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TEXAS
Health and Human
Services

**Texas Department of State
Health Services**

Data Quality and Error Resolution

Texas Immunization Registry

Interoperability Team: 1-800-348-9158 Option 3

ImmTracMU@dshs.texas.gov



TEXAS
Health and Human
Services

Texas Department of State
Health Services

Introductions

- Jonathan Patterson – Interface Analyst
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- Paul Spock – Training Coordinator

Terminology

Terminology we will use in this presentation:

- BiDX = Bidirectional data exchange
- FTP = File Transfer Protocol for unidirectional data exchange
- Web Services = A method for reporting data in real-time or BiDX
- Registry = Texas Immunization Registry
- Orgs = Providers, healthcare entities, organizations or sites
- EHR = Electronic Health Records systems

Overview

- Importance of Data Quality and Error Resolution
- Reviewing Errors
- Correcting Errors
- Correcting Common Errors
- COVID-19 Data Quality Errors

ImmTrac2 Identifiers and Org Structure



How Are Orgs Identified?

ImmTrac2 Identifiers

- Each org (aka site) has an:
 - Org Code – Ex: ABCD1234
 - TX IIS ID – EX: 25283288 or 1000040000
- Identifies which orgs are using the system, reporting data and used to provide registry reports.



How Are Orgs Structured? (1 of 3)

Stand-Alone Org

- Has no ties or associations with other orgs.
- Reports patient and immunization data for itself.

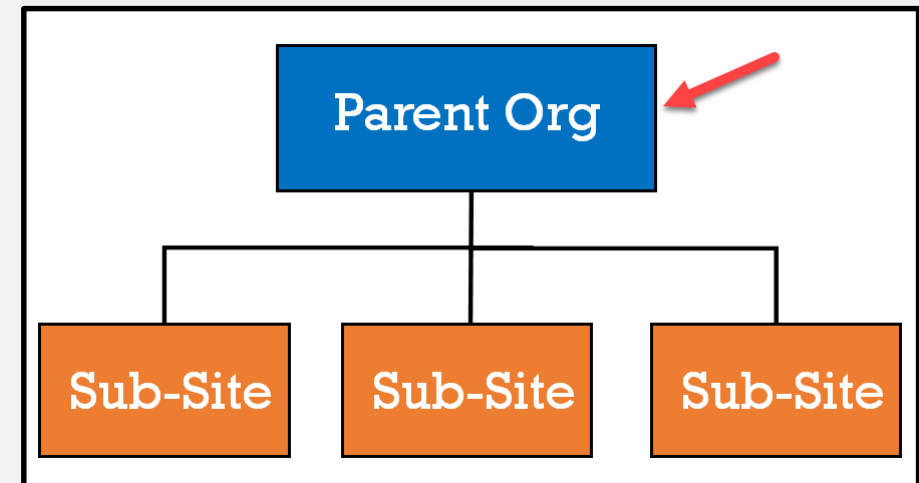


Stand-Alone Org

How Are Orgs Structured? (2 of 3)

Parent Org

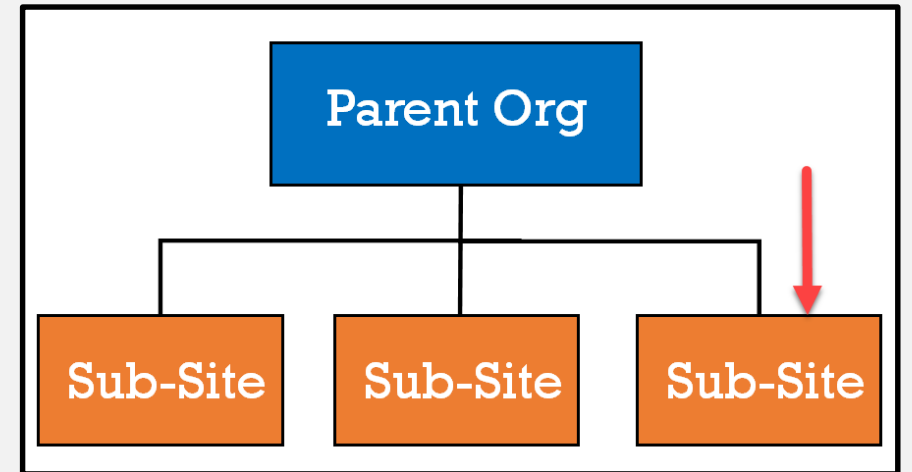
- Has ties or associations with other orgs.
- If using data exchange, reports for itself and other sites within its parent-child hierarchy.
- If reporting online, each site reports for itself but ongoing data quality issues are reported up to the parent org.



How Are Orgs Structured? (3 of 3)

Sub-Site

- Has ties or associations with other orgs and a parent org.
- If using data exchange, its data is reported through the parent org.
- If reporting online, it enters data for itself.



Data Entered Into ImmTrac2



Reporting Methods

Patient and immunization records are reported by Orgs:

- Online via ImmTrac2, or
- Via Data Exchange.



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Reporting Online

Once access has been approved by the registry:

- Users are assigned 1 ImmTrac2 user account,
- A user account is specific to the individual,
- User accounts can access one or many locations, and
- User accounts require three items to login:
 - Org Code
 - Username
 - Password



Reporting via Data Exchange (1 of 3)

- Uses an Electronic Health Records (EHR) program or similar system to extract patient and immunization data.
- Stand-alone or parent orgs are assigned a data exchange account, not sub-sites.
- Data is reported:
 - To the registry utilizing HL7 format,
 - Via FTP or Web Services,
 - Using the TX IIS ID for the sites who are reporting patient and immunization data.



