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- The Arizona Alliance for Community Health Centers designated the 2026 Arizona Immunization Conference educational activity for a maximum of 11 hours AMA PRA Category 1 Credits Physicians should only claim credit commensurate with the extent of their participation in the activity.
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Immunization Report & Patient Query via HL7

Bureau of Immunization Services
Interoperability Team

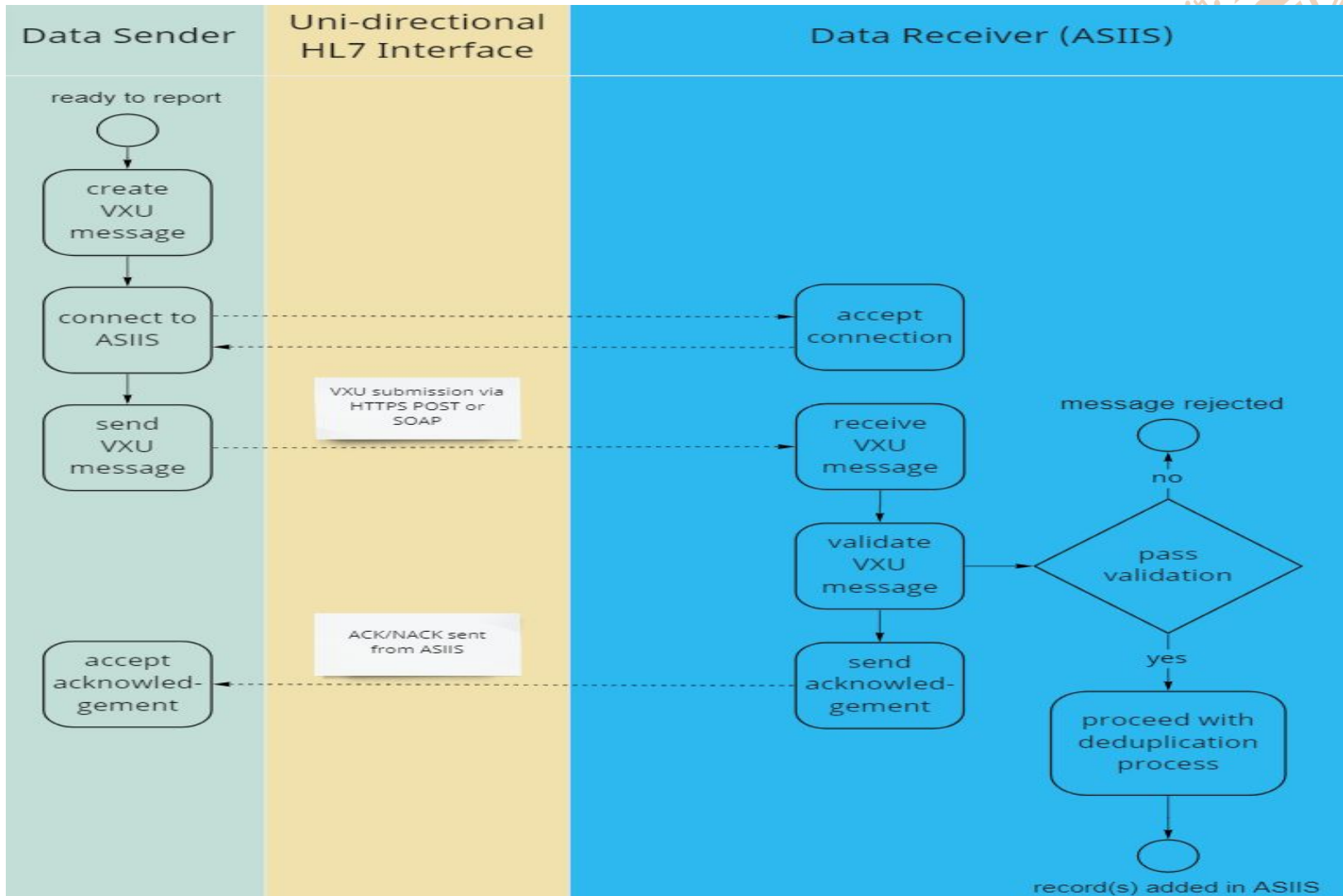


Learning Objectives

- ✓ HL7 Record Submission
- ✓ Troubleshoot Lot Decrementing Issues
- ✓ Patient Query Process
- ✓ Common Query Issues
- ✓ IIS to IIS Data Exchange
- ✓ Query or Update Remote Registry



