



# **Release 1.5, HL7 Version 2.5.1 Implementation Guide for Immunization Messaging**

## **Technical Guidance on Query and Response**

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# Learning Objectives

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- **Understand the objectives of the 2 queries**
- **List the query parameters and success factors**
- **Understand the goals of the response messages**
- **Identify the acknowledgement messages uses**

# Two Queries with Two Goals

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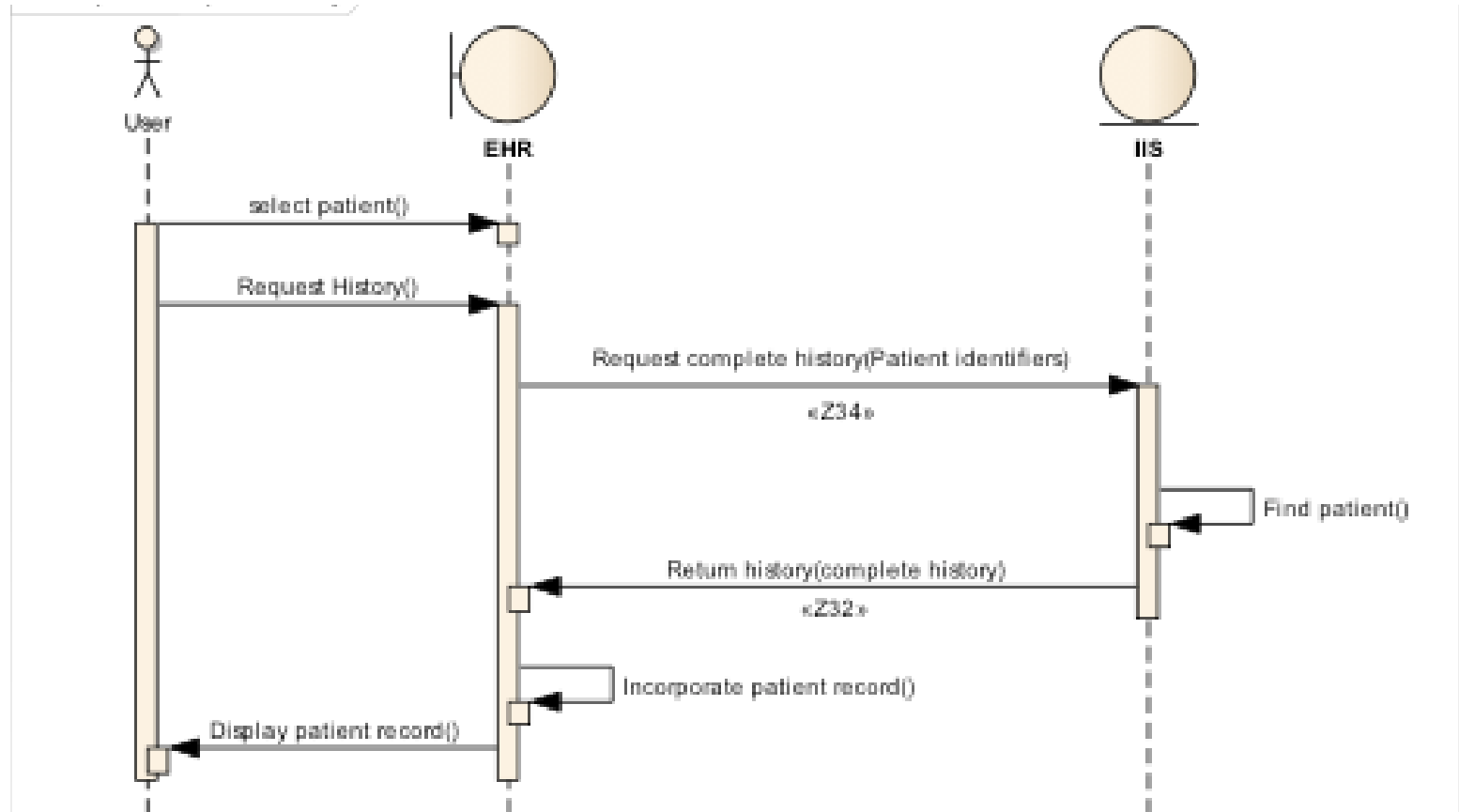
- **Request Complete Immunization History**
- **Request Evaluated History and Forecast**

# Request Complete History

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- **Goal:** The goal of this use case is to request and receive a complete immunization history from another system.
- **Precondition:** A user or other actor requests that the sending system send a request for an immunization history using demographic information and/or other identifiers.
- **Post-condition:** The requesting system receives an immunization history. Note that if no matches are found or there are errors, no immunization history will be returned. The history is typically incorporated into the requesting system.

