Iowa Immunization Registry Information System (IRIS)

HL7 2.4 – Real-time Transfer Specification

Version 1.0

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Introduction

Thank you for your interest in electronic data exchange with IRIS. Getting immunization data into IRIS is important for your clinic and for the individuals you serve. IRIS is interested in finding the least burdensome method for your organization to submit data to IRIS.

Iowa's Immunization Registry Information System, IRIS, has made available an interactive user interface on the World Wide Web for authorized users to enter, query, and update patient immunization records. The Web interface makes IRIS information and functions available on desktops around the state. However, some immunization providers already store and process similar data in their own information systems and may wish to keep using those systems while also participating in the statewide IIS. Others may have different needs and may decide they don't want to enter data into two diverse systems. For many clinics electronic transfer is the preferred method to accomplish this goal.

This document explains required and preferred files and data elements and cites several links to assist you in determining if electronic data transfer is a viable option for your clinic. Please share this document with technical staff and/or your software vendor.

Data Formats Accepted

Data is typically pulled from Electronic Health Record (EHR) systems or from Practice Management systems.

IRIS currently accepts the following electronic file types:
- Fixed format flat text files
- Health Level Seven (HL7) Version 2.4 standard files
- Health Level Seven (HL7) Version 2.4 Real Time Transfer

IRIS accepts and transmits the Health Level Seven (HL7) Version 2.4 Real Time Transfer messaging for submitting patient and immunization information to IRIS. This documentation deals with submitting an HL7 2.4 formatted VXQ^V01 message (Query for Vaccination Record) and a VXU^V04 message (Unsolicited Vaccination Update) and receiving from IRIS the resulting HL7 2.4 Response Message in real time.

Real Time Processing

"Real time" processing refers to the ability to transmit an HL7 2.4 formatted VXQ^V01 Message (Query for Vaccination Record) and a VXU^V04 Message (Unsolicited Vaccination Update) and receive from IRIS the resulting HL7 2.4 Response Message in real time. A provider organization will query the registry to get information on a certain client (i.e. send an HL7 2.4 VXQ^V01 message) and will receive an HL7 2.4 Message Response (i.e. VXR^V03, VXX^V02, ACK or QAK) to that query in real time.

Web Services

Web Services will require installing a working web service client to enable interoperability between our java-based, real-time codebase, and the various web service clients designed/implemented by the participants. The underlying web service operation will be defined to be generic, and can exchange HL7 2.4 Messages and their appropriate Message Responses. The HL7 2.4 vaccination query (VXQ^V01) or HL7 2.4 Unsolicited Vaccination Update (VXU^V04) transactions and their Response Messages will be utilized under the same web service interface. The web services security and other technologies will be communicated via Web Services Policy statements, in addition to Web Services Security Policy statements which will in our case be contained with the WSDL document for the defined web service.

IRIS will use Simple Object Access Protocol (SOAP) to exchange messages using an Extensible Markup Language (XML) format. To get a more in-depth understanding of the technologies referenced above, refer to the following brief tutorial: http://www.w3schools.com/soap/default.asp

Web services are for only one message and a single response to that message. To get a more in-depth understanding of the technologies referenced above, refer to the following brief tutorial: http://www.w3schools.com/webservices/default.asp

IRIS will make available to providers the CDC Web Services Description Language (WSDL). The WSDL will contain information describing the publicly accessible ports that will be used by IRIS to exchange HL7 messages. Providers will use this information to establish communication with IRIS and exchange HL7 messages.

Unbundled (Username token) Providers will need to create their own WS Client. Components that IRIS will provide include:
    WSDL
    Username/password
    Signed SSL

PHINMS

1. Obtain or develop, install and configure a client interface capable of transmitting an HL7 formatted Message file via the Electronic Business using eXtensible Markup Language (ebXML) infrastructure to securely transmit public health information over the Internet to the Public Health Information Network Messaging System (PHINMS) Message Receiver.

    The CDC provides, free of charge, their PHINMS client Message Sender for communication with their PHINMS Message Receiver. Alternatively, the provider may choose to develop their own ebXML Message Sender to communicate with the PHINMS Message Receiver.

