Florida SHOTS™
WEB SERVICES TESTING

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WEB SERVICES TESTING

1. Ensure that the HL7 messages are formatted correctly, paying careful attention to the contents of the MSH-4 and RXA-11.4 fields. You may use live patient data with real names and real data, or pseudonyms with simulated data. Do not use "Test" or "Patient" or any variation for the patient names, so do not use fictitious vaccinations. Failure to follow these guidelines will result in the rejection of the test messages.

   Important: Please note that during the testing phase even real data will not be posted to the account and will need to be resent once you are approved for production.

2. Refer to the HL7 specifications in the link below for reference:
   http://flshotsusers.com/wp-content/uploads/2012/08/FLSHOTS_2.5.1-Specs-Book-online1.pdf

3. Be sure to use the Staging URL you were provided and not the Production URL. Also please be advised that you will be using the same SOAP credentials for both Staging and Production.

4. Extensive testing is recommended. Ensure testing covers your interoperability requirements, which would include workflow, response evaluation—responding to secondary responses, test results—positive validations and failures, test-based scenarios—VFC-enrolled practices vs. non-VFC practices. Review the section "Validating VXU Messages" on pages 2 – 8 that will provide guidelines on VXU message formatting.

5. If your interface is capable and has been approved by Florida SHOTS to send QBP messages, review the "QBP Testing Scenarios" section on page 9 for the example QBP messages that need to be sent for each practice.

6. Send an e-mail to the Implementation Specialist with whom you are working to inform them that you have sent the test messages and specify the names of the practices.

7. Your Florida SHOTS Implementation Specialist will contact you after reviewing the messages and indicate if there were any problems that need to be resolved or if the practice has been promoted to the Production environment. Once the practice is promoted, you will need to switch the URL from Staging to Production.

Thank you for your cooperation in following each of these steps. This will ensure that we are able to establish a live interface in the most effective and efficient manner and that no live patient data will be lost during the testing phase.

VALIDATING NEW EHR/PROVIDER DATA EXCHANGE

As new TEST messages are received from a new EHR and processed in Florida SHOTS, the message's structure and content should be verified and validated to comply with published standards prior to the EHR gaining the ability to submit messages to the "live" registry database.

Currently, three types of messages may be sent to Florida SHOTS:

- Connectivity Test Messages
- VXU Messages
- QBP Messages

It is expected of every EHR accessing Florida SHOTS Web Services that each of these message types can be consistently and correctly generated by the EHR software, and that the EHR software is designed to properly interpret and utilize the return messages generated by Florida SHOTS.

Connectivity Test Messages

The Connectivity Test Message contains only three required fields:

- Username   Uppercase alphanumeric characters only
- Password   Uppercase and lowercase alphanumeric characters
- EchoBack   Uppercase and lowercase alphanumeric characters

The Username and Password fields should be equal to the values supplied to the EHR when the Web Services connection was established in Florida SHOTS. The EchoBack field can contain any alphanumeric data, but must be present within the message; as its name implies, the supplied phrase will be echoed back to the EHR when the Connectivity Test is successful. When the test is unsuccessful, a SOAP fault message is returned.

VXU Messages

All of the VXU segments noted below can be processed and accepted through Web Services into Florida SHOTS. While a minimalist VXU record could be created using only the required fields, EHR implementations should strive to **supply as many of the optional VXU segments as they can populate** from the information present in their EMR.