VXU Submission Process



How Does VXU Submission Work

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MSH|^~\&|ASIS|60143|ASIS|ASIS|20220922|20102770||VXU^V04^VXU_V04|X0005|P|2.5.1
PID|1||12345-011^MR||CVXOnly^PFR12plusBivalentTest02^|19580912|F||2106-3^White|5615-101 Test
Dr^Nowhere^AZ^85106^USA^04013|||ENG^English|S|||2186-5^Not Hispanic or Latino||||||IN
ORC|RE
RXA|0|1|20220922|20220922|300^CVX~59267-0304-02^NDC~91312^CPT|0.3|ml^Milliliters^UCUM||00^New immunization
record^NIP001||^SIISCLIENT77324|||PFR12PLUS|20231031|PFR||CP|A
RXR|IM^HL70162|LD^Left Deltoid^H70163|Lot #|Manufacturer Code (MVX)
OBX|1|CE|30963-3^Vaccine funding source^LN|1|VXC50|F
OBX|2|CE|64994-7^Vaccine funding program eligibility category^LN|2|V01|F|VXC40^Eligibility captured at the immunization level^CDCPHINVS
  
```

Vaccine:	COVID-19, mRNA, LNP-S, bivalent booster, PF, 30 mcg/0.3 mL dose
Date Administered:	09/22/2022
Invalid Vaccination:	Invalid Coronavirus (SARS-CoV-2)(COVID-19): No immunization schedule found for this vaccine type.
Historical:	No
Manufacturer:	PFIZER, INC
Lot Number:	PFR12PLUS
Lot Facility:	HL7 TEST LOCATION - 18TH AVE
Funding Source:	PAN
Provider Noted on Record:	
Lot Noted on Record:	PFR12PLUS
Manufacturer Noted on Record:	
Vaccinator:	
Originating I/S:	ASIS
Organization:	60143 - HL7TEST
Facility (Facility Site ID):	HL7 TEST LOCATION - 18TH AVE (SIISCLIENT77324)
Facility Display Name:	
Anatomical Site:	Left Deltoid
Anatomical Route:	Intramuscular
Dose Size:	Full
Volume (CC):	0.3
VFC Status:	Ineligible

Lot Facility does not come from HL7

**** Important Take Away ****

Lot Facility does not get populated from HL7 message and is only valued when a dose was successfully linked to a lot in site's inventory, in other word, when the doses was decremented properly.



How to Spot Decrementing Issues in ASIIS

- Patient Records – Lot Facility filed was empty

Vaccination/Medicine Detail	
Vaccine:	Vaccinia, smallpox monkeypox vaccine live, PF, SQ or ID injection
Date Administered:	07/11/2022
Historical:	No
Manufacturer:	BAVARIAN NORDIC A/S
Lot Number:	444444
Lot Facility:	
Funding Source:	PUB