2. The provider organization will submit a text file containing HL7 2.4 formatted VXQ^V01 and VXU^V04 Messages (up to 100 messages are accepted) to be delivered via their ebXML-based client Message Sender to the IRIS PHINMS Message Receiver. IRIS will process the Messages and send back via the PHINMS Message Receiver a file of HL7 2.4 formatted Response Messages, one per associated query or vaccination update request.

3. It is the responsibility of the provider organization to obtain or develop, install and configure an ebXML client Message Sender for sending the HL7 2.4 formatted Message Requests and receiving the resulting HL7 2.4 formatted Message Response file generated by IRIS.

4. The provider organization will need to obtain from IRIS a CPA (Collaboration Protocol Agreement) for access to the IRIS real time system. This is a file that contains information that will be used during installation of the PHINMS Client software. The provider organization will need to obtain the IRIS SSL certificate for secure access. See the PHINMS Installation Guide for detailed instructions. Please note: your certificate must be renewed annually. **IRIS PROVIDES NEITHER INSTALLATION, CONFIGURATION, NOR TECHNICAL SUPPORT FOR THE EBXML CLIENT MESSAGE SENDER.**

Full documentation and contact information for the PHINMS product may be found at the following link: http://www.cdc.gov/phin/

Full documentation for the ebXML specification may be found at the following link: http://www.ebxml.org/specs

PHINMS is ebXML version 2.0 compliant.

Outline of real time message types and segments
The following section outlines the various message types that are transferred in real time files.

Real time files that provider organizations send to IRIS:

VXU - Unsolicited Vaccination Update
MSH	Message Header
PID	Patient Identification
[PD1]	Patient Additional Demographic
[{NK1}]	Next of Kin / Associated Parties
RXA	Pharmacy / Treatment Administration (at least ONE RXA is REQUIRED by IRIS)
[RXR]	Pharmacy / Treatment Route (Only one RXR per RXA segment)
[{OBX}]	Observation/Result

VXQ - Query for Vaccination Record
MSH	Message Header Segment
QRD	Query Definition Segment
QRF	Query Filter Segment (IRIS has made this segment REQUIRED)

Real time (response) files that IRIS sends to provider organizations:

VXR - Response TO Vaccination Query Returning the Vaccination Record
MSH	Message Header Segment (One per message)
MSA	Message Acknowledgment Segment (One per message)
QRD	Query Definition Segment (One per message)
QRF	Query Filter Segment (One per message—required by IRIS)
PID	Patient Identification Segment (One per matching client)
[PD1]	Additional Demographics
[{NK1}]	Next of Kin Segment (Optional, zero or more per matching client)
RXA	Pharmacy Administration
[RXR]	Pharmacy Route
[{OBX}]	Observation/Result Contraindications or Reactions
[{OBX}]	Observation/Result Vaccines Due Next

VXX - Response TO Vaccination Query (Returning Multiple PID Matches)
MSH	Message Header Segment (One per message)
MSA	Message Acknowledgment Segment (One per message)
QRD	Query Definition Segment (One per message)
QRF	Query Filter Segment (One per message—required by IRIS)
PID	Patient Identification Segment (One per matching client)
[{NK1}]	Next of Kin Segment (Optional, zero or more per matching client)

ACK - General Acknowledgment
MSH	Message Header Segment
MSA	Message Acknowledgment Segment
[ERR]	Error

QCK - Query General Acknowledgment
MSH	Message Header Segment
MSA	Message Acknowledgment Segment
[ERR]	Error
[QAK]	Query Acknowledgment Segment

Details of real time message types and segments

The message segments below are needed to construct message types that are used by IRIS. Each segment is given a brief description excerpted from the HL7 standard. The tables define the fields that make up each segment.

This Real time Transfer Specification only provides details regarding the messages and segments that are specific to real time messages. **Messages and segments that are common between real time HL7 messaging and batch HL7 messaging are detailed in the** IRIS - HL7 General Transfer Specification.

Since IRIS does not use all the fields that HL7 defines, there can be gaps in the ordinal sequence of fields. Following HL7 rules, the gaps do not diminish the number of field separators within the segment. For example, if the second and third fields in a segment are not present, their field separators remain in order to indicate that the next field present is the fourth: field1|||field4.