Reporting via Data Exchange (2 of 3)

- Data exchange accounts require the below items to login and report:
 - FTP/Unidirectionally
 - FTP Username aka Import Code
 - FTP Password
 - TX IIS IDs for Parent Org and Child Sites



Reporting via Data Exchange (3 of 3)

Web Services/BiDX

- Parent Orgs Facility ID
- Web Services Username
- Web Services Password
- TX IIS IDs for Parent Org and Child Sites



Data Quality Issues - Online Reporting



Online Reporting Issues

1. Logging in with the wrong org code
2. Incorrect parent and sub-site relationship
3. Lot number entered incorrectly
4. Immunization reported by the wrong org
5. Incorrect date of birth for patient



Issue 1: Logging In With Wrong Org Code

- Users who are associated to multiple orgs log into ImmTrac2 with the wrong Org Code.
- Resulting in adding patients and immunizations to an org that did not see the patient or administer the vaccine.
- Registry reports, vaccine decrementation and other data quality metrics will reflect the correct org as not reporting to the registry.



Resolution: Log In With Correct Org Code

- Once logged into ImmTrac2, users associate to multiple orgs see the Manage Access screen.
- The yellow banner at the top displays the org name that the user is currently logged in under, name of the user and the user's role

The screenshot displays the ImmTrac2 interface. At the top, the Texas Department of State Health Services logo and the ImmTrac2 Texas Immunization Registry branding are visible. A navigation bar includes links for HOME, FORMS, REGISTRATION, and RELATED LINKS. A yellow banner at the top of the main content area displays the current session information: **organization LIGHTHOUSE PEDIATRICS • user Test User • role Full Access Providers no/DE**. Below this banner, a table lists the organizations the user has access to:

Organization	Access Type	Organization Name
ImmTrac2	Manage Access	ABC PEDIATRICS - KILLEEN
ImmTrac2	Manage Access	LIGHTHOUSE PEDIATRICS
ImmTrac2	Manage Access	SUNNYSIDE PEDIATRICS, PLLC
ImmTrac2	Manage Access	WONDER KIDS PEDIATRICS

The left sidebar contains navigation options: Training, Welcome Test User, Logout, Applications (Switch Organizations), and Manage My Account (Edit My User Account, Change My Password).



Issue 2: Parent and Sub-Site Relationship

- If a parent org notices a sub-site not listed under it, then the sub-site is not associated correctly in ImmTrac2.
- If a sub-site notices they are listed under the wrong parent org, then the sub-site is incorrectly associated in ImmTrac2.



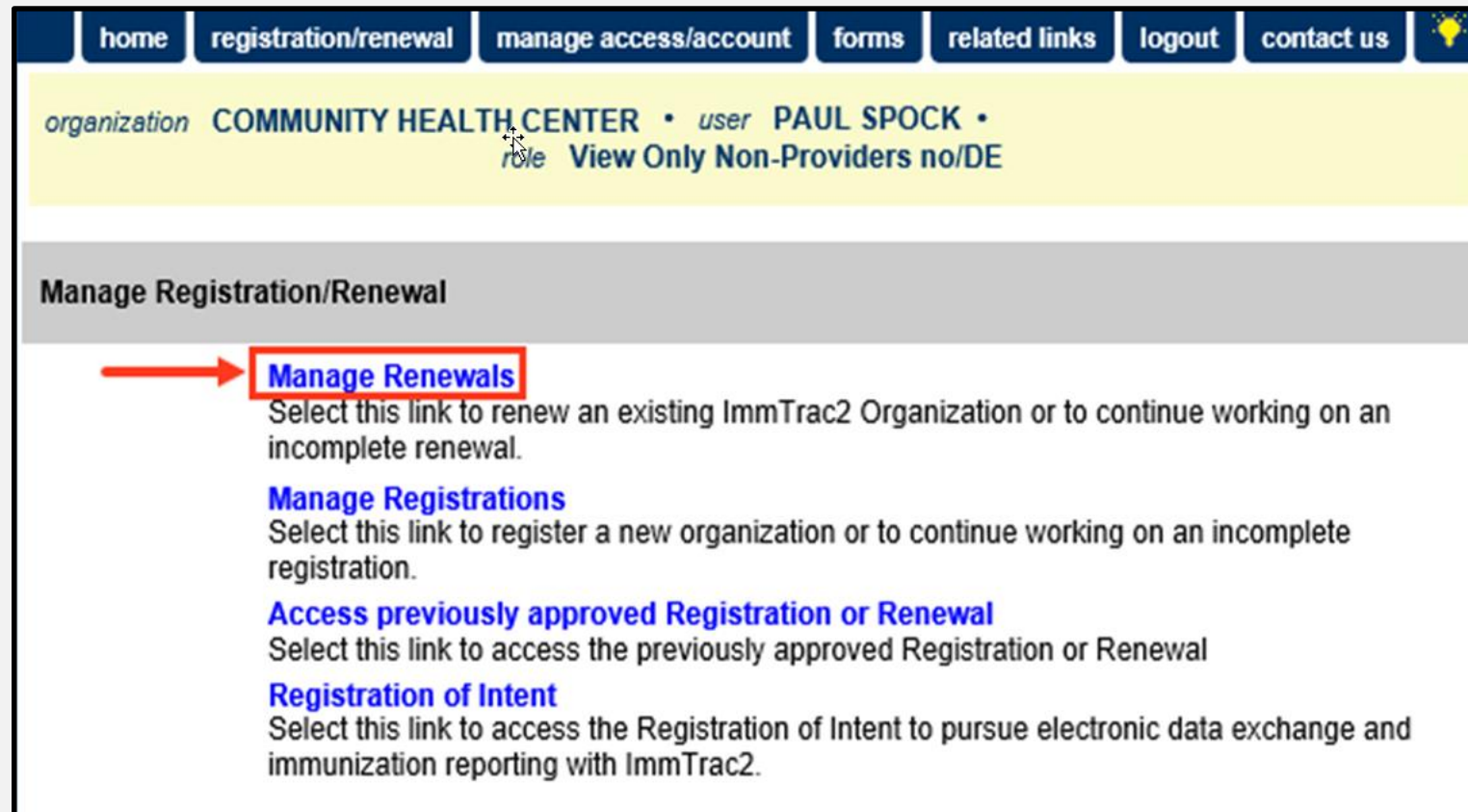
Identifying Parent and Sub-Site Relationship (1 of 4)

- In ImmTrac2, select the **registration/renewal** tab at the top of the screen.



