Public Health Information Network
HL7 Version 2.5

PHIN Messaging Standard

PHIN BATCH SPECIFICATION

Version – 1.1
June 22, 2010

Centers for Disease Control and Prevention

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REVISION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0		5/22/08			▪ Finalized
1.1	Adam Browning	2/18/10			▪ Converted profile to specification
1.1	Adam Browning	2/22/10			▪ Removed "only one type of notification per batch" statement

1 INTRODUCTION

The HL7 Batch Protocol may be employed by any implementation of HL7 messages to make messaging more efficient with the Public Health Information Network Messaging System (PHINMS). There are no restrictions on the types of messages sent in a particular batch.

Due to size limitations on PHINMS, a single batch file should not exceed 10 Mb in size.

The HL7 file header and trailer and the batch header and trailer segments are defined in exactly the same manner as the HL7 message segments; hence, the same HL7 message construction rules used for individual messages can be used to encode and decode HL7 batch files.

Implementation details such as the use of acknowledgments and expected payloads must be negotiated between the sender and receiver systems.

1.1 AUDIENCE

This document is not intended as a tutorial for either HL7 or interfacing in general. The reader is expected to have a basic understanding of interface concepts and HL7.

This specification is designed for use by messaging analysts and technical implementers working to send or receive a specific PHIN notification. It must be used with the companion Message Mapping Guide to populate the specified structure with the content for the condition being passed.

1.2 CONTACTS

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2   HL7 BATCH FILE STRUCTURE

The following message structure description portrays the HL7 batch file structure, constrained for use as a Case Notification container. The static definition is based on a message structure defined in the HL7 Standard. It is in compliance with the HL7 – messaging profiles, and may also define additional constraints on the standard HL7 message.

2.1   ABSTRACT MESSAGE ATTRIBUTES TABLE ABBREVIATIONS

<table>
<tr><td colspan="2" align="center">TABLE 2.1 MESSAGE ATTRIBUTES</td></tr>
<tr><td align="center">Abbreviation</td><td align="center">Definition</td></tr>
<tr>
<td align="center">Segment</td>
<td>Three-character code for the segment and theHL7 standard abstract syntax (<i>i.e.</i>, the square and curly braces)

[XXX]   Optional
{ XXX }   Repeating
XXX   Required
[{ XXX }]   Optional and Repeating

Note that for Segment Groups there will not be a segment code present, but the square and curly braces will still be present.</td>
</tr>
<tr>
<td align="center">Name</td>
<td>Name of the Segment or Segment Group element.</td>
</tr>
<tr>
<td align="center">Usage</td>
<td>Use of the segment for this guide. Indicates if the segment is required, optional, or conditional in a message. Legal values are

R – Required. Must always be populated.

Conformant sending applications shall be capable of sending this message element, and the message element must always be populated with non-empty values.

Conformant receiving applications shall not reject a message containing this message element.

Conformant receivers may reject the message because this message element is not present or empty. The receiver may process or ignore this message element.

RE – Required, but can be empty.

Conformant sending applications shall be capable of sending this message element, although the message element may be empty or not present in a message instance.

Conformant sending applications should send this message element when they have data available to send. For example, an application that has data for a particular patient for this message element stored in its data store, but does not send the data in the message would be non-conformant.

Conformant receiving applications shall not reject a message containing or missing this message element. The receiver may process or ignore this message element.

O – Optional.

Use of optional message elements must be negotiated between the sender and receiver.

C – Conditional. Must be populated based on computable Conditionality Statement.

If the conditionality statement is true, the message element is required, otherwise the message element is optional.</td>
</tr>
</table>

TABLE 2.1 MESSAGE ATTRIBUTES

Abbreviation	Definition

	CE – Conditional, but can be empty.
	    If the associated conditionality statement is true, the message element is required; otherwise, the message element is empty.
	X – Not used.
	    Conformant sending applications shall not populate these elements.
	    Conformant receiving applications may choose to reject the message if this element is present.
	    Receivers may choose to ignore this message element if populated.