Batch Message Headers (i.e. FHS, BHS) and footers (i.e. FTS, BTS) are NOT required for Real time processing.

MSH – Message Header Segment

For VXU and VXQ message types, the MSH segment must be constructed according to HL7 format specifications (refer to the HL7 2.4 - General Transfer Specification). For Real time processing, IRIS limits the number of MSH segments that can be processed in a single file. Files containing more than 100 MSH segments will be rejected and an ACK message will be generated, informing the provider that 100 is the maximum number of MSH segments that IRIS accepts for Real time processing. However when using Web Services as a transport, IRIS only accepts one MSH record at a time; multiple MSH segments will cause messages to be rejected.

VXU – Unsolicited Vaccination Record Update

The VXU message is used for sending client demographic and immunization specific data. This message type can be sent via real time processing. VXU segments should be constructed according to the HL7 format specifications (refer to the HL7 2.4 - General Transfer Specification). A VXU message must be received in the HL7 2.4 format; IRIS does not support prior HL7 versions for Real time processing. IRIS validates the version by reading the MSH-12 field. A VXU message must contain |2.4^^| in MSH-12.

Immunization deletions can be submitted for both batch HL7 2.4 and Real time submissions. To indicate a deletion, the RXA-21 field <u>must</u> be populated with a value of "D". Below is an example of a RXA deletion segment. If the number of deletions received through batch exceeds 5 percent of the total number of immunizations or more than 50 immunizations are marked for deletion, IRIS will reject the file.

RXA|0|999|19860715|19860715|^^^90718^Td^CPT|0|||05^^^^^||^^^208^^^^^^^^^^^|||||||||D|

VXQ – Query for Vaccination Record

When a health care provider (participating in an immunization registry) needs to obtain a complete patient vaccination record, a VXQ (query) is sent to IRIS for the definitive (last updated) immunization record. The three segments that make up a VXQ message are the MSH (message header), QRD (query definition) and QRF (query filter). For a VXQ message, the MSH-09 field must contain |VXQ^V01| and the segments must be in the following sequence order:

MSH|^~\&|QUERYINGORG|QUERYINGORG|IRIS|IRIS|200212091511||VXQ^V01|0000001|P^|2.4||||ER
QRD|19970522|R|I|000000001|||25RD|01^KENNEDY^JOHN^FITZGERALD^JR|VXI|^VACCINE INFORMATION^HL700048|^IRIS|
QRF|IRIS||||256946789~19900607~MA~MA99999999~88888888~KENNEDY^JACQUELINE^LEE~BOUVIER~8986667 25~KENNEDY^JOHN^FITZGERALD~822546618|

The QRD and QRF segments are outlined in detail below.

QRD – Query Definition Segment

Used to define a query.

SEQ	LEN	DT	R/O	RP/#	TBL#	ELEMENT NAME
1	26	TS	R			Query date/time
2	1	ID	R		0106	Query Format Code
3	1	ID	R		0091	Query Priority
4	10	ST	R			Query ID
5	1	ID	O		0107	Deferred response type
6	26	TS	O			Deferred response date/time
7	10	CQ	R		0126	Quantity limited request
8	60	XCN	R	Y		Who subject filter
9	60	CE	R	Y	0048	What subject filter
10	60	CE	R	Y		What department data code
11	20	CM	O	Y		What data code value qualifier
12	1	ID	O		0108	Query results level

Field Notes:

QRD-1   Date the query was generated by the application program. IRIS requires this field and verifies that a valid date is received. The minimum format of YYYYMMDD is required. A null/invalid value results in message rejection.

QRD-2   Query/response format code. IRIS requires this field and only accepts a value of "R". A null/invalid value results in message rejection.

QRD-3   Time frame in which the response is expected. IRIS requires this field and only accepts a value of "I". A null/invalid value results in message rejection.

QRD-4   Unique identifier for the query assigned by the querying application. IRIS requires this field and null/invalid values result in message rejection. This field is returned intact by IRIS in a response (VXR or VXX).

QRD-5   Used to indicate a deferred response. This is an optional field. IRIS does not support a deferred response.

QRD-6   Used to indicate the date/time of the deferred response. This is an optional field. IRIS does not support a deferred response.