Identifying Parent and Sub-Site Relationship (2 of 4)

- Select the **Manage Renewals** option listed.



The screenshot displays the top navigation bar with links for home, registration/renewal, manage access/account, forms, related links, logout, and contact us. Below the navigation bar, the user's organization is identified as 'COMMUNITY HEALTH CENTER' and the user as 'PAUL SPOCK'. The user's role is listed as 'View Only Non-Providers no/DE'. The main content area is titled 'Manage Registration/Renewal' and contains several options: 'Manage Renewals' (highlighted with a red box and an arrow), 'Manage Registrations', 'Access previously approved Registration or Renewal', and 'Registration of Intent'. Each option includes a brief description of its function.

home registration/renewal manage access/account forms related links logout contact us

organization COMMUNITY HEALTH CENTER • user PAUL SPOCK •
role View Only Non-Providers no/DE

Manage Registration/Renewal

→ **Manage Renewals**
Select this link to renew an existing ImmTrac2 Organization or to continue working on an incomplete renewal.

Manage Registrations
Select this link to register a new organization or to continue working on an incomplete registration.

Access previously approved Registration or Renewal
Select this link to access the previously approved Registration or Renewal

Registration of Intent
Select this link to access the Registration of Intent to pursue electronic data exchange and immunization reporting with ImmTrac2.



Identifying Parent and Sub-Site Relationship (3 of 4)

- If the user is logged in under a parent site, it appears on top with the sub-sites listed below it.
- Parent sites are able to view their org and all their sub-sites information.

Renewals:

When submitting a renewal for an existing organization, please review the information in each section of the application and make any necessary changes or updates. To save your progress and return at a later time to complete the renewal process, select "Save Progress and Exit". To continue working on an incomplete renewal, click the "Incomplete Renewal" link below.

Applications that are left inactive for more than 14 calendar days will be deleted and a new application must be started and saved.

Organization Name	Org Code	Site Agreement Expiration Date	Application Status	Last Edited By	Application Expires
WELLNESS POINTE 040263	WELL0026	12/18/2022	Click to Renew	Holly Davis	
WELLNESS POINTE - MOUNT PLEASANT	NORT0321	01/03/2022	Click to Renew	Holly Davis	
NORTHEAST TEXAS FAMILY HEALTH, A WELLNESS POINTE CLINIC	NORT5986	11/24/2022	Click to Renew		
WELLNESS POINTE/GILMER 040509	WELL0027	12/21/2022	Click to Renew	Holly Davis	
WELLNESS POINTE-KILGORE 040545	WELL0028	12/21/2022	Click to Renew	Holly Davis	
WELLNESS POINTE/SOUTH 040587	WELL3011	12/21/2022	Click to Renew	KIM SMITH	
WELLNESS POINTE GENERAL MEDICINE 040583	WELL3013	12/21/2022	Click to Renew	Holly Davis	
WELLNESS POINTE - PINETREE	WELL4436	12/21/2022	Click to Renew		



Identifying Parent and Sub-Site Relationship (4 of 4)

- If the user is logged in under a sub-site, the parent site appears on top with the sub-site listed below it.
- Sub-sites are only able to view their org and their parent site.

Renewals:

When submitting a renewal for an existing organization, please review the information in each section of the application and make any necessary changes or updates. To save your progress and return at a later time to complete the renewal process, select "Save Progress and Exit". To continue working on an incomplete renewal, click the "Incomplete Renewal" link below.

Applications that are left inactive for more than 14 calendar days will be deleted and a new application must be started and saved.

Organization Name	Org Code	Site Agreement Expiration Date	Application Status	Last Edited By	Application Expires
WELLNESS POINTE 040263	WELL0026	12/18/2022			
WELLNESS POINTE GENERAL MEDICINE 040583	WELL3013	12/21/2022	Click to Renew	Holly Davis	



Resolution: Parent and Sub-Site Relationship

For both issues, contact ImmTrac2@dshs.texas.gov and provide:

- One or more of the sites ImmTrac2 Identifiers for the parent and sub-site,
- Org Code, TX IIS ID or physical addresses, and
- Information on the issue that needs to be resolved.




Issue 3: Incorrect Lot Number Entered

- A user or org identifies that they entered in the incorrect lot number for a vaccine.
- Example: Lot Number allocated to the org was EK5730 but user entered in EK05730.
- For COVID-19 administrations, the lot number must be entered in correctly for proper inventory decrementation.



Resolution: Correct the Lot Number (1 of 2)

- An org who reported the immunization or an org who administers immunizations have the permissions in ImmTrac2 to edit immunizations.
- Locate the ImmTrac2 Client's immunization record and the vaccine with the incorrect lot number.
- Select the **Edit icon** next to the vaccine.

Vaccine Group	Date Admin	Age At Immunization	Series	Vaccine [Trade Name]	Dose	Owned?	Reaction	Hist?	Disaster	Edit
SARS-COV2	12/27/2020	18Y 11M	1 of 2	COVID-19,mRNA,LNP-S,PF,30mcg/0.3mL [Pfizer COVID-19 Vaccine ®]	Full				Yes	



Resolution: Correct the Lot Number (2 of 2)

- The **Edit Immunization** screen displays.
- Locate the **Vaccine Lot Number** field.
- Edit the lot number with the correct lot number.
- Click the **Save** button.