The VXU Message contains the following **required** fields:

- Patient Medical Record Number   [PID-3.1] (with corresponding PID-3.5 = 'MR')
- Patient Last Name   [PID-5.1]
- Patient First Name   [PID-5.2]
- Patient Middle Name   [PID-5.3]
- Patient Birth Date   [PID-7] (format: YYYYMMDD)
- Patient Gender   [PID-8] (acceptable values: 'U','M', 'F' [unknown, male, female])
- Patient Race   [PID-10] (numeric US race codes or original NIP alphabetic race codes)
- Patient Street Address   [PID-11.1]

- Patient City   [PID-11.3]
- Patient State   [PID-11.4]
- Patient Zip Code   [PID-11.5]
- Vaccination Date   [RXA-3] (format: YYYYMMDD)
- Vaccine Lot Number   [RXA-15]
- Vaccine Lot Expiration Date   [RXA-16] (format: YYYYMMDD)
- Vaccine Manufacturer   [RXA-17] (valid values listed in MVX table)
- Vaccine Type   [RXA-5.1] (supply RXA-5.1,5.2,5.3 for CVX _or_ supply RXA-5.4,5.5,5.6 for CPT)
- Vaccination Short Description   [RXA-5.2]
- Historical Vaccination Flag Indicator   [RXA-9.1] ('00' if administered, any other value [or null] if historical)
- Vaccination Service Site   [RXA-11.4.1] (required for VFC; value = unique Provider Site ID in Florida SHOTS)

The VXU Message may also contain the following _optional_ fields:

- Patient Social Security Number (SSN)   [PID-3.1] (with corresponding PID-3.5 = 'SS')
- Patient Medicaid Number   [PID-3.1] (with corresponding PID-3.5 = 'MA')
- Patient Telephone Number   [PID-13] (PID-13.2 = 'PRN'; PID-13.6 (format: NNN) and PID-13.7 (format: NNNNNNN))
- Patient Multiple Birth Indicator   [PID-24] ('Y' if client part of multiple birth, then PID-25 required)
- Patient Birth Order   [PID-25] ('1'= first born, '2' = second, '3' = third, and so on)
- Mother's Last Name   [NK1-2.1]
- Mother's First Name   [NK1-2.2]
- Mother's Middle Name   [NK1-2.3]
- Relationship   [NK1-3] (Florida SHOTS accepts only 'MTH' for mother or 'FTH' for father)
- Mother's Birth Date   [NK1-16] (format: YYYYMMDD)
- Father's Last Name   [NK1-2.1]
- Father's First Name   [NK1-2.2]
- Father's Middle Name   [NK1-2.3]
- Relationship   [NK1-3] (Florida SHOTS accepts only 'MTH' or mother or 'FTH' for father)
- Father's Birth Date   [NK1-16] (format: YYYYMMDD)
- Vaccine Action Code   [RXA-21] ('A', or 'U')
- Vaccine Injection Route   [RXR-1] ('ID','IM','NS','IV','PO','SC','TD', or 'OTH')
- Vaccine Injection Site   [RXR-2] ('LT','LA','LD','LG','LVL','LLFA','RA','RT','RVL, 'RG','RD' or 'RLFA')

- VFC Eligibility   [OBX-3-5]
- VIS Publication Date   [OBX-3-5]
- Vaccine Type   [OBX-3-5]

When building patient records for use in TEST (or, for that matter, in live production), it is important to note that certain words (BABY, BOY, GIRL, PATIENT, TEST, FALSE, etc.) are disallowed as a FIRST or LAST name in Florida SHOTS, and should be avoided. Further, our extended search software will filter out certain "noise words" (such as JUNIOR or SAINT) during a search, so any search that contains ONLY a noise word in the first or last name will either return no results, or return with a very large result set.

It is expected that every EHR will send the sample patient outlined in the table below, including all fields marked required, along with any optional fields that are supported by their EMR software.