QRD-7   Maximum length of the response that can be accepted by the requesting system. The 1st component is a numerical value, and the 2nd component accepts only the value "RD" (i.e. |5RD|). A null/invalid value in either sub-component results in message rejection. IRIS will interpret the units as the maximum number of client matching records to be returned via a VXX response message.
*Note: IRIS will return a <u>maximum</u> of 10 records per query message submitted. The value 0 (zero) or any number 10 or greater will result in the maximum of 10 matches returned by IRIS.

QRD-8   Identifies the subject of the query or whom the inquiry is about. The 2nd component (last name) is required by IRIS. If the first or last name OR both names are missing (regardless if there are repeating full names after the first) it results in message rejection. IRIS supports repetition of this field.

QRD-9   Describes the kind of information required to satisfy the request. IRIS requires this field and a

QRD-10   Identifies the "what" department data code. IRIS requires this field and supports repetition of it.
Null/invalid values will result in message rejection.

QRD-11   Further refines the inquiry by data code qualifiers by providing a window or range. This is an
optional and repeatable field.

QRD-12   Used to control level of detail in results. This field is optional and will be populated by IRIS with
the total count of PID matches found in IRIS when Query results in a VXX Response Message.

Example:
QRD|19970522|R|I|000000001|||25RD|01^KENNEDY^JOHN^FITZGERALD^JR|VXI^VACCINE
INFORMATION^HL700048|^IRIS||20

QRF – Query Filter Segment – (REQUIRED by IRIS)

Used with the QRD segment to further refine the content of a query.

SEQ	LEN	DT	R/O	RP/#	TBL#	ELEMENT NAME
1	20	ST	R	Y		Where subject filter
2	26	TS	O			When data start date/time
3	26	TS	O			When data end date/time
4	60	ST	O	Y		What user qualifier
5	60	ST	M	Y		Other query subject filter
6	12	ID	O	Y	0156	Which data/time qualifier
7	12	ID	O	Y	0157	Which date/time status qualifier
8	12	ID	O	Y	0158	Date/time selection qualifier
9	60	TQ	O	Y		When quantity/timing qualifier

Field Notes:

QRF-1   Identifies the department, system or subsystem to which the query pertains. IRIS requires this field. A
null/invalid value results in message rejection.

QRF-2   Data representing dates and times (registries do not value this component). This is an optional field.

QRF-3   Data representing dates and times (registries do not value this component). This is an optional field.

QRF-4   An Identifier to further define characteristics of the data of interest. This is an optional field.

QRF-5   This field is used by registries to transmit up to ten separate search "keys". IRIS requires this field and does
NOT support repetition. The 2nd component (patient birth date) is required by IRIS. A null/invalid format
results in message rejection. Format is YYYYMMDD.

        The "keys" within QRF-5 are ordered and separated by the repeat delimiter "~". If a "key" has no value, it is
left empty with the repeat delimiter holding its place. Order of data "keys" is as follows:

        <patient Social Security Number>**~<patient birth date>**~<patient birth state>~<patient birth registration
number>~<patient Medicaid number>~<mother's name last^**first**^middle>~<**mother's maiden name**>~<mother's
Social Security Number>~<father's name>~<father's Social Security Number>.

        Example:
        QRF|IRIS||||234567890~**19900607**~OR~OR9999~MA8888~SMITH^**JANE**^LEE~**DOE**~234567891~SMITH^JOHN^J
O~234567892|

VXR – Response TO Vaccination Query (Returning the Vaccination Record)

When a patient has been uniquely identified (there is only one "match" to the query), the response to the query is a VXR^V03 message that is generated and sent back to the querying organization.

IRIS will only return vaccines the patient is recommended to receive while evaluating the vaccine for age restrictions (minimum age and interval), contraindications and other such rules. IRIS will evaluate vaccines according to CDC ACIP schedule.

VXR segment detail

Several segments make up the VXR message type. The following segments have been outlined previously in this document and will follow the same formatting for the VXR message type.