Edit Immunization

Vaccine Group: SARS-COV2
Vaccine Display Name: COVID-19,mRNA,LNP-S,PF,30mcg/0.3mL
Trade Name: Pfizer COVID-19 Vaccine

* Manufacturer: PFR-Pfizer-Wyeth

* Vaccine Lot Number: EK05730

Funding Source:
Dosage From Inventory: Full
Subpotent Dose:

*Date Administered: 12/27/2020

Vaccine Eligibility:

Prescribing Authority:

Prescribed By:

Body Site:

Administered Route:

Source of Immunization: New Immunization Administered
Disregard Primary Series:
VIS Date for SARS-COV2:
Disaster AIM: Yes
Input Source of Record: Created through User Interface Username: AN3745HE

Save
Cancel
Delete

Delete the incorrect lot # and enter the correct lot #




Issue 4: Immunization Entered by Wrong Org Code

- A user or org identifies that they entered in vaccinations under the wrong org code.
- Example: Org who administered COVID-19 vaccinations was NORT0321 but org who reported it was WELS0026.
- For COVID-19 administrations, the org who was shipped and provided allocated must report in ImmTrac2 they administered the vaccinations for proper inventory decrementation.



Resolution: Correct the Org Code Who Administered (1 of 6)

- Log in with the correct Org Code, locate the ImmTrac2 Client's immunization record and the vaccine with the incorrect information.
- Validate if the immunization is reported correctly.
- Under the **Owned?** Column, if it states **No** this means another org reported the immunization.

Vaccine Group	Date Admin	Age At Immunization	Series	Vaccine [Trade Name]	Dose	Owned?	Reaction	Hist?	Disaster	Edit
SARS-COV2	12/27/2020	18Y 11M	1 of 2	S,PF,30mcg/0.3mL [Pfizer COVID-19 Vaccine ®]	Full	No			Yes	



Resolution: Correct the Org Code Who Administered (2 of 6)

- When you select the **No** hyperlink, a pop-up window appears with the Org information of who reported (“owns”) this immunization.

The screenshot shows a web application interface for immunization records. A pop-up window titled "Organization Information..." is open, displaying the following details:

- Org Name: Wellness Pointe 040263
- Address 1: 1107 E Marshall Ave Bldg 1, Longview, TX, 75601
- Address 2:
- Contact Name: Patricia Larson
- Phone Number: (903) 212-4753

A red arrow points from the "No" hyperlink in the immunization record table to the pop-up window.


Immunization Record Table:

Vaccine Group	Date Admin	Age At Immunization	Series	Vaccine [Trade Name]	Dos	Owned?	Reaction	Hist?	Disaster	Edit
SARS-COV2	12/27/2020	18Y 11M	1 of 2	S,PF,30mcg/0.3mL [Pfizer COVID-19 Vaccine ®]	Full	No			Yes	



Resolution: Correct the Org Code Who Administered (3 of 6)

- If this information is incorrect, then close the pop-up window.
- A user from the org who reported it incorrectly must log in and locate the immunization needing to be corrected.
- Select the **Edit icon** next to the vaccine to delete the immunization.

Vaccine Group	Date Admin	Age At Immunization	Series	Vaccine [Trade Name]	Dose	Owned?	Reaction	Hist?	Disaster	Edit
SARS-COV2	12/27/2020	18Y 11M	1 of 2	COVID-19,mRNA,LNP-S,PF,30mcg/0.3mL [Pfizer COVID-19 Vaccine ®]	Full				Yes	



Resolution: Correct the Org Code Who Administered (4 of 6)

- The **Edit Immunization** screen displays.
- Locate and press the **Delete** button.

Edit Immunization

Vaccine Group: SARS-COV2 Save

Vaccine Display Name: COVID-19,mRNA,LNP-S,PF,30mcg/0.3mL Cancel

Trade Name: Pfizer COVID-19 Vaccine Delete

* Manufacturer: PFR-Pfizer-Wyeth

* Vaccine Lot Number: EK5730

Funding Source:

Dosage From Inventory: Full

Subpotent Dose:

*Date Administered: 12/27/2020

Vaccine Eligibility:

Prescribing Authority:

Prescribed By:

Body Site:

Administered Route:

Source of Immunization: New Immunization Administered

Disregard Primary Series:

VIS Date for SARS-COV2:

Disaster AIM: Yes

Input Source of Record: Created through User Interface Username: AN3745HE



Resolution: Correct the Org Code Who Administered (5 of 6)

- A pop-up window appears asking **“Are you sure you want to delete this immunization?”**
- Press the **OK** button to proceed with the deletion.

training-immtrac.dshs.texas.gov says

Are you sure you want to delete this immunization?

OK

Cancel



Resolution: Correct the Org Code Who Administered (6 of 6)

- The immunization is deleted, verify by looking at the immunization record.

Immunization Record Tracking Schedule

Vaccine Group	Date Admin	Age At Immunization	Series	Vaccine [Trade Name]	Dose	Owned?	Reaction	Hist?	Disaster	Edit
This client record has no immunizations associated with it.										

Vaccines Recommended by Selected Tracking Schedule

Select	Vaccine Group	Vaccine	Earliest Date	Recommended Date	Past Due Date
--------	---------------	---------	---------------	------------------	---------------

- For COVID-19, you must immediately add the correct data to retain the patient in the system.
- A user associated to the correct Org, must log in and enter the immunization immediately.



Issue 5: Incorrect DOB for Patient

- If the DOB error doesn't change the ImmTrac2 Client from a minor to an adult or vice versa, simple edits can be made to correct the issue.
 - Example: DOB listed is 01/01/2002 but should be 01/10/2002.
- Go to the Client's record and verify DOB.
- Select the **Edit Client** button.

The screenshot displays a web form for 'Personal Information' with the following fields and values:

* First Name	JOHNNY	* Gender	MALE
* Last Name	GHOSTWRITER	SSN	- - -
Middle Name		Medicaid ID	
Suffix		Birth Order	(for multiple births)
* Birth Date	01/01/2002	Birth Country	UNITED STATES
Mother's Maiden Last	WRITE	Birth State	

On the right side of the form, there is a 'Return to Search' button and a vertical stack of action buttons: 'Edit Client' (highlighted with a red box), 'Immunizations', 'Edit Consent', 'Reports', and 'Delete Client'.