# Request Complete History



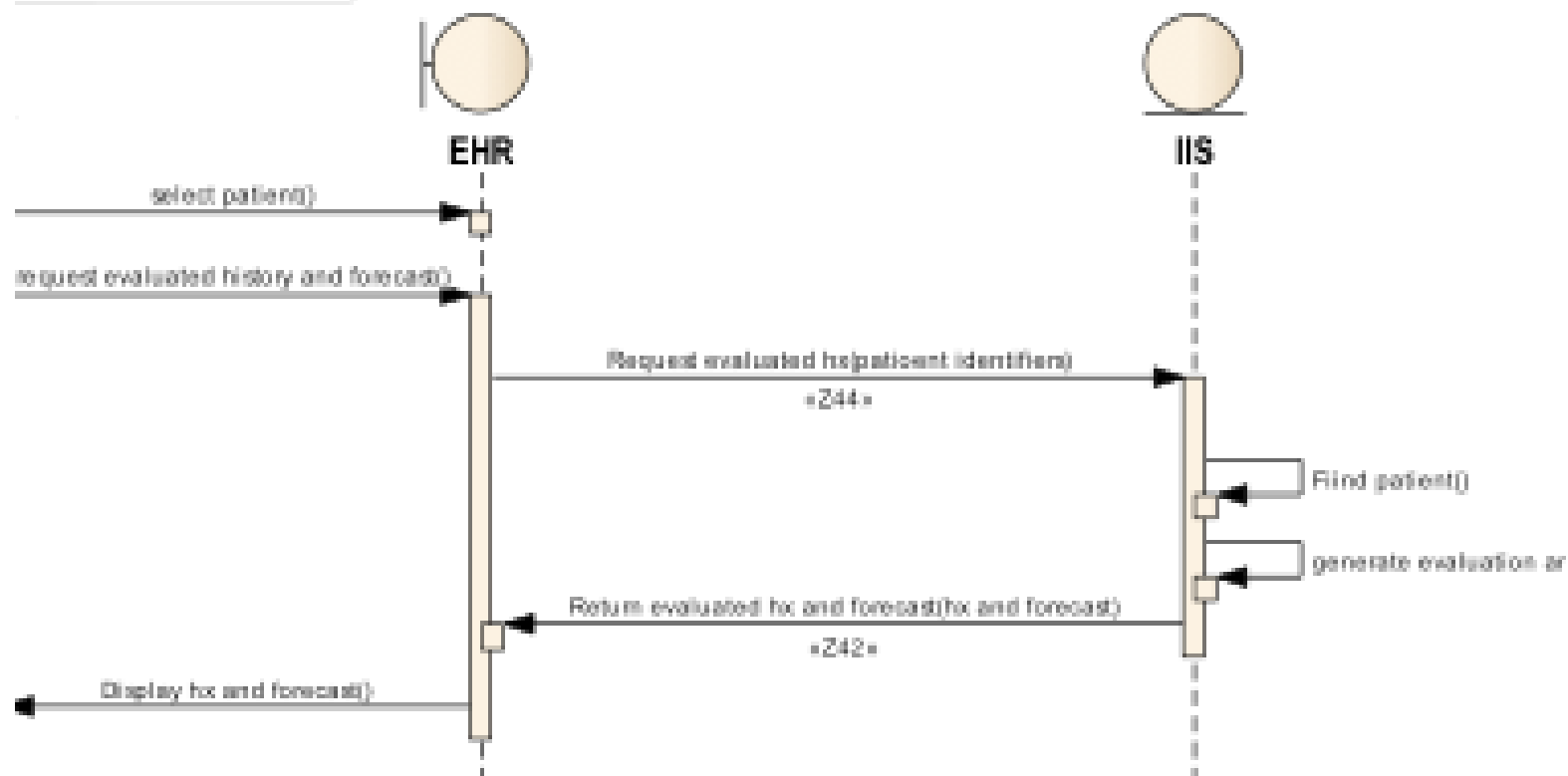
# Request Evaluated Immunization History and Forecast

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- **Goal:** The goal of this use case is to request and receive an evaluated immunization history and forecast of next doses due from another system.
- **Precondition:** A user or other actor requests that the sending system send a request for an evaluated history using demographic information and/or other identifiers.
- **Post-condition:** The requesting system receives an evaluated immunization history and forecast. Note that if no matches are found or there are errors, no immunization history will be returned. Typically, this is presented to the person who requested the evaluated history and forecast.

# Request Evaluated History and Forecast

evaluated history and forecast





# Complete History

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- **Complete demographics**
- **Detailed Immunization records**
- **Observations**
  - **Reactions**
  - **Contraindications**

# Query for Complete Immunization History

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- **Patient Id list**
- **Patient Name**
- **Date of Birth**
- **Mother's maiden name**
- **Home address**
- **Home Phone**
- **Multiple birth indicator**

# Patient ID is Powerful

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- **IIS track ID from provider organization**
- **EHR track IIS ID**
- **CX-1 ID**
- **CX-4 Assigning Authority**
- **CX-5 ID type**

# Response Possibilities

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- **Return evaluated history (Z32)**
  - Exact match
- **Return candidate match list (Z31)**
- **Return acknowledgement without history (Z33)**
  - Too many matches
  - No match
  - Error

# RSP^K11 top

Segment	Cardinality	Usage
MSH	[1..1]	R
MSA	[1..1]	R
[ERR]	[0..1]	RE
QAK	[1..1]	R
QPD	[1..1]	R

