What is an interface?
An interface is a means of exchanging data electronically from one system to another. When your electronic health record (EHR) has an interface with the WA State Immunization Information System (IIS), your data is sent electronically to the IIS as a Health Level 7 (HL7) message.

How does an interface work?
When you document vaccines in your EHR, they are sent to the IIS through your interface. This means you need to be careful when entering data in your EHR because documentation errors will be reflected in the IIS. The quality of your data in the IIS is a reflection of the quality of data in your EHR. Interfaces can be set up in many different ways and these differences may affect inventory management and troubleshooting.

How do vaccines transfer from your EHR to the IIS?
The process starts with clinic staff entering vaccines in your EHR. Then, your EHR sends this data in an HL7 message to the IIS. The IIS receives and then accepts or rejects the HL7 message. For accepted messages, the data goes through deduplication (a record matching process), and the vaccination shows up on the patient’s IIS record. If the IIS rejects the HL7 message, this vaccine will not show up on the IIS record. You need to correct whatever caused the IIS to reject the message and then resend the data.

What is Deduplication?
Deduplication is a process of matching an incoming record from your EHR to an existing record in the IIS. Records go through two types of deduplication: patient-level and vaccination-level.

Possible Patient Deduplication Outcomes

- **Incoming Record Exactly or Closely Matches Existing IIS Record**
  - IIS automatically merges the records

- **Incoming Record Possibly Matches Existing IIS Record**
  - Records go to manual deduplication and must be reviewed by WA Dept of Health

- **Incoming Record Does Not Match Any Existing IIS Records**
  - IIS creates a new record
How long does it take for vaccines to show up on patient records in the IIS?

This depends on several factors:

- How often you send data from your EHR to the IIS.
- The amount of data coming in and the volume of other processes running in the system.
- How easily the system deduplicates your EHR data. If the IIS can’t automatically deduplicate a record, it goes into manual deduplication. This means it takes longer for the vaccine to show up on the patient’s record in the system and longer to decrement from your IIS inventory.

**TIP:** Providing complete and accurate patient demographic data helps the system automatically match your data to existing patient records in the IIS.

What should you do if a vaccine documented in your EHR does not show up in the IIS?

Check with IT or your EHR lead to see if any messages sent from your EHR were rejected by the IIS because these vaccines will not show up in the system.

- If you receive the provider detail error report (“warnings & errors report”), any messages listed with an error were rejected. We recommend that clinics prioritize errors because those messages never made it into the IIS.
- Warnings on messages are different. A warning means the data will show up on patient records in the IIS, but some data was inaccurate or inconsistent with what the IIS expected. We expect clinics to review messages with warnings and correct those issues to maintain high quality data in the system.

Vaccines may take a while to show up in the IIS when a record can’t be automatically matched by the system during the deduplication process. These records require manual review by Department of Health staff. You can contact the Help Desk at 1-800-325-5599 or WAISHelpDesk@doh.wa.gov to find out if you have records in manual review.
Things you need to know about your interface
Below is a list of things that you should know about your interface when considering the best vaccine inventory management workflow for your practice. Your IT staff or EHR vendor may be able to answer these questions.

<table>
<thead>
<tr>
<th>How often does your EHR send data to the IIS?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Real time</strong></td>
<td>Your EHR sends data to the IIS as soon as it is documented in your EHR. Typically, this data shows up on the patient’s IIS record within 24 hours.</td>
</tr>
<tr>
<td><strong>Batch</strong></td>
<td>Your EHR sends data to the IIS daily, weekly, or on some other timeframe. This means vaccines show up on records in the IIS after your EHR sends the batch of data to the system. So, if you send data to the IIS every Friday, you will not see the vaccines you document throughout the week in the IIS. These vaccines show up in the IIS the following week.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does your EHR send vaccinator names and credentials?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yes</strong></td>
<td>Vaccinator names and credentials show up on patient records and reports in the IIS if you manage your vaccinators in the system and your EHR sends the correct ID for each vaccinator.</td>
</tr>
<tr>
<td><strong>No</strong></td>
<td>Vaccinator names and credentials do not show up on patient records or reports in the IIS. You still need to document this information in your EHR or elsewhere because the vaccinator name and credentials are required by federal law.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does your EHR send update messages when vaccines are edited?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yes</strong></td>
<td>Edits made in your EHR, update the patient’s IIS record.</td>
</tr>
<tr>
<td><strong>No</strong></td>
<td>Edits made in your EHR, do not update patient records in the IIS. This means you also need to edit vaccination records in the IIS in order for doses to subtract (decrement) from your inventory.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does your EHR send delete messages?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yes</strong></td>
<td>Vaccinations deleted in your EHR are also removed from the patient’s IIS record.</td>
</tr>
<tr>
<td><strong>No</strong></td>
<td>Vaccinations deleted in your EHR, still show up on the patient’s IIS record. This means you also need to manually delete the vaccine from the IIS.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does your EHR send historical* vaccines? *Doses administered at a different clinic</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yes</strong></td>
<td>Historical vaccines entered in your EHR also show up on the patient’s IIS record. Historical records in the IIS, show up with an * after the date.</td>
</tr>
<tr>
<td><strong>No</strong></td>
<td>Historical vaccines entered in your EHR do not show up on the patient’s IIS record. You may want to consider manually entering historical vaccines in the IIS to make the patient’s record more complete.</td>
</tr>
</tbody>
</table>
How does your interface affect vaccine inventory management?
Vaccination information sent in your HL7 messages directly impacts your inventory in the IIS. Making sure all clinic staff consistently enters accurate and complete vaccination data helps your inventory decrement from the system correctly. Errors or missing information causes issues with your inventory because those doses don’t subtract.