Resolution: Correct DOB for Patient (1 of 2)

- Make the correction to the DOB.
 - Example: Corrected to 01/**10**/2002.
- Select the **Save** button.

The screenshot shows a 'Personal Information' form with the following fields and values:

* First Name	JOHNNY	* Gender	MALE
* Last Name	GHOSTWRITER	SSN	- -
Middle Name		Medicaid ID	
Suffix		Birth Order	(for multiple births)
* Birth Date	01/10/2002	Birth Country	UNITED STATES
Mother's Maiden Last	WRITE	Birth State	
* Mother's First Name	JOHNNY	Birth County	
Client Type	DU - Disaster Un-con:	Client Identifier	235853815
ImmTrac2 Client	No	ImmTrac2 ID	235853815
		Disaster Client	Yes

Annotations: A red box highlights the 'Save' button in the top right corner. A red box highlights the 'Birth Date' field, which contains '01/10/2002'. A red arrow points to the '10' in the date field.



Resolution: Correct DOB for Patient (2 of 2)

- If the DOB error **DOES** change the ImmTrac2 Client from a minor to an adult or vice versa then contact the registry for assistance in deleting the data.
- Contact us via ImmTracMU@dshs.Texas.gov
- Subject line of “COVID DOB Correction – Org Code [Enter Here] “ then enter your Org Code.
- Deletion of clients can only be done at the state level.
- Once the state has deleted the client, then you must re-add the patient and their immunization to ImmTrac2 correctly.



Data Exchange Reporting Overview



Reporting via Data Exchange

- Uses an Electronic Health Records (EHR) vendor or similar system to extract data.
- Data is reported to the registry utilizing HL7 format.
- Data is reported via FTP or Web Services.



Date Exchange Overview (1 of 4)

- Messages are reviewed for data quality issues (aka errors) before being added to ImmTrac2.
 - File rejection (FIR)
 - Message rejection (MER)
 - Client rejection (CLR)
 - Immunization rejection (IMR)
 - Informational error or warning (IEE)



Data Exchange Overview (2 of 4)

- Informational Errors – data quality
 - Does not prevent data from being added to ImmTrac2
- Rejection Errors – significant problems
 - Prevents data from being added to ImmTrac2
 - Must be identified and corrected by orgs



Data Exchange Overview (3 of 4)

- Once ImmTrac2 identifies errors, orgs receive a response for them to identify and resolve these errors.
- For orgs using FTP, three reports are generated per batch file:
 - HL7 Report aka Data Quality Analysis (DQA) reports
 - Consent Notification File (CNF)
 - Response (raw) error report



Data Exchange Overview (4 of 4)

- For orgs using BiDX, responses sent immediately to your Org via your EHR and per message.
 - Response (raw) error report
- Contact your EHR vendor about accessing and reviewing your error logs.



Data Quality Reports – Data Exchange Reporting



Reviewing Errors (1 of 7)

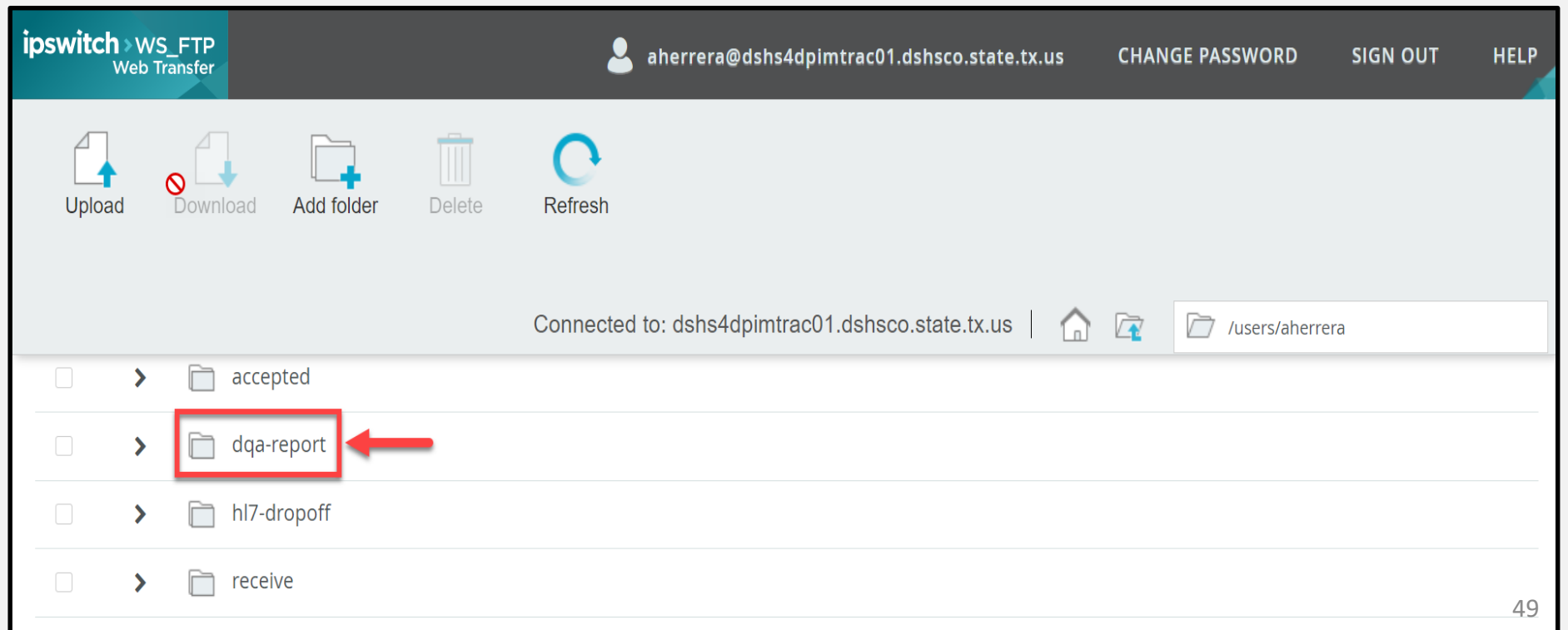
FTP Orgs:

- At least once per week, a user from your organization must access the registry's FTP website to download and review any new DQA reports.
- DQAs should be opened using an advanced text editor such as *'Notepad++'* or *'Programmer's File Editor'* (PFE).