MSH, MSA, QRD, QRF, PID, PD1, NK1, RXA, RXR, OBX (Observation/Result Contraindications or Reactions)

In addition to supplying the querying organization with client specific demographic and immunization data (contained in the above segments), the VXR message also specifies "Observation/Result Vaccines Due Next" information. This information is supplied by generating three OBX segments per 1 vaccine recommendation. The set ID (OBX-01) for each OBX triplet will be the sequential set number uniquely identifying the OBX set for an individual recommended vaccine. IRIS will report the Vaccination Schedule in the OBX segments through the specification of the LOINC code 30979-9 (Vaccines Due Next) and its sub-components in OBX-03. IRIS requires specification of OBX-05 when OBX-03 is specified and valid. Further, IRIS has superimposed a CE (Coded Element) data type on the OBX-05 field. The corresponding observation values will be specified in OBX-05. Combinations are as follows:

OBX-03	**OBX-05**
30979-9	HL70292 (Codes for vaccines administered CVX)
30979-9&30980-7	Date Vaccine Due (IRIS provides date recommended)
30979-9&30981-5	Earliest date to give (IRIS provides)

Below you'll find an example of what a recommendation might look like in a VXR message response (see **bolded** OBX segments below).

MSH|^~\&||IRIS||QUERYINGORG|20040101101||VXR^V04|001|P^|2.4|||ER
MSA|AA|001|
QRD|20040120|R|I|001|||1RD|01^LAST NAME^FIRST^MIDDLE^JR|VXI^VACCINE INFORMATION^HL700048|^IRIS||1|
QRF|IRIS||||~19900607~WI~STATEBIR#~MA#~KENNEDY^JACQUELINE^LEE~BOUVIER~898666725~KENNEDY^JOH
N^FITZGERALD~822546618~587421369~19630119~MN~MN99999999~88888888~DOE^JANE^ROSE~SMITH~999
999999~SMITH^JOHN^I~999999999|
PID||1912484^^^^^|123^^^^PI^||LAST NAME^FIRST^MIDDLE^JR^^||19900607|M||^^^^^||||||||||||^^^^^|^^||||||
PD1|||||||||||01^^^^^|Y||||A|||
NK1|1|Hamus^Eugene^J^Sr^^|SEL^SELF^HL70063|12017 N ROCK INN
RD^^AUBURNDALE^WI^54412^USA^^^^|(715)384-8649^^^^^^^^|
RXA|0|999|20021001|20021001|^^^90721^Diphtheria, Tetanus, Acellular Pertussis + HIB^CPT|0|||^Health Assessment
& Promotion (HAP)^Y|||||||||^^HL70227||||||200210141430
RXR|IM^^^^^|LA^^^^^
OBX|1|CE|30979-9^Vaccine due next^LN|1|20^DTAP^CVX^^^|
OBX|1|TS|30979-9&30980-7^Date vaccine due^LN|1|20040130^^^^^|
OBX|1|NM|30979-9&30981-5^Earliest date to give^LN|1|20040111^^^^^|

VXX – Response TO Vaccination Query (Returning Multiple PID Matches)

When a health care provider participating in IRIS needs to obtain a complete patient vaccination record, a query (VXQ message) is sent to IRIS for the definitive (last updated) immunization record. When a query results in multiple patient matches, the VXX message response is generated. The VXX contains multiple clients and their demographic information but does not contain their vaccination information. The number of matches that IRIS generates will depend on what is specified in the first component of the incoming VXQ (QRD-07 Quantity Limited request field). IRIS will interpret the quantity specified in this field as the maximum number of client matches that the requester desires.

For example:
If the query results in 100 matches and the original quantity specified in QRD-7 was 10, then IRIS generates 10 PID (and if applicable, associated NK1) segments in the VXX response message.

The following scenarios outline when a VXX message will be sent back when multiple matches are found, but some of the matches have been locked.

Scenario 1:
The following paragraph holds true, assuming that the VXQ has 0 in QRD-7 (meaning that the provider organization wants the maximum number of clients sent back).

If IRIS matches 10 clients and 8 of those clients have locked records, then only 2 clients will be sent back in the VXX message; the remaining 8 clients (having locked records) will not be sent back. The QRD-12 field (in the VXX) will reflect the total number of matches found in IRIS (10 in our example) and the querying organization will need to assume that the 8 clients that were not returned had locked records.

