



Release 1.5, HL7 Version 2.5.1 Implementation Guide for Immunization Messaging

Technical Guidance on the Processing Messages and Acknowledging Errors

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Learning Objectives

- **Changes in Release 1.5**
- **Processing rules for receivers**
- **Acknowledging Errors with ACK**
- **Recording IIS Authorized Organizations in HL7 messages**

Changes in Release 1.5

- **Integrated Items from Addendum for MU2**
- **Tightened and clarified constraints**
- **Documented processing rules**
- **Documented corrected and harmonized Acknowledgement messaging**
- **Rewrote Chapter 7 for query and response**

Processing Rules for Receivers -- Goals

- **Prevent incorporation of “bad” data**
- **Support accepting “good” data**
- **Minimize rejection of complete messages**
- **Encourage a harmonized approach**

Processing Rules for Receivers -- Basics

- **HL7 standards**
 - Ignore “unexpected” data
 - Return informative error messages
- **Enhancements**
 - Treat bad or badly formatted data as empty
 - Empty R field means empty segment
 - Empty RE field is NOT an error

Processing Rules for Receivers – Segments

- **Empty R segments are errors**
 - If part of segment group, segment group is empty
 - If not part of segment group, reject message (MSH, PID)

Processing Rules – example

- **RXA-5 has unrecognized CVX**
- **RXA-5 is treated as empty R**
- **RXA segment is treated as empty R**
- **Order group for this immunization is treated as empty**
- **Continue to process remaining Order groups**
- **Return Error about rejected immunization**

Processing Rules – What should happen?

- **ORC 1 (ok)**
 - RXA 1 (ok)
 - OBX 1-5 (ok)
- **ORC 2 (ok)**
 - RXA 2 (bad/empty)
 - OBX 1-5 (ok)

Processing Rules – What should happen?

- **ORC 1 (ok)**
 - RXA 1 (ok)
 - OBX 1-5 (ok)
- **ORC 2 (ok)**
 - RXA 2 (bad/empty)
 - OBX 1-5 (ok)
- **Reject Order group starting with ORC 2**

ACKnowledging an Error – Basics

- **What happened to my message?**
- **What is the error?**
- **How serious?**
- **Where is the error?**

ACK message structure

Segment	Cardinality	Usage
MSH	(1..1)	R
MSA	(1..1)	R
[{ERR}]	(0..*)	RE

ACK message -- MSA-1

Outcome	MSA-1	Meaning
No Errors	AA	Message processed and accepted (may be minor errors)
HL7 Reject error	AR	Message rejected for big 4
Application Error	AE	Message or part of message rejected

1. Unsupported message type
2. Unsupported event code
3. Unsupported processing IG
4. Unable to process for reasons unrelated to format or content

ERR Segment

SEQ	Field Name	Data Type	Usage
2	Error Location	ERL	RE
3	HL7 Error Code	CWE	R
4	Severity	ID	R
5	Application Error Code	CWE	RE
6	Application Error Parameter	ST	O
7	Diagnostic Information	TX	O
8	User Message	TX	RE

ERL – Error Location

SEQ	COMPONENT NAME	Note
1	Segment ID	# character segment ID
2	Segment Sequence	Sequential position of Segment, by type
3	Field Position	Segment sequence number
4	Field Repetition	Repetition of field in segment
5	Component Number	Component number of error
6	Sub-Component Number	Sub-component number

Error Severity

Value	Description	Comment
I	Information	Transaction successful, but includes returned information.
W	Warning	Transaction successful, but there may be issues. These may include non-fatal errors with potential for loss of data.
E	Error	Transaction was not successful. The application rejected data that it views as important. This could include required fields or the entire message. The sender should be alerted to review and correct the message.

Application Error Codes (0533)

Status code	Status text	Description/Comment
1	Illogical Date error	Date conflicts with another date in the message.
2	Invalid Date	Date is not valid or lacks required precision.
3	Illogical Value error	The value conflicts with other data in the message
4	Invalid value	The value is not valid. This applies for fields that are not associated with a table of values.
5	Table value not found	The value is not found in the associated table.
6	Required observation missing	A required observation, such as VFC eligibility status, is missing.