Reviewing Errors (2 of 7)

- Log into registry's website.
- Click on the **dqa-report** folder.



The screenshot displays the ipswitch Web Transfer interface. The top navigation bar includes the ipswitch logo, the text 'WS_FTP Web Transfer', and the user email 'aherrera@dshs4dpimtrac01.dshsco.state.tx.us'. Action links for 'CHANGE PASSWORD', 'SIGN OUT', and 'HELP' are also present. Below the navigation bar is a toolbar with icons for 'Upload', 'Download', 'Add folder', 'Delete', and 'Refresh'. The main area shows the connection path: 'Connected to: dshs4dpimtrac01.dshsco.state.tx.us' and the current directory: '/users/aherrera'. A list of folders is displayed: 'accepted', 'dqa-report', 'hl7-dropoff', and 'receive'. The 'dqa-report' folder is highlighted with a red box, and a red arrow points to it from the right.



Reviewing Errors (3 of 7)

- The **dqa-report** folder is opened showing all available reports.
- Click on the **dqa-report (.HL7.Report.txt)** you want to open.



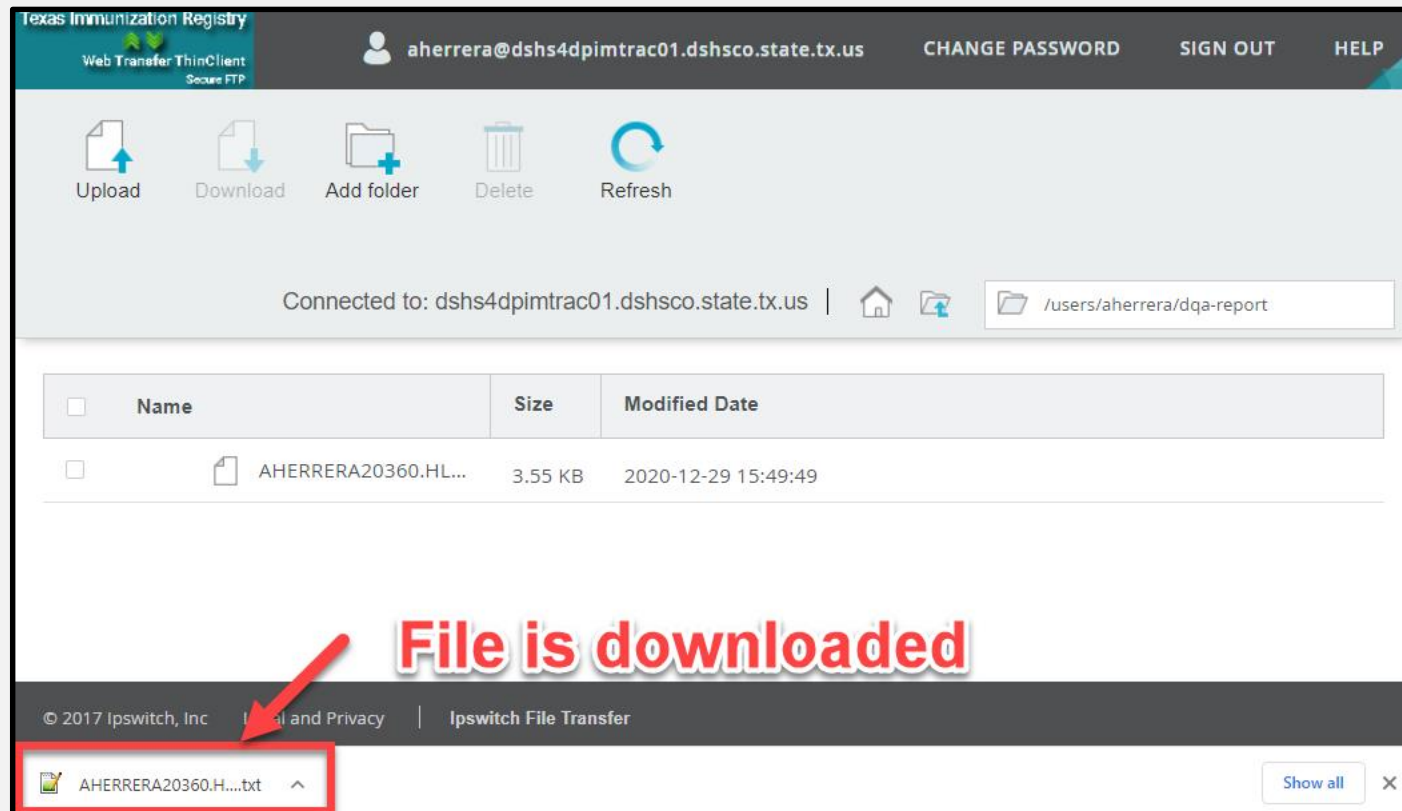
The screenshot displays the ipswitch Web Transfer interface. The top navigation bar includes the ipswitch logo, the user's email address (aherrera@dshs4dpimtrac01.dshsco.state.tx.us), and links for CHANGE PASSWORD, SIGN OUT, and HELP. Below the navigation bar is a toolbar with icons for Upload, Download, Add folder, Delete, and Refresh. The main area shows a file list for the directory /users/aherrera/dqa-report. The file AHERRERA20360.HL7.Report.txt is highlighted with a red box and a red arrow pointing to it. The file details are: 3.55 KB and 2020-12-29 15:49:49.

File Name	Size	Modified
<input type="checkbox"/> AHERRERA20360.HL7.Report.txt	3.55 KB	2020-12-29 15:49:49



Reviewing Errors (4 of 7)

- The **dqa-report (.HL7.Report.txt)** you selected is automatically downloaded.