Provider Noted on Record:	
Lot Noted on Record:	444444
Manufacturer Noted on Record:	
Vaccinator:	
Originating IIS:	ASIIS
Organization:	60137 - 0000 VOMS TRAINING
Facility (Facility SIIS ID):	MY PAN OFFICE (SIISCLIENT77485)

- Patient Detail Reports (By Service) – Decrementated valued as N

Patient Detail Report

Run By

By Ownership
 By Service
 By Service (official vaccination record)

Patient ID	First Name	Middle Name	Last Name	Birthday	Guardian F.N.	Phone Number	VFC Eligible	Facility
14095810	FUNDINGTST		VFC2PRV	01/20/2024			UNK	HL7 TEST LOCATION ROOSEVELT

Vaccine	Vacc. Date	Dose Size	Mfg. Code	Lot	Funding	VFC Eligible	Historical	Decrementated	Vaccinator	Facility	Date VIS Form Given	VIS Publication Date
COVID-19, mRNA, LNP-S, bivalent, PF, 30 mcg/0.3 mL dose	09/15/2024	Full	SKB	HEPBTEST001	VFC	NO	N	N		HL7 TEST LOCATION ROOSEVELT		
Hep B Ped/Adol - Preserv Free	09/15/2024	Full	SKB	HEPBTEST001	VFC	NO	N	Y		HL7 TEST LOCATION ROOSEVELT		

- Correct Decrementing Tool in VOMS – Search for all funding sources

	Vaccine	Manufacturer	Organization/ Facility	Lot #	Funding Source	Patient ID	Count #	Date Imported	Available Lot Numbers	Reason
<input type="checkbox"/>	Hep B, Adolescent or Pediatric	Glaxosmithkline	HI7test (60143)/ HI7 Test Location Roosevelt (98135)	HEPBTEST002		VIEW	1	12/09/2024	VIEW LOTS	Both Funding Source and VFC Eligibility values are blank.
<input type="checkbox"/>	Hep B, Adolescent or Pediatric	Merck	HI7test (60143)/ HI7 Test Location Roosevelt (98135)	X024135		VIEW	1	11/04/2024	VIEW LOTS	Lot Number is blank or not found in the Inventory
<input type="checkbox"/>	Pneumococcal Conjugate Pcv 13	Glaxosmithkline	HI7test (60143)/ HI7 Test Location Roosevelt (98135)	PCV13TESTLOT	PRVT	VIEW	1	12/09/2024	VIEW LOTS	Lot Number is blank or not found in the Inventory
<input type="checkbox"/>	Rsv, Mab, Nirsevimab-elip, 1.0 Ml, Neonate to 24 Months	Sanofi Pasteur	HI7test (60143)/ HI7 Test Location Roosevelt (98135)	AZ240073	PRVT	VIEW	2	11/04/2024	VIEW LOTS	Lot Number is blank or not found in the Inventory