Example ERR – Unsupported version

- MSA|AR|9299381<CR>
- ERR||MSH^1^12|203^unsupported version
id^HL70357|E||||Unsupported HL7 Version ID—
Message rejected<CR>

Example ERR – Missing R Field / R segment

- MSA|AE|9299381<CR>
- ERR||PID^5|101^required field
missing^HL70357|E|7^required data
missing^HL70533||||Patient name is required <CR>
- ERR||PID|100^required segment
missing^HL70357|E||||PID is required segment.
Message rejected <CR>

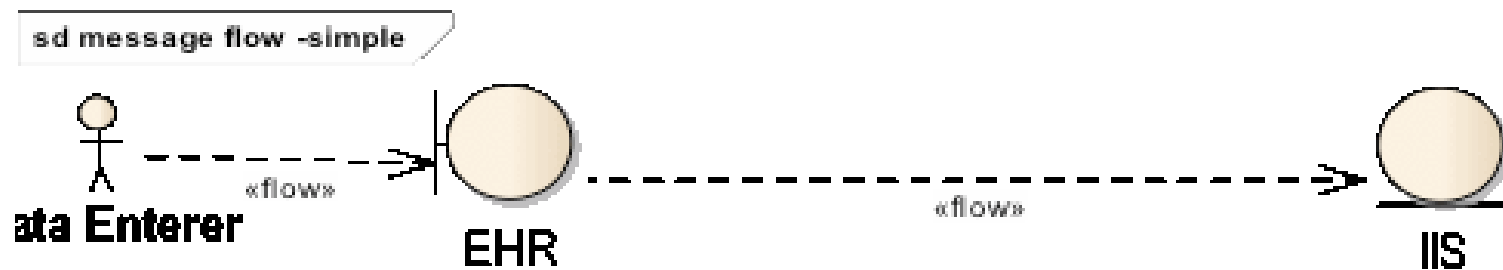
Example ERR – Missing R Field

- MSA|AE|9299381<CR>
- ERR||NK1^1^3|101^required field
missing^HL70357|E|7^required data
missing^HL70533||||Relationship missing --
segment rejected <CR>
- **Might send informative ERR about RE
segment rejection**

Recording Organizations in HL7 Message – Why?

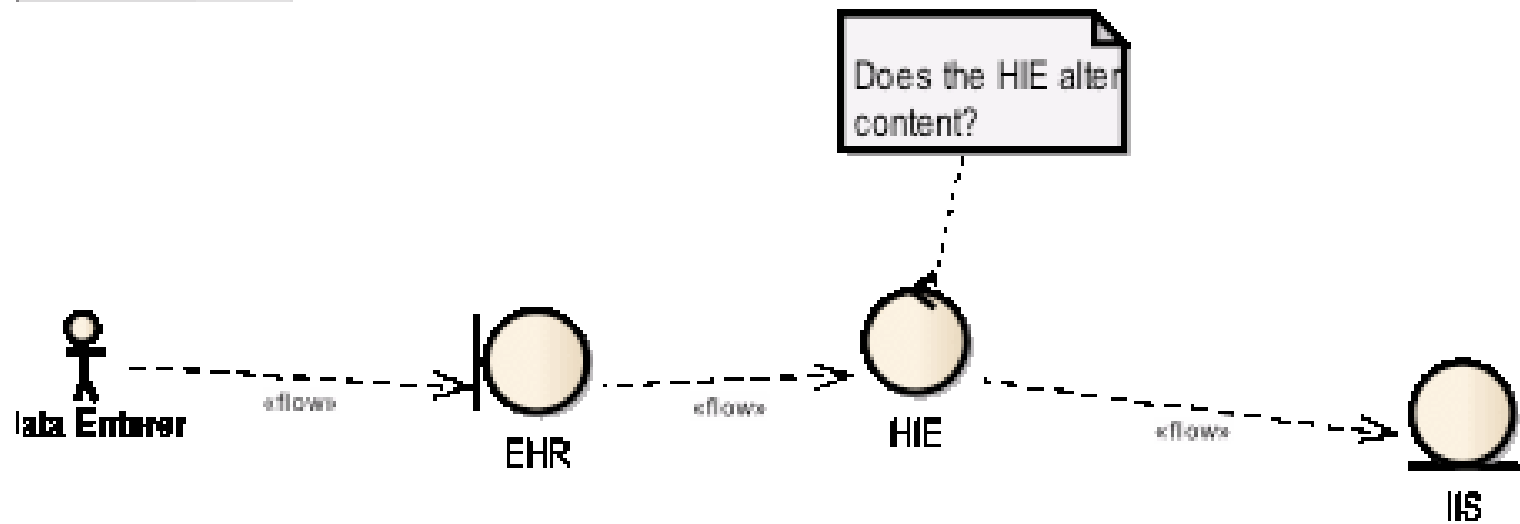
- **Who can Modify a record?**
- **Who can “see” patient who won’t share?**
- **Which bucket of vaccine does a dose come from?**
- **Who can be included in a report (coverage or Recall / reminder)**