The screenshot displays the Texas Immunization Registry web interface. At the top, it shows the user 'aherrera@dshs4dpimtrac01.dshsco.state.tx.us' and options for 'CHANGE PASSWORD', 'SIGN OUT', and 'HELP'. Below the navigation bar are icons for 'Upload', 'Download', 'Add folder', 'Delete', and 'Refresh'. The main content area shows the user is connected to 'dshs4dpimtrac01.dshsco.state.tx.us' and is viewing the directory '/users/aherrera/dqa-report'. A table lists the files in the directory:

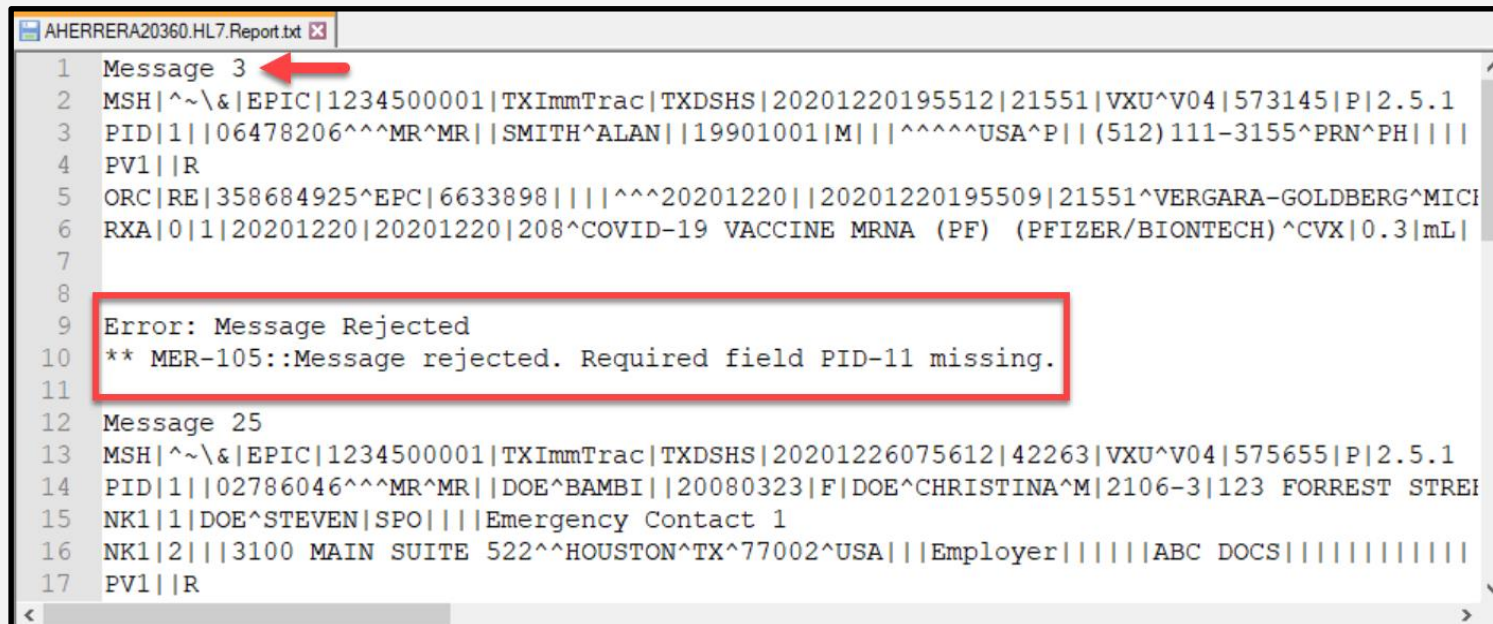
<input type="checkbox"/>	Name	Size	Modified Date
<input type="checkbox"/>	AHERRERA20360.HL...	3.55 KB	2020-12-29 15:49:49

A red arrow points from the text 'File is downloaded' to a notification box at the bottom of the interface. The notification box contains the text 'AHERRERA20360.H...txt' and a small upward-pointing arrow. The footer of the interface includes copyright information for Ipswitch, Inc. and a 'Show all' button.



Reviewing Errors (5 of 7)

- Open the dqa report file and see the file structure:
 - HL7 Message
 - Rejection errors for that message
 - Informational Errors for that message



A screenshot of a text editor window titled "AHERRERA20360.HL7.Report.txt". The window displays an HL7 message and its rejection error. The message is as follows:

```
1 Message 3
2 MSH|^~\&|EPIC|1234500001|TXImmTrac|TXDSHS|20201220195512|21551|VXU^V04|573145|P|2.5.1
3 PID|1||06478206^^^MR^MR||SMITH^ALAN||19901001|M||^ USA^P|| (512) 111-3155^PRN^PH|||
4 PV1||R
5 ORC|RE|358684925^EPC|6633898|||^^^20201220||20201220195509|21551^VERGARA-GOLDBERG^MICH
6 RXA|0|1|20201220|20201220|208^COVID-19 VACCINE MRNA (PF) (PFIZER/BIONTECH)^CVX|0.3|mL|
7
8
9 Error: Message Rejected
10 ** MER-105::Message rejected. Required field PID-11 missing.
11
12 Message 25
13 MSH|^~\&|EPIC|1234500001|TXImmTrac|TXDSHS|20201226075612|42263|VXU^V04|575655|P|2.5.1
14 PID|1||02786046^^^MR^MR||DOE^BAMBI||20080323|F|DOE^CHRISTINA^M|2106-3|123 FORREST STREI
15 NK1|1|DOE^STEVEN|SPO|||Emergency Contact 1
16 NK1|2|||3100 MAIN SUITE 522^^HOUSTON^TX^77002^USA|||Employer|||||ABC DOCS|||||
17 PV1||R
```

The error message is highlighted with a red box. A red arrow points to the "Message 3" label in the first line of the message.