Cardinality	Indicator of the minimum and maximum number of times the element may appear.
	    [0..0] Element never present.
	    [0..1] Element may be omitted and it can have at most, one Occurrence.
	    [1..1] Element must have exactly one Occurrence.
	    [0..n] Element may be omitted or may repeat up to n times.
	    [1..n] Element must appear at least once, and may repeat up to n times.
	    [0..*] Element may be omitted or repeat for an unlimited number of times.
	    [1..*] Element must appear at least once, and may repeat unlimited number of times.
	    [m..n] Element must appear at least m, and at most, n times.

Section	Indicator of the part of this guide that describes the segment.
Description	A short description of the use of the segment.

Note: In the tables throughout this document, items in yellow = Not supported by the PHIN Standard.

2.2 ABSTRACT MESSAGE SYNTAX

TABLE 2–2. BATCH FILE ABSTRACT MESSAGE SYNTAX

Segment	Name	Usage	Cardinality	Section	Description
FHS	File Header Segment	R	[1..1]	3.1	This segment is used as the lead-in to a file (group of batches).
--- BATCH begin					
BHS	Batch Header Segment	R	[1..1]	3.2	The BHS segment is used to head a group of messages that comprise a batch.
{ [--- MESSAGE begin					
	(1(one) or more HL7 messages)				
] } --- MESSAGE end					
[BTS]	Batch Trailer Segment	O	[0..1]	3.3	The BTS segment defines the end of a batch of messages. **Only a single batch is expected per file.**
--- Batch end					
[FTS]	File Trailer Segment	O	[0..1]	3.4	The FTS segment defines the end of a file (group of batches).

3 HL7 BATCH FILE SEGMENTS

3.1 FHS – FILE HEADER SEGMENT

This segment is used as the lead-in to a file (group of batches).

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
						TABLE 3.1 File Header Segment (FHS)	
1	1	ST	R	[1..1]		File Field Separator	Character to be used as the field separator for the rest of the message. The supported value is |, ASCII (124).
2	4	ST	R	[1..1]		File Encoding Characters	Four characters that always appear in the same order in this field: |^~\&|.
3	227	HD	O	[0..1]		File Sending Application	Field used to uniquely identify the sending application for messaging purposes.
3.1	20	IS	O	[0..1]		Namespace ID	
3.2	199	ST	R	[1..1]		Universal ID	OID for the sending application instance.
3.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.
4	227	HD	O	[0..1]		File Sending Facility	Unique identifier of the facility that sends the message. The sending facility must be part of the PHIN OID registry.
4.1	20	IS	O	[0..1]		Namespace ID	
4.2	199	ST	R	[1..1]		Universal ID	OID for the sending facility.
4.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.
5	227	HD	O	[0..1]		File Receiving Application	Unique identifier of the receiving application for messaging purposes. This field has the same definition as the corresponding field in the MSH segment.
5.1	20	IS	O	[0..1]		Namespace ID	
5.2	199	ST	R	[1..1]		Universal ID	OID for the CDC Broker Instance.
5.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.
6	227	HD	O	[0..1]		File Receiving Facility	Unique identifier of the facility that is to receive the message. This field has the same definition as the corresponding field in the MSH segment.
6.1	20	IS	O	[0..1]		Namespace ID	Literal value: 'PHIN', if used.
6.2	199	ST	R	[1..1]		Universal ID	Literal value: '2.16.840.1.114222'.

TABLE 3.1 File Header Segment (FHS)

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
6.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'
7	26	TS	O	[0..1]		File Creation Date/Time	Date/time the file was created by the sending system.
9	20	ST	O	[0..1]		File Name/ID	Field that may be used by the application processing file. Its use is not further specified.
10	20	ST	O	[0..1]		File Header Comment	Field that may contain free text, the use of which is not further specified.
11	50	ST	O	[0..1]		File Control ID	Unique identifier of a particular file. It can be echoed back in FHS-12-reference file control ID. This field has the same definition as the corresponding field in the MSH segment, but it is optional.
12	50	ST	O	[0..1]		Reference File Control ID	Field that may contain the value of FHS-11-file control ID when this file was originally transmitted. Not present if this file is being transmitted for the first time. This field has the same definition as the corresponding field in the MSH segment, but it is optional.