# Return Complete History (Z32)

Segment	Cardinality	Usage
PID	[1..1]	R
[PD1 ]	[0..1]	RE
[{NK1 }]	[0..*]	RE
[PV1]	[0..1]	O
[IN1]	[0..1]	O
[{	[0..*]	RE
ORC	[1..1]	R
RXA	[1..1]	R
[RXR ]	[0..1]	RE
[{	[0..*]	RE
OBX	[1..1]	R
[NTE ]		
}} }	[0..1]	RE

# Return Candidate List

Segment	Cardinality	Usage
MSH	[1..1]	R
MSA	[1..1]	R
[ERR]	[0..1]	RE
QAK	[1..1]	R
QPD	[1..1]	R
Response group	[1..1]	R
{	[1..*]	R
PID	[1..1]	R
[PD1 ]	[0..1]	RE
[{NK1 }]	[0..*]	O
}		

# Values for QAK-2

Value	Description	Comment
OK	Data found, no errors (this is the default)	Similar to AA in table HL70008
NF	No data found, no errors	
AE	Application error	Query had an error in content of format.
AR	Application reject	Message was rejected because one of the following occurred: <ul style="list-style-type: none"><li>• Unsupported message type</li><li>• Unsupported event code</li><li>• Unsupported processing ID</li><li>• Unable to process for reasons unrelated for format or content</li></ul>
TM	Too many candidates found	



# Parameters for Query Evaluated History

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- **\* Patient Id list**
- **Patient Name**
- **Date of Birth**
- **Mother's maiden name**
- **Home address**
- **Home Phone**
- **Multiple birth indicator**

# RSP^K11 top

Segment	Cardinality	Usage
MSH	[1..1]	R
MSA	[1..1]	R
[ERR]	[0..1]	RE
QAK	[1..1]	R
QPD	[1..1]	R

# Return Evaluated History and Forecast (Z42)

Segment	Cardinality	Usage
PID	[1..1]	R
{	[1..*]	R
ORC	[0..1]	O
RXA	[1..1]	R
[RXR ]	[0..1]	RE
[{	[1..*]	R
OBX	[1..1]	R
}]		
}		

# Response Possibilities

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- **Return evaluated history (Z42)**
  - Exact match
- **Return acknowledgement without history (Z33)**
  - Multiple matches
  - No match
  - Error

# Evaluated History and Forecast

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- **Minimal demographics**
- **Immunization records**
  - **Vaccine**
  - **Vaccination date**
  - **Validity**
    - **Dose number in series**
- **Forecast of next doses due**

# Example Historical Dose

- **RXA|0|1|20090415||31^Hep B Peds NOS^CVX|999|||01^historical record^NIP0001|||||| <CR>**
- **OBX|1|CE|30956-7^vaccine type^LN|1|31^Hep B Peds NOS^CVX |||||F<CR>**
- **OBX|2|CE|59779-9^Immunization Schedule used^LN|1|VXC16^ACIP^CDCPHINVS|||||F|||200900531<CR>**
- **OBX|3|NM|30973-2^dose number in series^LN|1|1|||||F|||200900531<CR>**
- **OBX|4|NM|59782-3^number of doses in series^LN|1|3|||||F|||20090531<CR>**

# Example administered dose

- **RXA|0|1|20090731||48^HIB PRP-T^CVX|0.5|ML^^UCUM||00^new immunization record^NIP0001|^Sticker^Nurse|^^^DCS\_DC||||33k2a||PMC^sanofi^MVX|||CP<CR>**
- **OBX|1|CE|30956-7^vaccine type^LN|1|17^HIB NOS^CVX |||||F<CR>**
- **OBX|2|CE|59779-9^Immunization Schedule used^LN|1|VXC16^ACIP^CDCPHINVS|||||F||20090731<CR>**
- **OBX|3|NM|30973-2^dose number in series^LN|1|1|||||F<CR>**
- **OBX|8|NM|59782-3^number of doses in series^LN|2|4|||||F<CR>**

# Example Forecast

- **RXA|0|1|20091031|20091031|998^no vaccine  
admin^CVX|999||| |||||NA <CR>**
- **OBX|22|CE|30956-7^vaccine type^LN|1|31^Hep B Peds  
NOS^CVX |||||F<CR>**
- **OBX|23|CE|59779-9^Immunization Schedule  
used^LN|1|VXC16^ACIP^CDCPHINVS|||||F<CR>**
- **OBX|24|DT|30980-7^Date vaccination  
due^LN|1|20091015|||||F<CR>**



# Return acknowledgement

- MSH|^~\&|MYIIS|MyStateIIS||MYEHR|20091130||RSP^K11^R  
SP\_K11|7731029|P|2.5.1|||||||Z33^  
CDCPHINVS|MyStateIIS|MYEHR<CR>
- MSA|AA|793543<CR>
- QAK|37374859|NF|Z44^request evaluated  
history^CDCPHINVS<CR>
- QPD| Z34^Request Immunization History^CDCPHINVS  
|37374859|123456^^^MYEHR^MR|Child^Bobbie^Q^^^L|Que  
^Suzy^^^^M|20050512|M|10 East Main  
St^^Myfaircity^GA^^^L<CR>

# Questions?

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