

Kentucky Health Information Exchange (KHIE)

BioSense Subscription Specifications

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Document Authors

The following people are authors of this:

Name	Organization / Title	Role
Susannah Ollivierre	Deloitte	Functional Lead
Russell Ott	Deloitte	Specifications Lead
Laxmikanth Vardhanapu	Deloitte	Specifications Sr.Consultant
Chrystal Hopp	Deloitte	Specifications Consultant

Document Approvers

The following people are reviewers / approvers of the final version of this document:

Name	Organization	Role	D
Rebecca Arnett	KHIE	Project Manager, Syndromic	04/05/2023
Charlese Blair	KHIE	Division Director	06/09/2023

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1. Overview

Purpose and scope

This document provides the specifications needed for the BioSense Subscription - ADT Syndromic Surveillance transactions for connection to the Kentucky Health Information Exchange (KHIE).

The BioSense Subscription – ADT Syndromic Surveillance transactions scope is as follows:

1. ADT^A04 – Patient Registration
2. ADT^A03 – Discharge / End Visit
3. ADT^A01 – Admit/ Visit Notification
4. ADT^A08 – Updates Patient Information previously sent on A01 and A04 messages

Reference Materials

The following documents have been referenced in the creation of these specifications:

- *HL7 Messaging Standard Version 2.5.1*
http://www.hl7.org/implement/standards/product_brief.cfm?product_id=144
- *Syndromic Surveillance*
https://www.syndromicsurveillance.org/BioSense/onboarding/guide/data_integration/index.html
- *CDC - NSSP*
<https://www.cdc.gov/nssp/index.html>

Requirement documents referenced for developing the specifications:

- 4b-Requirements-BioSense Subscription-vx.x.docx
- 3a-Specifications-WebServicesHL7V2-vx.x.doc

Full ADT Feeds / Syndromic Surveillance / ADT & Syndromic

Upon receipt, the transactions are inspected to determine whether patient data pertain to BioSense.

The following criteria are applied to determine whether transactions are related to BioSense to appropriately route them to the BioSense registry.

Determine if incoming message is a BioSense message

```

If <MSH.9.1> = ADT
and
If <MSH.4.2> = 'Lookup NPI (Refer Appendix C: NPIs Onboarded for BioSense)
and
{
If <OBX.3.1> / <OBX.3.4> = 'Lookup LOINC (Refer Appendix B: LOINC / ICD Codes
for BioSense Routing)
OR
If <DG1.3.1> / <DG1.3.4> = 'Lookup ICD9 /ICD 10 (Refer Appendix B: LOINC /
ICD Codes for BioSense Routing)
}

```

3. HL7 Transaction Validation Criteria

HL7 segments considered in-scope for BioSense transactions are:

1. MSH – Message Header
2. EVN – Event Type
3. PID – Patient Identification
4. PV1 – Patient Visit
5. OBX – Observation / Result
6. DG1 – Diagnosis Information

Other than in-scope segments as specified above, all other segments are removed from the ADT transaction.

Refer to 3a-Specifications-WebServicesHL7V2-vx.x x.x.x.doc
Section 2.2 HL7 v2.5.1 Schema Validation Requirements

4. Message Transformation Syndromic Surveillance Guidelines

Personal information in BioSense transactions as specified below will be removed during transformation:

In MSH Segment, perform the following transforming to the HL7 MSH element values:

- o Transformation 1
 - If <MSH.9.3> = 'A01' or 'A04' or 'A08'
 - Then Uplift < MSH.9.3 > value to "ADT_01"
 - Else If <MSH.9.3> = 'A03 '
 - Then Uplift < MSH.9.3 > value to "ADT_03"
- o Transformation 2, If <MSH.12> != '2.5.1' , hardcode value '2.5.1' in <MSH.12>

In PID Segment, the values below are deleted during transformation of the HL7 message element:

- Transformation 3 Delete < PID.5.1 > value
- Transformation 4 Delete < PID.5.2 > value
- Transformation 5 Delete < PID.5.3 > value
- Transformation 6 Delete < PID.5.4 > value
- Transformation 7 Delete < PID.5.5 > value
- Transformation 8 Delete < PID.5.6> value
- Transformation 9 Delete < PID.5.8> value
- Transformation 10 Delete < PID.5.9> value
- Transformation 11 Delete < PID.5.10 > value
- Transformation 12 Delete < PID.5.11 > value
- Transformation 13 Delete < PID.5.12 > value
- Transformation 14 Delete <PID.6> value
- Transformation 15 Delete < PID.9 > value
- Transformation 16 Delete < PID.11.1 > value
- Transformation 17 Delete < PID.11.2 > value
- Transformation 18 Delete < PID.11.8 > value
- Transformation 19 Delete <PID.13> value
- Transformation 20 Delete < PID.14 > value
- Transformation 21 Delete < PID.15 > value
- Transformation 22 Delete < PID.16 > value
- Transformation 23 Delete < PID.17 > value
- Transformation 24 Delete <PID.19> value
- Transformation 25 Delete < PID.20 > value
- Transformation 26 Delete < PID.21 > value
- Transformation 27 Delete < PID.23 > value
- Transformation 28 Delete < PID.24 > value
- Transformation 29 Delete <PID.25> value
- Transformation 30 Delete < PID.26 > value
- Transformation 31 Delete < PID.27 > value
- Transformation 32 Delete < PID.28 > value

In PID Segment,

- Transformation 34 Validate If <PID.3.5> != 'MR' delete any other values received.

5. KHIE Business Rule Validation

Per KHIE 4b BioSense Requirements, several business rules must be validated. If a message passes those business rules, a positive acknowledgement message will be returned to the sender (see ACK Requirements). If a message fails any of those business rules, a negative acknowledgement message will be returned to the sender (NACK Requirements).

ACK Requirements

Refer to 3a-Specifications-WebServicesHL7V2-vx.x.x.x.doc
Section # 2.1.1 ACK Requirements for details

NACK Requirements

Refer to 3a-Specifications-WebServicesHL7V2-vx.x.x.x.doc
Section # 2.1.2 NACK Requirements for details

Exception NACK requirement to be considered for BioSense specifications

Function	Req ID	Scenario	ERR.3	ERR.8	Notes
Primary (Minimum) Validations	3A-V2-FR-07, 3A-V2-FR-09	Invalid value in Identifier Type Code (PID.3.5)	999	Invalid value in PID.3.5. The accepted value is "MR".	NACK Override required as system to perform transformation

6. Reporting

Syndromic Detailed Report defaults to previous one week. Configurable as shown below.

Batch ID	Batch Date / Global ID Transaction ID NPI Time	Message Control ID	Batch Response
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6. Appendix

Appendix A: Acronym List / Glossary

Refer to 4b-Requirements-BioSense Subscription-v2.0.docx – Section 4.1 Acronyms List / Glossary

Appendix B: LOINC / ICD Codes for BioSense Routing

The excel file containing LOINC / ICD codes for BioSense Routing will be included as an appendix in the requirements document.
The codes can change regularly and as frequent as monthly.
Refer to 4b-Requirements-BioSense Subscription-v2.0.docx – Section 4.2 LOINC / ICD Codes for BioSense Routing (4b-BioSense - Attachment A - LOINC and ICD Codes for BioSense Routing.xls)

Appendix C: NPIs Onboarded for BioSense

Refer to 4b-Requirements-BioSense Subscription-v2.0.docx – Section 4.3 NPIs Onboarded for BioSense (4b-BioSense - Attachment B - NPI Table - Syndromic Surveillance.xlsx)