3.2   BHS – BATCH HEADER SEGMENT

The BHS segment is used to head a group of messages that comprise a batch.

Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
						TABLE 3.4 Batch Header Segment (BHS)	
1	1	ST	R	[1..1]		Batch Field Separator	Character used as the field separator for the rest of the message. The supported value is |, ASCII (124).
2	4	ST	R	[1..1]		Batch Encoding Characters	Four characters that always appear in the same order in this field: |^~\&|.
3	227	HD	R	[1..1]		Batch Sending Application	Unique identifier of the sending application for messaging purposes. This field has the same definition as the corresponding field in the MSH segment.
3.1	20	IS	O	[0..1]		Namespace ID	

TABLE 3.4 Batch Header Segment (BHS)							
Seq	Len	DT	Usage	Cardinality	PHIN Value Set	HL7 Element Name	Description/Comments
3.2	199	ST	R	[1..1]		Universal ID	OID for the sending application.
3.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.
4	227	HD	R	[1..1]		Batch Sending Facility	Unique identifier of the facility that sends the batch.
4.1	20	IS	O	[0..1]		Namespace ID	
4.2	199	ST	R	[1..1]		Universal ID	OID for main data source facility.
4.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.
5	227	HD	R	[1..1]		Batch Receiving Application	Unique identifier of the receiving application for messaging purposes. This field has the same definition as the corresponding field in the MSH segment.
5.1	20	IS	O	[0..1]		Namespace ID	
5.2	199	ST	R	[1..1]		Universal ID	OID for the CDC Broker Instance.
5.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'.
6	227	HD	R	[1..1]		Batch Receiving Facility	Unique identifier of the facility that is to receive the batch. This field has the same definition as the corresponding field in the MSH segment.
6.1	20	IS	O			Namespace ID	Literal value: 'PHIN', if used.
6.2	199	ST	R	[1..1]		Universal ID	Literal value: '2.16.840.1.114222'.
6.3	6	ID	R	[1..1]		Universal ID Type	Literal value: 'ISO'
7	26	TS	R	[1..1]		Batch Creation Date/Time	Date/time the batch was created by the sending system.
9	20	ST	O	[0..1]		Batch Name/ID/Type	Field that may be used by the application processing file. Its use is not further specified.
10	80	ST	O	[0..1]		Batch Comment	Free text field, the use of which is not further specified.
11	50	ST	O	[0..1]		Batch Control ID	Field that may be used to uniquely identify a particular batch. It can be echoed back in BHS-12-reference batch control ID if an answering batch is needed.
12	50	ST	O	[0..1]		Reference Batch Control D	Value of BHS-11-batch control ID when this batch was originally transmitted. Not present if this batch is being sent for the first time. See definition for BHS-11-batch control ID.

3.3 BTS – BATCH TRAILER SEGMENT

The BTS segment defines the end of a batch of messages.

TABLE 3.4 Batch Trailer Segment (BTS)							
Seq	**Len**	**DT**	**Usage**	**Cardinality**	**PHIN Value Set**	**HL7 Element Name**	**Description/Comments**
1	10	NM	O	[0..1]		Batch Message Count	This is the total number of messages contained in the batch.
2	80	ST	O	[0..1]		Batch Comment	Comment field that is not further defined in the HL7 protocol.
3	100	NM	X	[0..0]		Batch Totals	Not Supported.

3.4 FTS – FILE TRAILER SEGMENT

The FTS segment defines the end of a file (group of batches).

TABLE 3.2 File Trailer Segment (FTS)							
Seq	**Len**	**DT**	**Usage**	**Cardinality**	**PHIN Value Set**	**HL7 Element Name**	**Description/Comments**
1	10	NM	O	[0..1]		File Batch Count	The number of batches contained in this file.
2	80	ST	O	[0..1]		File Trailer Comment	The use of this free text field is not further specified.