> **Example:**
>
> **VXQ**
> MSH|^~\&||IRIS||QUERYINGORG|20040101101||VXQ^V01|001|P^|2.4|||ER
> QRD|20040120|R|I|01|||0RD|01^SALAMI^STUART^S^^|VXI^VACCINE
> INFORMATION^HL700048|^IRIS||0|
> QRF|IRIS||||~19900607~|
>
> **VXX**
> MSH|^~\&||IRIS||QUERYINGORG|20040101101||VXX^V02|001|P^|2.4|||ER
> MSA|AA|001||0||0^Message Accepted^HL70357^^^
> QRD|20040120|R|I|01|||0RD|01^SALAMI^STUART^S^^|VXI^VACCINE
> INFORMATION^HL700048|^IRIS||10|
> QRF|IRIS||||~19900607~|
> PID||123^^^^SR~^^^^PI^||SALAMI^BRAD^S^^|^^^^^|19900607|M||^^^^^|||
> PID||456^^^^SR~^^^^PI^||SALAMI^CHARLES^^^^|^^^^^|19900706|M||^^^^^|||
> NK1|1|SALAMI^CHARLES^^|SEL^SELF^HL70063|123 STREET
> ADDRESS^^CITY^WI^55555^USA^^^^|(608)555-6666^^^^^^^^|

Scenario 2:
If IRIS matches 2 clients and both have locked records, then a QCK is generated. The QCK message will be comprised of the MSH, MSA and QAK segments. The MSA-01 field will have a value of "AR" (Application Reject). The MSA-3 field will display a message similar to "Potential match found. Record is locked; please contact IRIS Help Desk for more information." MSA-6 text will display, "Record not released".

Example:

VXQ
MSH|^~\&||IRIS||QUERYINGORG|20040101101||VXQ^V01|007|P^|2.4|||ER
QRD|20040120|R|I|01|||0RD|01^TEST INDICATOR^NO^|VXI^VACCINE
INFORMATION^HL700048|^IRIS|||
QRF|IRIS||||~19760707~|

QCK
MSH|^~\&||IRIS||QUERYINGORG|20040101101||VXX^V02|007|P^|2.4|||ER
MSA|AR|007|Potential match found. Record is locked; please contact IRIS Help Desk for more
information.||500^Record Not Released^HL70357^^^|
QAK|01|NF|

ACK – Acknowledgment Messages (with Errors)

ACK messages are generated for message rejections and for informational error messages. Three conditions
that result in message rejection are:
1. Sequencing (i.e., a PID segment must follow an MSH segment).
2. Segment required fields contain no data.
3. Segment required fields contain invalid data.

An ACK is also generated when an informational error message has occurred, but it has not resulted in
message rejection (i.e., NK1 segment contains no last name). In this case, the segment is ignored but the
remainder of the message is processed. An ACK message is generated with a message informing the sender of
the problem. The error message in the text does NOT include "Message Rejected". The ACK contains the MSH,
MSA and ERR segments.

The MSH segment is generated according to normal HL7 processing guidelines. The MSA and ERR segments
are detailed below:

MSA – Message Acknowledgment Segment

SEQ	LEN	DT	R/O	RP/#	TBL#	ELEMENT NAME
1	2	ID	R		0008	Acknowledgment code
2	20	ST	R			Message control ID
3	80	ST	O			Text message
4	15	NM	O			Expected sequence number
5	1	ID	B		0102	Delayed acknowledgment type
6	100	CE	O			Error condition

Field Notes:

MSA-1   The acknowledgment code indicates whether the message was accepted, rejected, error, etc.This
is a required field. IRIS generates an "AE" for messages resulting in informational or rejection
errors. An "AA" is generated for a simple acknowledgment acceptance.

MSA-2   The message control ID is the unique ID that is sent by the sending system. This is a required
field. It allows the sending system to associate each message with a response. In a response, this
will be the same as the control ID that was sent in MSH-10 by the sending system.

MSA-3   This optional field further describes an error condition. When a message has been rejected, IRIS
generates "Message Rejection" as the first portion of the text describing the error message.
Informational messages will not contain "Message Rejection".

MSA-4   This optional numeric field is used in the sequence number protocol. IRIS does not generate this
field.

MSA-5 This optional numeric field is used in the sequence number protocol. IRIS does not generate this field.