<input type="checkbox"/>	Tdap	Sanofi Pasteur	HI7test (60143)/ HI7 Test Location Roosevelt (98135)	TDAPTEST0001	VFC	VIEW	1	12/24/2024	VIEW LOTS	Lot Number is blank or not found in the Inventory



Core Vaccine Data Fields Used in Lot Decrementing

Vaccine Record in ASIIS

1. Vaccine Name *
2. Lot Number/Lot Noted on Record
3. Manufacturer
4. Organization/Facility (Facility SIIS ID) **
5. Funding Source

VXU Message

1. RXA-5 (CVX/NDC/CPT)
2. RXA-15 (Lot Number)
3. RXA-17 (MVX)
4. MSH-4.1/RXA-11.4
5. OBX-5 (OBX-3.1 = 30963-3)

Vaccine:	COVID-19, mRNA, LNP-S, bivalent booster, PF, 30 mcg/0.3 mL dose
Date Administered:	09/22/2022
Invalid Vaccination:	Invalid Coronavirus (SARS-CoV-2)(COVID-19): No immunization schedule found for this vaccine type.
Historical:	No
Manufacturer:	PFIZER, INC.
Lot Number:	PFR12PLUS
Lot Facility:	HL7 TEST LOCATION - 18TH AVE
Funding Source:	PAN
Provider Noted on Record:	
Lot Noted on Record:	PFR12PLUS
Manufacturer Noted on Record:	
Vaccinator:	
Originating IIS:	ASIS
Organization:	60143 - HL7TEST
Facility (Facility SIIS ID):	HL7 TEST LOCATION - 18TH AVE (SIISCLIENT77324)
Facility Display Name:	
Anatomical Site:	Left Deltoid
Anatomical Route:	Intramuscular
Dose Size:	Full
Volume (CC):	0.3
VFC Status:	Ineligible

HL7TEST HL7 TEST LOCATION - 18TH AVE

RECONCILE INVT - HISTORY - No Reconciliation History Found

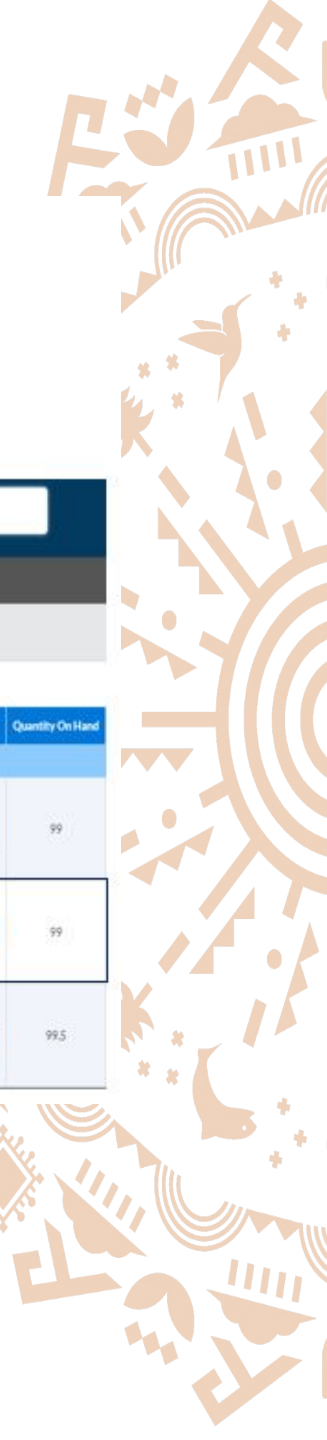
Public Private

Date Range: N/A

Vaccine	Lot#	Exp Date	Funding Source	Lot History	Quantity On Hand
Coronavirus (SARS-CoV-2)(COVID-19)					
Covid-19, Mrna, Lnp-S, Bivalent Booster, Pf, 30 Mcg/0.2 MI Dose Pfizer 12+ Covid-19, Bivalent Booster (10 Pack-10 Doses) (59267-0565-02) PFR 10 pack - VIALS NDC: 59267-0565-02	PFRS211	10/31/2023	PAN	VIEW	99
Covid-19, Mrna, Lnp-S, Bivalent Booster, Pf, 30 Mcg/0.3 ML Dose Pfizer 12+ Covid-19 Bivalent Booster (10 Pack- 6 Dose Vial)(300 Doses)(59267-0304-02) PFR 10 pack - VIALS NDC: 59267-0304-02	PFR12PLUS	10/31/2023	PAN	VIEW	99
Covid-19, Mrna, Lnp-S, Bivalent Booster, Pf, 50 Mcg/0.5 MI Or 25mcg/0.25 MI Dose Moderna Covid-19 Bivalent Booster (10pack-10dose Vial) (100 Doses) (80777-0282-99) MOD 100 pack - VIALS NDC: 80777-0282-99	MOD001	10/31/2023	PAN	VIEW	99.5