HL7 Field	Data Field	Required/Optional	Values Expected from Provider
Patient Information			
PID-3.1	Patient Social Security Number (SSN)	*Optional*	123-45-6789
PID-3.1	Patient Medical Record Number or Chart ID	**Required**	ABC123
PID-3.1	Patient Medicaid number	*Optional*	9899899899
PID-5.1	Patient name: last	**Required**	Myxx
PID-5.2	Patient name: first	**Required**	Robert
PID-5.3	Patient name: middle	**Required**	Adam
PID-7	Patient birth date	**Required**	01/01/2012
PID-8	Patient gender	**Required**	Male
PID-10	Patient race	**Required**	White
PID-11.1	Patient address: street	**Required**	123 Main Street, Apt #123
PID-11.3	Patient address: city	**Required**	Tallahassee
PID-11.4	Patient address: state	**Required**	Florida
PID-11.5	Patient address: zip	**Required**	32301
PID-13	Phone Number	*Optional*	8508888889
PID-24	Patient multiple birth indicator	*Optional*	Y
PID-25	Patient birth order	*Optional*	2
Mother Information			
NK1-2.1	Mother's name: Last	*Optional*	Myxx
NK1-2.2	Mother's name: First	*Optional*	Theresa

NK1-2.3	Mother's name: Middle	*Optional*	Marie
NK1-3	Relationship	*Optional*	MTH
NK1-16	Mother's date of birth	*Optional*	02/12/1984
Father Information			
NK1-2.1	Father's name: Last	*Optional*	Myxx
NK1-2.2	Father's name: First	*Optional*	Samuel
NK1-2.3	Father's name: Middle	*Optional*	John
NK1-3	Relationship	*Optional*	FTH
NK1-16	Father's date of birth	*Optional*	02/02/1982
Vaccination Information			
RXA-3	Vaccination date	**Required**	5/2/2012
RXA-5.1	Vaccine type	**Required**	Brand: PENTACEL Send either CVX: 120 (or) CPT: 90698
RXA-5.2	Vaccination Short Description	**Required**	DTaP-IPV-HiB or equivalent
RXA-9.1	Historical vaccination flag indicator	**Required**	00
RXA-11.4.1	Administering Location (Service Site)	*Optional*	VYQ41383
RXA-15	Vaccine lot number	**Required**	C4485AA
RXA-16	Vaccine lot expiration date	**Required**	12/31/2015
RXA-17	Vaccine manufacturer	**Required**	PMC
RXA-21	Action Code	*Optional*	A or U
Injection Route and Site Information			
RXR-1	Vaccine route of administration	*Optional*	IM
RXR-2	Vaccine site of administration	*Optional*	RA (Right Arm)
VFC Eligibility and VIS Publication Information			
OBX-3 - OBX-5	VFC eligibility	*Optional*	V02
OBX-3 - OBX-5	VIS Publication Date	*Optional*	11/05/2015
OBX-3 - OBX-5	Vaccine Type	*Optional*	120

VALIDATING NEW EHR/PROVIDER DATA EXCHANGE

If necessary, additional sample patients may be created using the same last name (MYXX), while continuing to avoid using any of the disallowed or noise words described above in the first name field. Those EHRs that wish to validate QBP functionality in their software will need **to create several patient records through the VXU web service in order to build a sufficient patient list, ascribed to their practice, in the TEST area**, for retrieval during QBP testing.

QBP MESSAGES

Florida SHOTS supports the ability of the EHR to query the Florida SHOTS registry to obtain a complete patient vaccination record by sending a QBP message. Florida SHOTS will generate a response message indicating an exact match, multiple matches, or no match found.

The QBP Message contains the following **required** fields:

- Patient Last Name   [QPD-4.1]
- Patient First Name   [QPD-4.2]
- Patient Middle Name   [QPD-4.3]
- Patient Birth Date   [QPD-6](format: YYYYMMDD)
- Patient Gender   [QPD-7](acceptable values: 'U','M', 'F' [unknown, male, female])

Additionally, at least one of the following fields is **required**:

- Patient Medical Record Number   [QPD-3.1] (with corresponding QPD-3.5 = 'MR')
- Patient Social Security Number (SSN)   [QPD-3.1] (with corresponding QPD-3.5 = 'SS')
- Patient State Registry ID Number   [QPD-3.1] (with corresponding QPD-3.5 = 'SR')

The QBP Message may also contain the following *optional* fields:

- Patient Street Address   [QPD-8.1]
- Patient City   [QPD-8.3]
- Patient State   [QPD-8.4]
- Patient Zip Code   [QPD-8.5]
- Patient Telephone Number   [QPD-9](QPD-9.2 = 'PRN';QPD-9.6 (format: NNN) and QPD-9.7 (format: NNNNNNN))
- Patient Medicaid Number   [QPD-3.1] (with corresponding QPD-3.5 = 'MA')
- Patient Multiple Birth Indicator   [QPD-10] ('Y' if client part of multiple birth, then QPD-11 required)
- Patient Birth Order   [QPD-11] ('1'= first born, '2' = second, '3' = third, and so on)

EHR VALIDATION GUIDELINES

As an EHR undergoes validation, it is understood that any errors generated through processing the incoming message(s) will be routed back to the EHR for remediation. It is expected that any EHR recommended for promotion to production will have submitted at least one (preferably several) error-free VXU (and, if pertinent, QBP) messages to the TEST area in Florida SHOTS. The Data Exchange Administrators will not promote an EHR to the live registry if their test messages are still generating errors in the TEST area.

Warnings generated during the processing of VXU and QBP messages will not, in and of themselves, prohibit an EHR from being promoted to the live registry, but it is expected that the EHR will make changes to mitigate the generation of any warnings within a reasonable timeframe. Providers who participate in the VFC (Vaccines for Children) program may be held to a slightly stricter standard here, as it is imperative that we accurately collect vaccine and administration information for any immunization provided under the VFC program. It is strongly suggested that any warnings related to vaccination (RXA, RXR, and OBX) fields, **even if the field is considered "optional**," should be remediated prior to promotion (or recommendation for promotion) to the live registry.

It is expected that, for some period after a given EHR has been promoted to the live registry, Data Exchange Staff personnel will continue monitoring the upload log reports to ensure that the EHR continues to submit error-free messages to Florida SHOTS Web Services, and to assist (if necessary) with the mitigation of any warnings received during VXU/QBP message processing.

QBP TESTING SCENARIOS

The Staging (or TEST) area in Florida SHOTS has been "pre-seeded" with several client records so that specific QBP return message types may be received and handled appropriately within the EHR.

A QBP query containing the following QPD segment will return "too many results":

```
QPD|Z34^Request Immunization History^HL70471|Query38a|AB589^^^^MR|MYXX^R^^^^
^L||20120101|F||^^^^^000^0000000|Y|3
```

This is a very broad search (with only a last name and first initial, and no address), which matches several records, and so the EHR should submit a more specific query.

A QBP query containing the following QPD segment will return multiple matches:

```
QPD|Z34^Request Immunization History^HL70471|Query38a|477157789^^^^SS|MYXX^R
IANNA^^^^^L||20120101|F||^^^^^000^0000000|Y|3
```

Here, we've included the full first name, which narrows the search sufficiently so that we are returned a short list of matching records.

A QBP query containing the following QPD segment will return an exact match (and, thus, include Immunization Status and Vaccinations for the client):

```
QPD|Z34^Request Immunization History^HL70471|Query38a|ABC125^^^^MR~155116789
^^^^SS|MYXX^JODY^A^^^^L||20120101|F|3453 AHEPB AD^^TALLAHASSEE^FL^32356^USA^
H|^^^^^000^0000000|Y|3
```

In this search, we've included the full first name, last name, address, and SSN, so that an exact match can be found, and the return will be the entire client record including all vaccinations on file as well as an immunization status for this specific client.

A QBP query containing the following QPD segment will return "no match found":

```
QPD|Z34^Request Immunization History^HL70471|Query38a|AB589^^^^MR|MYRR^X^^^^
^L||20120101|F||^^^^^000^0000000|Y|3
```

Here, we're only searching for a last name and first initial, but since there are no records in our system with this last name, a "no match" result is returned.