – Discharge/End Visit, A04 – Registration, and A08 – Update Patient Information).
  - b. Test at least two samples of each message type.
4. Data Provider sends the NIST HL7 Validation Report and a copy of the test message to [TxS2Support@dshs.texas.gov](mailto:TxS2Support@dshs.texas.gov) to notify DSHS staff they are done with message testing and ready to proceed with establishing a connection to TxS2.
5. DSHS and Data Provider establish and test the secure transport method with ADT A01, A03, A04, and A08 syndromic surveillance test messages that do not contain actual patient information, utilizing the following filename convention with no spaces:  
{Provider}\_{Date}\_{Hour}\_{FileNumber}.{Suffix}

Name Segment	Description
Provider	The 10-digit NPI number of the Data Provider.
Date	The date in the form of YYYYMMDD.
Hour	The 2-digit military hour (00-23).
FileNumber	The unique number used when more than one file is sent per hour.
Suffix	hl7, for HL7 formatted content

6. Data Provider corrects any identified issues with ADT A01, A03, A04, and A08 syndromic surveillance test messages.
7. DSHS acknowledges successful transport connectivity and message format of test messages.
8. Data Provider transmits via secure transport method ADT A01, A03, A04, and A08 live production syndromic surveillance messages.
9. Data Provider corrects any identified issues with ADT A01, A03, A04, and A08 live production syndromic surveillance messages.

10. DSHS acknowledges successful transport connectivity and live production message format.
11. Data Provider ensures ongoing data submission.
  - a. Data files should be batched and sent at least every 4 hours.
  - b. Data files should be submitted no later than 24 hours of the patient's initial encounter or updates to the patient's record.
12. Data Provider and DSHS monitor data feeds to ensure ongoing data quality. For technical support, please contact [TxS2Support@dshs.texas.gov](mailto:TxS2Support@dshs.texas.gov).

## Section 4. Messaging Guidelines

The messaging specifications in this guide are taken from on the [PHIN Messaging Guide for Syndromic Surveillance: Emergency Department and Urgent Care Data Release 2.0 \(April 2015\)](#). Not all the information presented in the PHIN Messaging Guide is replicated here.

DSHS is currently only accepting data from hospitals with emergency departments, free-standing emergency centers, and urgent care centers. We do not accept inpatient and ambulatory care data at this time. (Facilities with emergency departments should not send data from individuals who do not visit the emergency department as part of their visit to the facility.)

Users of this guide must be familiar with the details of HL7 v2.5.1 message construction and processing as this guide is not intended to be a tutorial on HL7.

### *4.1 Message Types*

Txs2 only supports the following four HL7 Admit-Discharge-Transfer (ADT) message types.

<b>ADT Message Type</b>	<b>Description</b>
ADT^A01	Inpatient Admission
ADT^A03	Discharge/End Visit
ADT^A04	Emergency Department Registration
ADT^A08	Updates to A01 and A04 Messages

## 4.2 Segment Order

The following table highlights the required segment order for each of the accepted ADT message types.

<b>Segment Order – ADT^A01, ADT^A04, ADT^A08</b>	<b>Segment Order – ADT^A03</b>
MSH	MSH
EVN	EVN
PID	PID
PV1	PV1
[PV2]	[PV2]
{OBX}	[[DG1]]
[[DG1]]	[[PR1]]
[[PR1]]	{OBX}
[[IN1]]	[[IN1]]

## 4.3 Required Data Fields

The required data fields are taken from the [PHIN Messaging Guide for Syndromic Surveillance: Emergency Department and Urgent Care Data Release 2.0 \(April 2015\)](#).

Please refer to Appendix B for the list of data elements required.

## 4.4 Message Transport and Acknowledgement

Secure FTP (SFTP) is the preferred secure transport mechanism for TxS2. TxS2 does not send message acknowledgements at this time. TxS2 technical staff will e-mail you for issues related to message quality or transmission or you may contact the TxS2 team at [TxS2Support@dshs.texas.gov](mailto:TxS2Support@dshs.texas.gov).

## Section 5. Responsibilities

DSHS has the responsibility for developing and maintaining the TxS2 system in a secure environment, developing and maintaining policies and procedures for TxS2, and for maintaining User access to TxS2. Data Providers have the responsibility to ensure ongoing submission of quality syndromic surveillance data.

## Section 6. Points of Contact

Name	Role	Phone	Email
TxS2 Team	General Inquires	(512) 776-7770	<a href="mailto:syndromic-surveillance@dshs.texas.gov">syndromic-surveillance@dshs.texas.gov</a>
TxS2 Support	Technical Support	(512) 776-7770	<a href="mailto:TxS2Support@dshs.texas.gov">TxS2Support@dshs.texas.gov</a>

## Section 7. References

1. PHIN Messaging Guide for Syndromic Surveillance: Emergency Department and Urgent Care Data Release 2.0 (April 2015): <https://www.cdc.gov/phin/resources/phinguides.html#SS>.
2. NIST HL7 V2 Validation Tool for Syndromic Surveillance: <https://hl7v2-ss-r2-testing.nist.gov/ss-r2/>.
3. HL7 everything at: <http://www.hl7.org>.
4. National Syndromic Surveillance Project: Onboarding Guide to the BioSense Platform (June 2016): <https://www.cdc.gov/nssp/biosense/onboarding.html>.

## Section 7. Revision History

Date	Version	Action	Section
3/14/17	1	New procedure	
11/1/17	2	Minor edits	All



## Appendix A. Onboarding Checklist

Below is a checklist of the onboarding steps.

- Data Provider is contacted by DSHS and invited to initiate the onboarding and testing steps.
- Data Provider coordinates with DSHS to review the secure transport method and HL7 message format.
- Data Provider develops an HL7 message conformant to the PHIN Messaging Guide for Syndromic Surveillance: Emergency Department and Urgent Care Data; ADT Messages A01, A03, A04, and A08 HL7 v2.5.1: Release 2.0 (August 2015) and based upon Texas Syndromic Surveillance Messaging Guidelines (see Section 4).
- Data Provider tests HL7-based syndromic surveillance message with the NIST HL7 syndromic surveillance validation tool and resolves any identified issues.
- Data Provider sends the NIST HL7 Validation Report and a copy of the test message to TxS2Support@dshs.texas.gov to notify DSHS staff they are done with message testing and ready to proceed with establishing a connection to TxS2.
- DSHS and Data Provider establish and test secure transport method with ADT A01, A03, A04, and A08 syndromic surveillance test messages that do not contain actual patient information, utilizing the following filename convention with no spaces:  
{Provider}\_{Date}\_{Hour}\_{FileNumber}.{Suffix}
- Data Provider corrects any identified issues with ADT A01, A03, A04, and A08 syndromic surveillance test messages.
- DSHS acknowledges successful transport connectivity and message format of test messages.
- Data Provider transmits via secure transport method ADT A01, A03, A04, and A08 live production syndromic surveillance messages.
- Data Provider corrects any identified issues with ADT A01, A03, A04, and A08 live production syndromic surveillance messages.
- DSHS acknowledges successful transport connectivity and live production message format.
- Data Provider ensures ongoing data submission.
- Data Provider and DSHS monitor data feeds to ensure ongoing data quality. For technical support, please contact TxS2Support@dshs.texas.gov.

## Appendix B: Required Data Elements

The required data fields are taken from the PHIN Messaging Guide for Syndromic Surveillance: Emergency Department and Urgent Care Data Release 2.0 (April 2015), Section 4.2:  
<https://www.cdc.gov/phn/resources/phinguides.html#SS>.