* The vaccine name displayed in patient record can be different than the description from what is displayed in VOMS 2.0, this does not always mean the provider send in the wrong vaccine code but rather a sign of mis-matching in other fields

** For provider who use reporting site to report, the organization/facility information can be different if the record was still in the middle of processing



Troubleshooting Decrementing Issues

❑ Had the record been fully processed and posted in ASIIS

Recommendation: Wait 24 to 48 hours (or vaccination date is displayed in blue when viewed under administering facility account) before checking the decrementing status for doses reported.

❑ Had the record been merged with another patient's account due to similar demographics information reported

Recommendation: Avoid using generic baby names in reporting as much as possible and use birth order numbers to help distinguish twins. Contact ASIIS data quality team (asiis_data_quality@azdhs.gov) if you think bad merges may have happened to one of your patient accounts.

❑ Was ASIIS order receiving process for the lot number in question completed prior to vaccine administration or reporting date and time

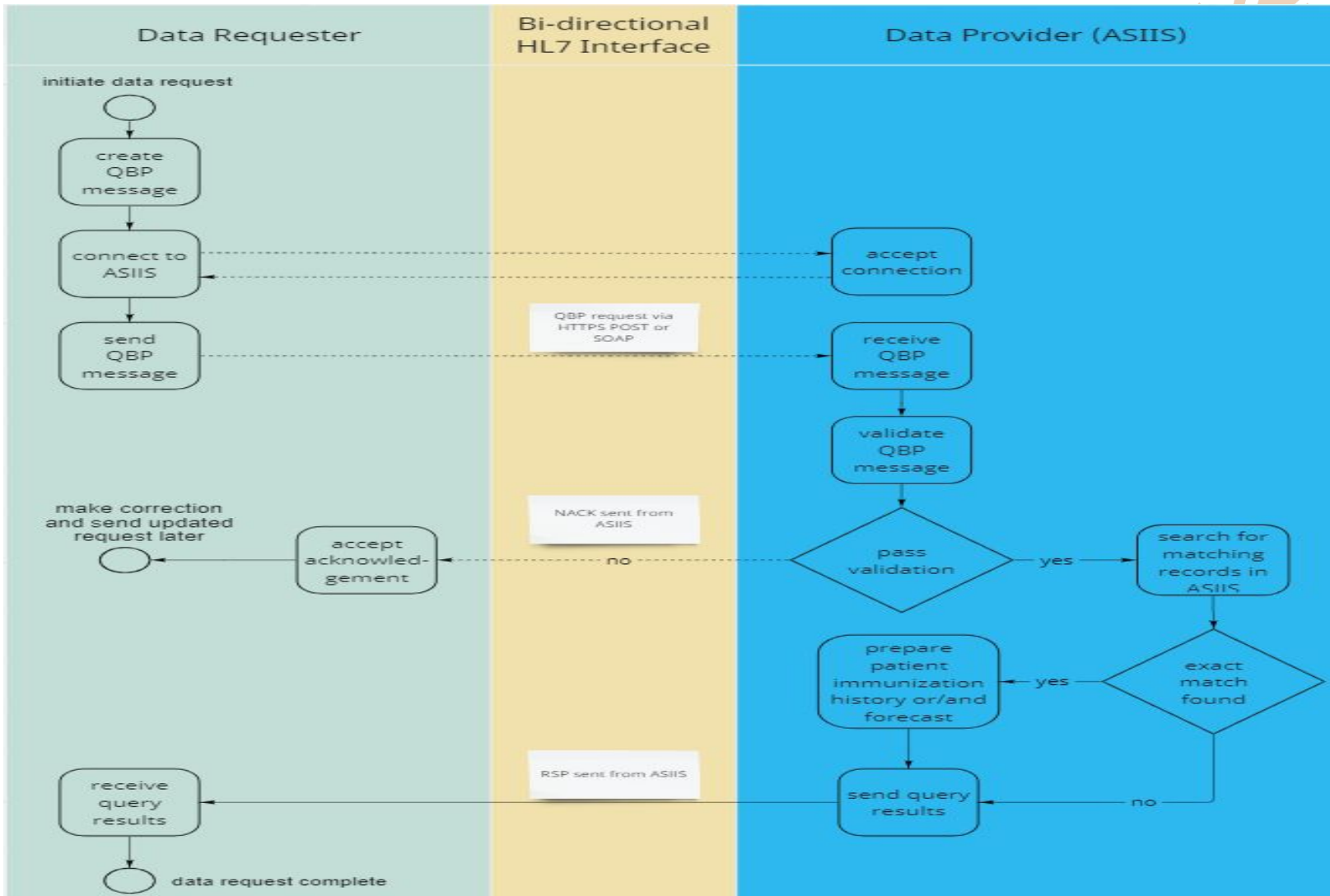
Recommendation: Always complete order receiving process the same day when the shipment arrived.

❑ Is the lot number in question still active in VOMS and has greater than zero dose available

Recommendation: Wait until the available dose becomes zero (0) before de-activating a lot number from inventory. Do not manually adjust the dose on hand amount to zero if reported doses not being deducted from your inventory.

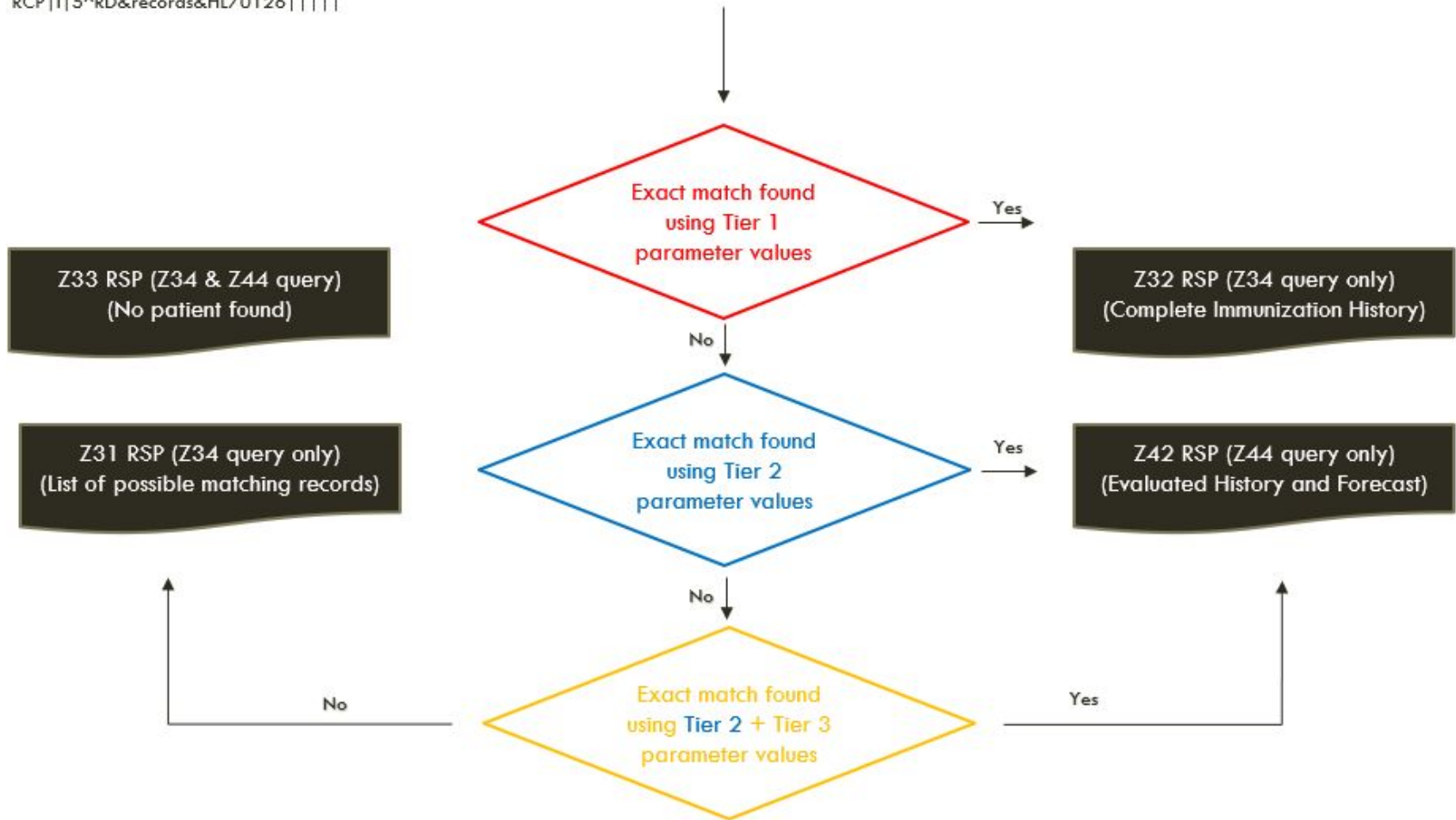


QBP Query Process



Patient Matching Logic

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MSH|^~\&|ASIS|1066|ASIS|ASIS|20220429090910-0700||QBP^Q11^QBP_Q11|X0001|P|2.5.1|||ER|AL|||Z34^CDCPHINVS  
QPD|Z34^Request Immunization History^CDCPHINVS|X0001|1111111111^AAA^MR|CARTMAN^ERIC^THEODORE^AAA^L|CAROL^AAAA^M|19980101|M|1000 S PARK  
AVE^PHOENIX^AZ^85007^USA^M|^PRN^PH^602^2229876|N|1|  
RCP|1|5^RD&records&HL70126|||
```