Best Practice Vaccine Management Staffing & Workflow
It is important to discuss staff roles and possible workflows prior to your interface going live. Some staff members interact with the IIS frequently, some rarely, and some not at all. Clinics participating in the Vaccines for Children (VFC) program must have a primary vaccine coordinator and backup to manage vaccine ordering, troubleshooting, and monthly reporting.

This diagram shows an example of a best practice workflow for managing vaccine in the IIS. The vaccine management workflow starts with receiving vaccine orders in the IIS (for most publicly-supplied vaccines) or manually adding vaccines to your IIS inventory (for privately-purchased and some publicly-supplied vaccines). Once the vaccine is in your IIS inventory, you can start administering the vaccine and documenting it in your EHR.

Monitoring Your Inventory
Throughout the month or at least once a month (for VFC providers), you need to count your physical inventory and compare it to your IIS inventory counts.
Managing Inventory with an Interface

Before doing your physical inventory counts:

- Review your IIS Reconciliation screen and make sure all of the vaccine in your clinic’s storage units show up on the screen (if you only manage publicly-supplied vaccines in the IIS, just make sure the Reconciliation screen includes all of your publicly-supplied vaccines).
- If any lot numbers in your vaccine storage units are missing on the IIS Reconciliation screen, look for any Inbound Orders on the Create/View Orders screen that show a “Shipped” status. If these orders arrived at your clinic, receive them in the IIS to add the inventory to your Reconciliation screen.
  - If you have Meningococcal B vaccine or publicly-supplied vaccine for adults at your clinic, you need to manually add this vaccine to your IIS inventory.
  - If you receive transferred vaccine from another provider, you need to manually add this vaccine to your inventory through Lot Numbers → Search/Add.
- Print out the Reconciliation worksheet and take it to your storage units to count your vaccine.

After doing your physical inventory counts:

- Note any differences between your physical inventory counts and the counts on the IIS Reconciliation screen.
- Note any lot numbers with 0 doses left in your physical inventory. Inactivate these lot numbers when you complete your monthly inventory reconciliation.

Troubleshooting Inventory Issues in the IIS

If your physical inventory counts do not match your IIS inventory counts, use the IIS tools described below to identify why.

Reconciliation Screen

This screen displays your current inventory in the IIS and serves as an “early warning system” to help you quickly identify inventory issues, like:

- Missing Lot Numbers
- Incorrect Lot Choice
- Negatives After Lot Runs Out

Patient Detail Report

Reasons for Use:
- Lot Number Typo
- Incorrect VFC Status
- Administered Before Inventory Received in IIS
- Compare with EHR Records

Lot Usage and Recall

Reason for Use:
- Negatives on Reconciliation screen
Lot numbers in your clinic’s physical inventory that are missing from your IIS inventory.
- Negative quantities on hand for certain lot numbers.

Patient Detail Report
Run this report when your inventory counts in the IIS are larger than your physical inventory counts. This means some of the doses documented in your EHR did not subtract from your IIS inventory. This report helps identify vaccine documentation errors and VFC eligibility status issues. Access patient detail report instructions here.

Lot Usage and Recall Report
Run this report when you have negative counts on the Reconciliation screen. This report helps identify all patients who received a certain lot number of vaccine. Compare this report to your EHR records to look for any discrepancies. Access lot usage and recall report instructions here.

Other Troubleshooting Tools

Provider Detail Error Report (“Warnings & Errors Report”)
This report is emailed to users who are set up to receive it. The report shows warnings and errors produced by data sent from your EHR to the IIS. It is meant to help you identify and resolve data issues throughout the month (including issues that impact your inventory). This report allows you to monitor the quality of your electronic data and identify any issues that need to be corrected. This report looks at data sent for all ages, not just pediatric patients.

What Items Affect Your Inventory?