Data Flow - Simple



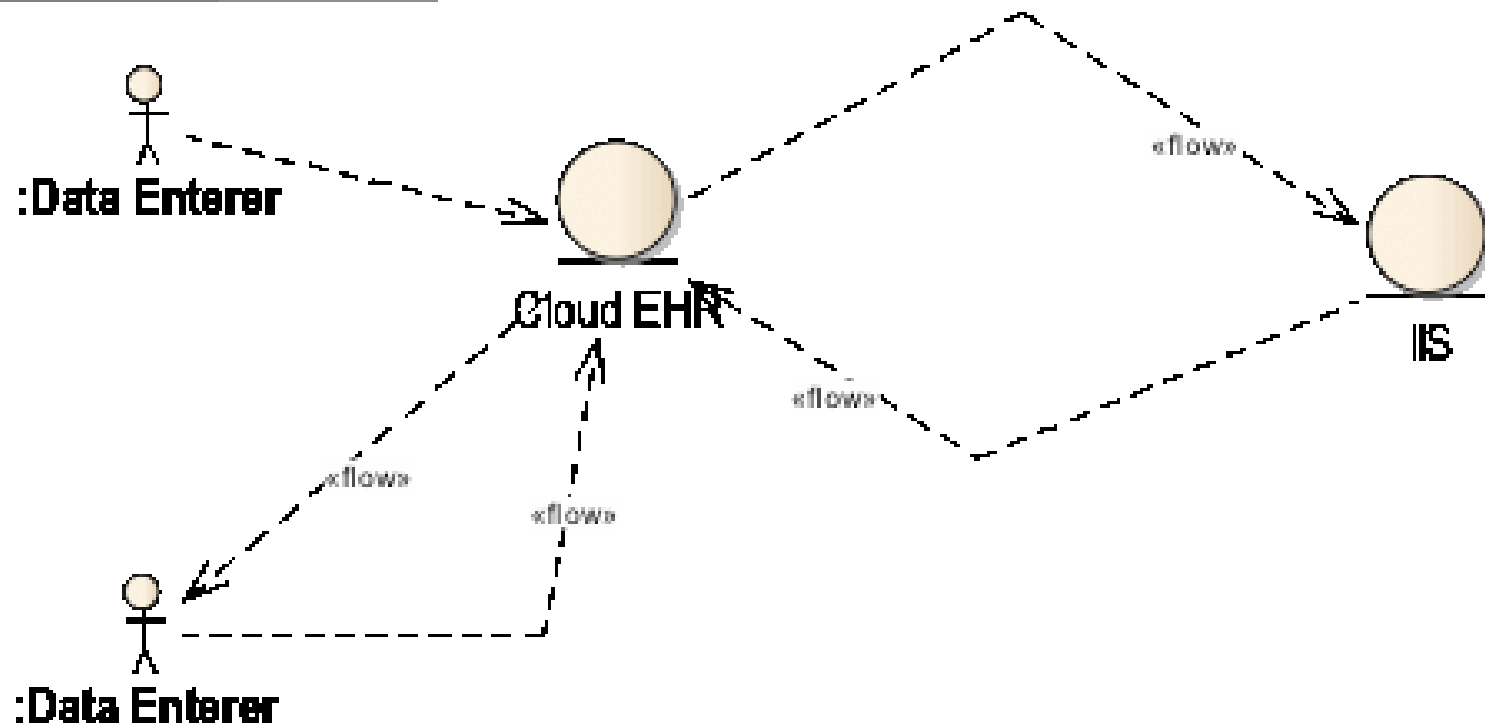
Data Flow HIE

sd message flow-HIE



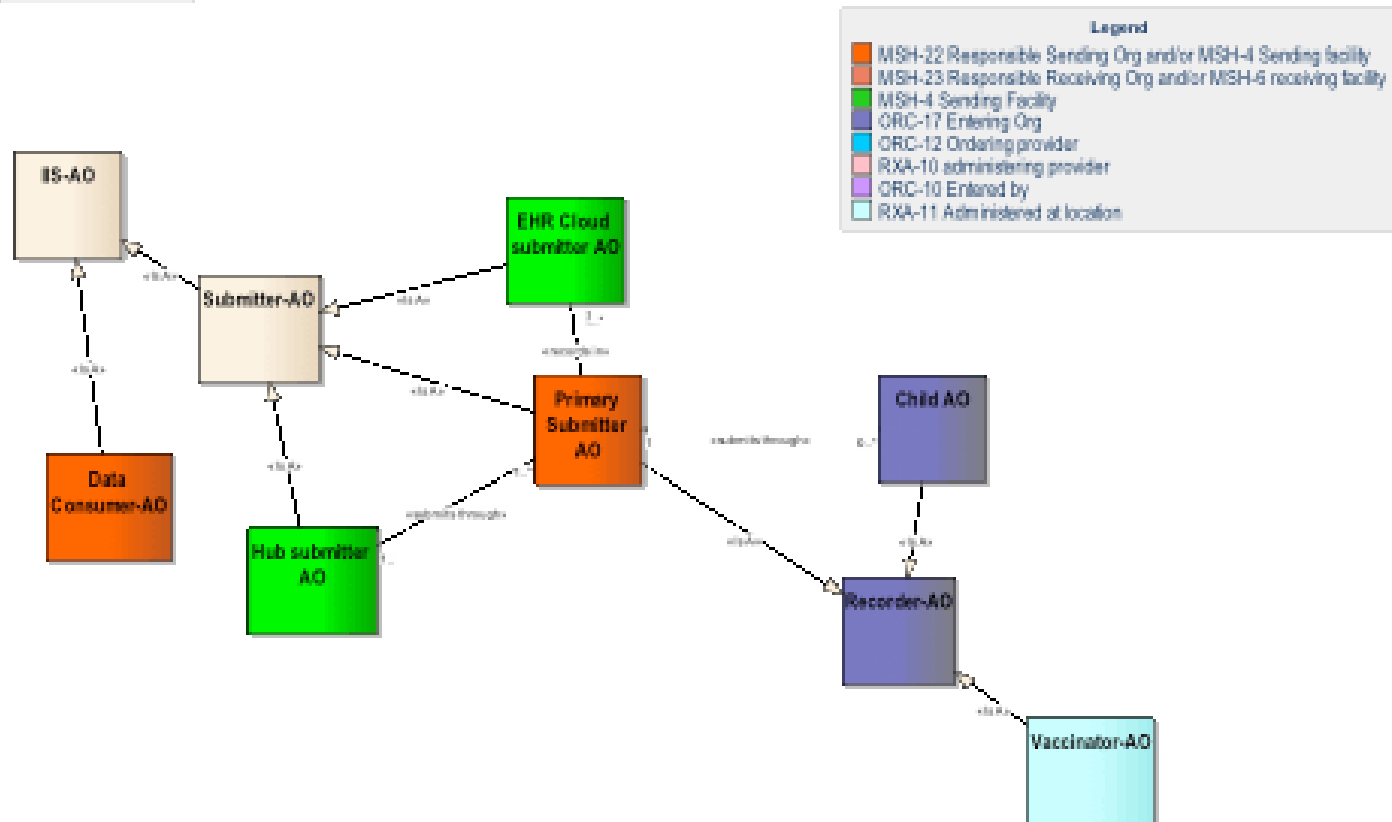
Data Flow – Cloud EHR

sd message flow – cloud EHR



Relationship of Actor Roles

4.9. Relationships of Upper Wings. 11



What does this mean?

	MSH-4	MSH-22	ORC-17	RXA-11
MyORG to IIS	MyORG	MyORG	MyORG	MyORG or MyORG Clinic
MyORG to HIE to IIS	HIE or MyORG	MyORG	MyORG	MyORG or MyORG Clinic
MyORG via Cloud EHR	Cloud EHR	MyORG	MyORG	MyORG or MyORG Clinic
Child Org to IIS	Child ORG	Child Org	Child ORG	Child Orgor Child Org clinic

Questions?

- **Alison will read the questions that have been submitted through the presentation.**
- **Other questions?**
- **Query and Response webinar April 14, 3:00 to 4:00 PM**