Common Patient Query Issues

❑ Wrong patient records returned from ASIIS

Possible Causes:

- Patient's medical record number was not unique
- Patient's record was incorrectly merged

❑ No patient record found

Possible Causes:

- Processing delays
- Patient's record was incorrectly merged
- Multiple matching records found for Z44 (Evaluated history & Forecast) query

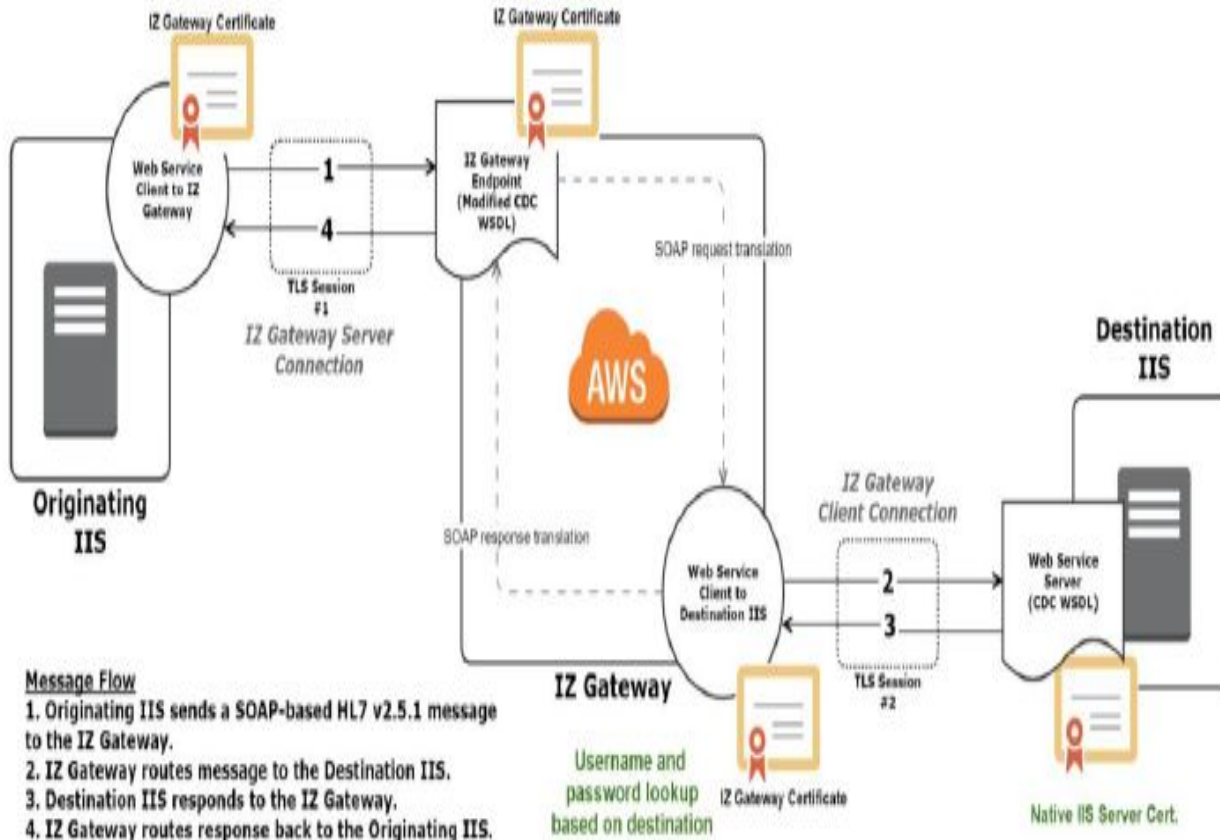
❑ Vaccination history returned was incomplete