**Timing**
- Lot numbers must be received through the Create/View Order screen OR manually entered in the IIS before any doses are sent from your EHR. Doses won’t decrement unless your inventory is in the IIS before messages are sent from your EHR.
- **Do not receive an order AND manually add the lot numbers or you will double your inventory.**

**Accuracy**
- The “right medication” for the “right patient” and the “right documentation” every time.
- You must document the correct vaccine type, lot number, manufacturer, and CVX code.
- If you have multiple lot numbers of the same vaccine in your inventory, only use one lot at a time and make sure you type or select the correct lot number in your EHR.
- If you have staff that floats between multiple clinics, they need to be logged in to your EHR under the correct facility to connect to the right clinic’s inventory in the IIS.

**Matching**
- The vaccine type, lot number and manufacturer entered in your EHR must exactly match the information for that vaccine in your IIS inventory. Make sure you document lot numbers from the box of vaccine, not the vial.
- You must document the correct VFC eligibility status for the age and insurance status of your patient. If your EHR sends a funding source, the funding source must match the VFC status (e.g. VFC Eligibility: Medicaid and Funding Source: Public).
HL7 Message Data Elements & Inventory Decrementing
This section explains all the data elements that must be documented correctly and included in the HL7 message in order for doses entered in your EHR to subtract from your clinic’s inventory in the IIS.

<table>
<thead>
<tr>
<th>Data element</th>
<th>Where is it in the HL7 message?</th>
<th>What’s important to know?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot number</td>
<td>RXA-15</td>
<td>The combination of these four elements must be valid (no typos or extra spaces) and match the IIS inventory for the specific facility that administered the vaccine.</td>
</tr>
<tr>
<td>Manufacturer Code</td>
<td>RXA-17</td>
<td>Must be documented as a newly administered vaccine (RXA-9 = “00”) in order to subtract from inventory. Historical doses do not subtract from inventory.</td>
</tr>
</tbody>
</table>
| CVX Code                     | RXA-5                           | Public (VFC/State-Supplied) Inventory  
VFC Eligibility Codes must be: V02, V03, V04, V05, V10, V25, V23 or V22 in order to subtract from public (VFC) inventory.                                                                                                           |
| Administering Facility ID    | RXA-11                          | Private Inventory  
VFC Eligibility Codes must be: V01 or V24.                                                                                                                                                                                                 |
| Administered Vaccine         | RXA-9                           | Public (VFC/State-Supplied) Inventory  
Funding Source Code and VFC Eligibility codes must be public codes.                                                                                                                                                                 |
|                             |                                 | Private Inventory  
Funding Source Code and VFC Eligibility codes must be private codes.                                                                                                                                                           |

VFC Eligibility Code  
If OBX-3 = 64994-7, then OBX-5 = VFC eligibility status.  
* If the VFC code is invalid or blank, doses will not subtract from inventory.

Funding Source Code  
If OBX-3 = 30963-3, then OBX-5 = Funding Source.

Example
GreatShots Clinic (Facility ID: SIISClient12345) manages public flu vaccine inventory in the IIS for CVX 158 (Influenza inj quadrivalent w/presv. 36+ mos), lot number 123ABC, Manufacturer Sanofi Pasteur (Manufacturer Code: PMC) and this lot is currently active in the IIS.

- In order for doses to subtract from IIS inventory, the HL7 messages must include:
  - CVX code: 158
Managing Inventory with an Interface

- Lot number: 123ABC
- Manufacturer code: PMC
- Facility ID: SIISClient12345
- Newly administered vaccine code: 00
- VFC Eligibility Code: V02, V03, V04, V05, V10, V25, V23 or V22
- Funding Source Code (if sending this information): Public funding source code

- If GreatShots Clinic does not have lot number 123ABC in their IIS inventory or they inactivated this lot number, these doses will not subtract from their inventory.

Correcting Patient Records

Once you identify any issues on patient records, you need to correct the records so:

- The patient’s IIS record contains the correct information.
- The doses decrement from your inventory.
- Your monthly reports are accurate.

Reminders about correcting records:

- If your EHR cannot send update messages to the IIS, you need to correct the records in your EHR and manually edit the records in the IIS.
- If you document the wrong vaccine administration date or vaccine type, you must delete the record because you cannot edit these pieces of information in the IIS. You will need to delete the record in your EHR and in the IIS if your EHR cannot send delete messages.

Submitting Monthly Reports (for VFC providers only)

After correcting any errors in patient records, you can submit your monthly reports.

Submit the following vaccine accountability reports every month:

- **Doses Administered Report**
  - If you see all 0’s on this report, there may be an issue with your interface. Contact IISDataExchange@doh.wa.gov for help troubleshooting this issue.

- **Monthly Inventory Reconciliation Report**
  - You may need to reconcile your inventory by adjusting for any doses that were wasted or transferred during the month.

Questions? Contact the IIS Help Desk at 1-800-325-5599 or WAISHelpDesk@dph.wa.gov