MSA-6 Error Condition. IRIS does not generate this field.

ERR – Error Segment

The Error segment (ERR) is used to add error comments to acknowledgment messages. If the message was rejected for functional reasons, this segment will locate the error and describe it using locally established codes. Field components include:

^<sequence (NM)>^<field position (NM)>^<code identifying error (CE)>

SEQ	LEN	DT	R/O	RP/#	TBL#	ELEMENT NAME
1	80	CM	R		0357	Error code and location

Example:

ACK
MSH|^~\&||ALERIIS||QUERYINGORG|20040101101||VXQ^V01|001|P^|2.4|||ER
MSA|AE|001|Invalid relationship code. Defaulting to Guardian|3||102^Invalid data value^HL70357^^^
ERR|NK1^16^3^0

QCK – Query General Acknowledgment

A QCK message is generated when IRIS has processed the query message, but no match was found to the query parameters in the database. IRIS does NOT generate this response message for anything other than no match found (for successful VXQ processing). Remember, error messages are reported through the use of the ACK response message; therefore, the optional [ERR] segment will never be generated for the QCK response message.

The MSH segment is generated according to normal HL7 processing guidelines. The MSA and QAK segments are detailed below:

MSA – Message Acknowledgment Segment

SEQ	LEN	DT	R/O	RP/#	TBL#	ELEMENT NAME
1	2	ID	R		0008	Acknowledgment code
2	20	ST	R			Message control ID
3	80	ST	O			Text message
4	15	NM	O			Expected sequence number
5	1	ID	B		0102	Delayed acknowledgment type
6	100	CE	O			Error condition

Field Notes:

MSA-1 The acknowledgment code indicates whether the message was accepted, rejected, error, etc. This is a required field. IRIS generates an AA for this field if no match is found in IRIS. An AR is generated if a match is found, but the "Allow sharing of data" indicator is No.

MSA-2 The message control ID is the unique ID that is sent by the sending system. This is a required field. It allows the sending system to associate each message with a response. In a response, this will be the same as the control ID that was sent in MSH-10 by the sending system.

MSA-3 This optional field further describes an error condition. When a message has been rejected, IRIS generates "Message Rejection" as the first portion of the text describing the error message.

Informational messages will not contain "Message Rejection".

MSA-4   This optional numeric field is used in the sequence number protocol. IRIS does not generate this field.

MSA-5   Delayed Acknowledgement type. IRIS does not generate this field.

MSA-6   Error Condition. Refer to HL7 table 0357 for possible values.

QAK – Query Acknowledgment Segment

SEQ	LEN	DT	R/O	RP/#	TBL#	ELEMENT NAME
1	32	ST			00696	Query Tag
2	2	ID	O		00708	Query response status

Field Notes:

QAK-1   This field is valued by the initiating system to identify the query and can be used to match response messages to the originating query. If it is valued, the responding system is required to echo it back as the first field in the QAK. IRIS uses the value specified in the QRD-04 (of the VXQ) for the QAK-01 query tag value.

QAK-2   This field allows the responding system to return a precise response status. Refer to HL7 table 0208 for values. IRIS only generates NF (no data found, no errors) for this field.

Example:

QCK
MSH|^~\&||ALERIIS||QUERYINGORG|20040101101||VXX^V02|007|P^|2.4|||ER
MSA|AR|007|Potential match found. Record is locked; please contact IRIS Help Desk for more information.||500^Record Not Released^HL70357^^^|
QAK|01|NF|

THIS CONCLUDES REAL TIME PROCESSING.

Appendix A – HL7 Data Types

Please see Appendix A of the HL7 2.4 - General Transfer Specification document for the listing of HL7 Data Types.

Appendix B – HL7 Tables

Please see Appendix B of the HL7 2.4 - General Transfer Specification document for the listing of HL7 Tables and values.

Appendix C – Vaccine Codes

Please see the IRIS Vaccine Codes PDF or Spreadsheet for a listing of vaccine codes including: CVX Code, CPT Code, NDC Code, Trade Name, and Vaccine Group.

Change History

Published / Revised Date	Version #	Author	Section / Nature of Change
January 07, 2013	1.0	HP/IDPH	Initial approved version including Real-Time, PHINMS and Appendix