Possible Causes:

- Processing delays
- Multiple patient records with partial history



CDC Immunization (IZ) Gateway

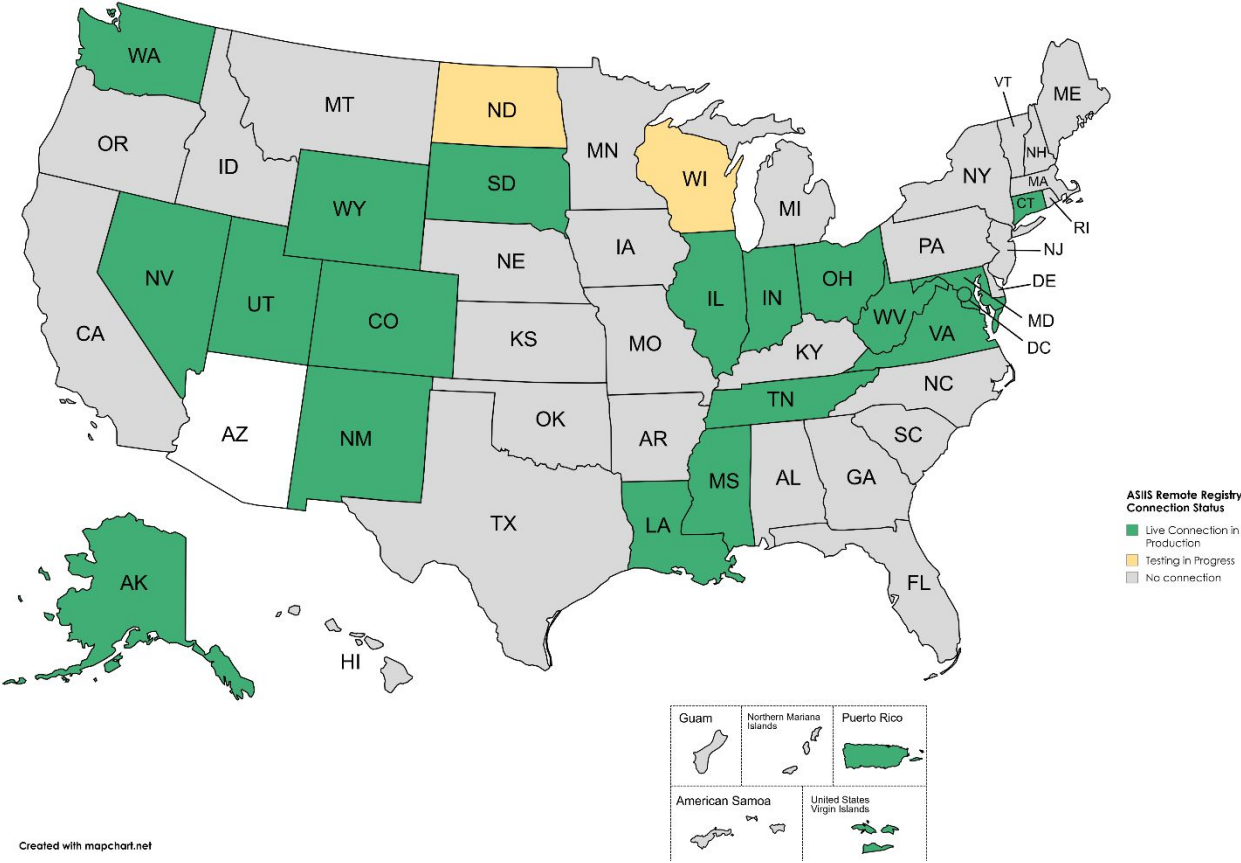


Message Flow

1. Originating IIS sends a SOAP-based HL7 v2.5.1 message to the IZ Gateway.
2. IZ Gateway routes message to the Destination IIS.
3. Destination IIS responds to the IZ Gateway.
4. IZ Gateway routes response back to the Originating IIS.

* Figure 2 from CDC Technical Specifications for Immunization Information Systems (IISs) to Exchange Data via IZ Gateway

Live Remote Registry Connections in ASIIS



Created with mapchart.net

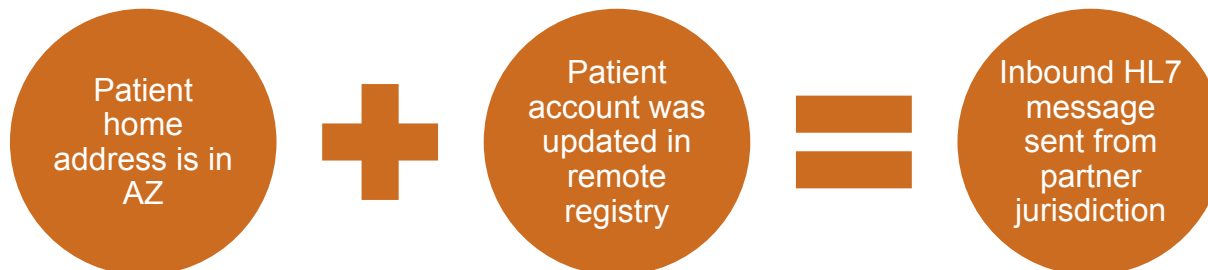


Automated Data Exchange

- ASIS to Remote Registry

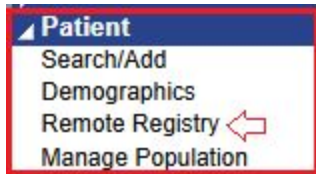


- Remote Registry to ASIS

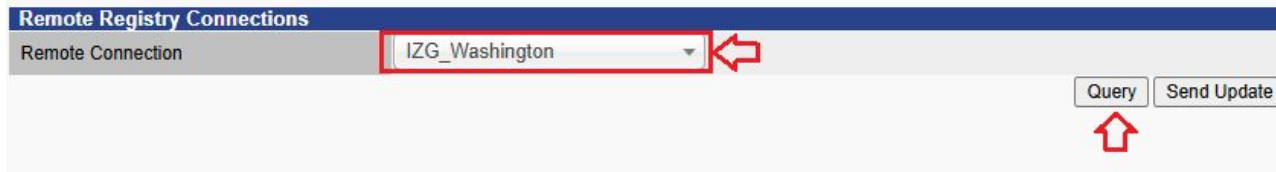


Manual Data Exchange – Patient Query

- Perform normal patient search in ASIIS
- Go to Patient / Remote Registry



- Select remote registry connection
- Click on “Query”



Manual Data Exchange – Query Results

- No matching record found

Remote Registry Connections

Remote Connection: IZG_Washington

Query Send Update

No Patients Found

The remote server found no matching patient records

- Matching record found

Remote Registry Connections

Remote Connection: IZG_Washington

Query Send Update

Patient 1	IZG Washington - Remote	ASIS - Local
Patient ID	12087481	14097566
First name	TOWATWOIZG	TOWATWOIZG
Middle name		
Last name	FROMASIISIZG	FROMASIISIZG
Suffix		
Birth date	09/01/2024	09/01/2024
Sex	M	MALE
Associated Parties		

Get Vaccination Record 1



Manual Data Exchange – Import History

Remote Registry Connections

Remote Connection: Query Send Update

Patient Record	IZG Washington - Remote	ASIS - Local
Patient ID	12069708	14097566
First name	TOWATWOIZG	TOWATWOIZG
Middle name		
Last name	FROMASIISIZG	FROMASIISIZG
Suffix		
Birth date	09/01/2024	09/01/2024
Sex	M	MALE
Primary Facility		
Primary Physician		
Associated Parties		

Vaccinations

Vaccine	CDC / CPT	Date	Facility	Physician
<input type="checkbox"/> DTaP	20 /	11/04/2024		
<input checked="" type="checkbox"/> Hep B, adolescent or pediatric <i>new</i>	08 /	11/05/2024		

Reset Merge Vaccinations

- Vaccination 'Hep B, adolescent or pediatric', administered 11/05/2024 was added

Patient

Name:	TOWATWOIZG FROMASIISIZG	SIIS Patient ID:	14097566
Date of Birth:	09/01/2024	Age:	19 weeks, 4 months, 0 yrs
Guardian:		Organization Level Status:	Active




Manual Data Exchange – Send Update*

- Send updated history to remote IIS

Remote Registry Connections

Remote Connection: IZG_Washington

Query Send Update



- Update request successfully sent

- Patient update message was successfully sent
- Message from remote system: Patient 14097566 "TOWATWOIZG FROMASIIISIZG" with 2 vaccinations accepted into vaccination staging table

Remote Registry Connections

Remote Connection: IZG_Washington

- Update request failed due to account setup issue

- Patient update message was rejected
- Message from remote system: patient address street is missing

Remote Registry Connections

Remote Connection: IZG_Washington

* User specific setup required for this function to work properly



Send Questions and Comments to ASIS_Electronic_Reporting@azdhs.gov



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If you would like to claim CE Credits:

**A QR Code will be displayed in
the MAIN HALL
at the end of the day**

The following CE credits are available:

CMEs for Physicians (Doctors, NPs, PAs)

CE Contact Hours for Nurses (RNs, LPNs)

CMEs for Medical Assistants

Certified Health Education Specialists CEs
(CHES)

Social Worker CEs (National Association of
Social Workers)

Pharmacy Continuing Education