Reviewing Errors (6 of 7)

- An HL7 message contains one client's (patient's) information and any immunizations your organization reported.
 - The patient's name is in the **PID** line.
 - The immunization is in the **RXA** line.

```
AHERRERA20360.HL7.Report.txt x
1 Message 3
2 MSH|^~\&|EPIC|123450001|TXImmTrac|TXDSHS|20201220195512|21551|VXU^V04|573145|P|2.5.1
3 PID|1||06478206^^^MR^MR||SMITH^ALAN||19901001|M|||^^^USA^P|||(512)111-3155^PRN^PH|||
4 PV1||R
5 ORC|RE|358684925^EPC|6633898|||^^^20201220||20201220195509|21551^VERGARA-GOLDBERG^MIC
6 RXA|0|1|20201220|20201220|208^COVID-19 VACCINE MRNA (PF) (PFIZER/BIONTECH)^CVX|0.3|mL|
7
8
9 Error: Message Rejected
10 ** MER-105::Message rejected. Required field PID-11 missing.
11
```



Reviewing Errors (7 of 7)

- Errors have an alpha numeric code followed by a short description. Example: MER-105::Message Rejected. Required field PID-11 missing.
- The short description can give you additional details to help understand what caused the error.

```
AHERRERA20360.HL7.Report.txt
1 Message 3
2 MSH|^~\&|EPIC|1234500001|TXImmTrac|TXDSHS|20201220195512|21551|VXU^V04|573145|P|2.5.1
3 PID|1||06478206^^^MR^MR||SMITH^ALAN||19901001|M|||^^^USA^P|| (512) 111-3155^PRN^PH|||
4 PV1||R
5 ORC|RE|358684925^EPC|6633898|||^^^20201220||20201220195509|21551^VERGARA-GOLDBERG^MICI
6 RXA|0|1|20201220|20201220|208^COVID-19 VACCINE MRNA (PF) (PFIZER/BIONTECH)^CVX|0.3|mL|
7
8
9 Error: Message Rejected
10 ** MER-105::Message rejected. Required field PID-11 missing.
11
```



HL7 Error Guide



The Texas Immunization Registry:

Health Level Seven Error Guide for Electronic Data Exchange



Using the HL7 Error Guide

- Errors are organized by their error categories (FIR, CLR, IMR, MER, IEE) with a table of contents at the beginning.
- The table of contents links directly to the error.

IMR: Immunization Rejection Errors	40
IMR-100.....	40
IMR-101.....	41
IMR-102.....	41
IMR-103.....	41
IMR-104.....	42
IMR-105.....	42



Using the HL7 Error Guide cont.

Short Description

IMR-124

Error Code

Acknowledgement Code

Message: IMR-124::Immunization Rejected. Vaccine administration date is required.

ACK Code: AE

Explanation of Error

Explanation: Administration date is crucial in identifying when a vaccine was given. It is important that the date being entered is the actual date the vaccine was given and not the date that it was recorded.

Solution to Fix Error

How to Fix: Input administration date in the RXA-3 field.

Example: RXA|0|1|20190817|20190817|20^DTaP^CVX|1.0

Example of Corrected HL7



Troubleshooting Error Resolution

- Use data exchange resources.
- **ALL** errors must be corrected once identified.
- Review your documentation.
- Review your workflow.
- Collaborate with your EHR Vendor.
- Contact the registry if your EHR and IT Support team cannot resolve the error.



Data Quality Issues – Data Exchange Reporting



Data Exchange Issues

1. Incorrect parent and sub-site relationship
2. Reporting the wrong parent TX IIS ID in messages
3. Reporting the wrong code TX IIS ID as administered the immunization
4. Lot number entered incorrectly
5. Incorrect date of birth for patient
6. Missing or incorrect county of residence for patient
7. Missing or incorrect race and ethnicity for patient



Issue 1: Incorrect Parent/Sub-site Relationship

- Data reported via a specific data exchange account must have a Parent/Sub-site relationship in ImmTrac2.
- If the relationship is missing in ImmTrac2, the sub-site's records will be rejected.

```
Message 55
MSH|^~\&|Epic|1234500001|TXImmTrac|TxDSHS|20200109170126|2264|VXU^V04^VXU_V04|174507|P|2.5.1
PID|1||1187802|Epic^MR||PIGLET^PEGGY^SUE^^^^L||19760131|F|BARN^MARGIE^D^|2131-4^Unreported/Refused to Report^HL70005|105 COUNTRY FARM^^WACO^TX^
NK1|1|BARN^BEN^^^^L|BROTHER||^7^^512^3154130|||||||||||||||||||||||||||||||||||||||||
PV1||R|||||||||||||||||||||
ORC|RE|13859933^EPC|2964551^FAMILY HEALTH CENTER|||^^20191205^^^||20191205105454|2264^HERNANDEZ^ERICA^^|4041^DOEL^JASON^^|101^^20^^^BTEAM|
RXA|0|1|20191205|20191205|150^INFLUENZA QUADRIVALENT^CVX|999||00^New immunization record^NIP001~|2675^VENCES^ERICA^^|101^^1234500020^^^BTEAM|
RXR|IM|LD

Error: Message Rejected
** MER-400::Message rejected. The provider organization that initiated this data exchange is not identified as a parent or vendor of the organiza
```



Resolution: Correct the Parent/Sub-site Relationship

- Submit a site agreement renewal in ImmTrac2 to set up the missing Parent/Subsite relationship.
- Instructions are on page 10 of the *ImmTrac2 Site Renewal Guide*.
- Contact the registry for support (if necessary).
- Once the relationship is corrected, resend the rejected messages for reprocessing.



Issue 2: Reporting Wrong Parent TX IIS ID in Messages

- MSH-4 identifies the parent org's TX IIS ID indicating ownership of the data exchange account.
- If a sub-site's TX IIS ID is in MSH-4, the message is rejected:
 - **MER-403::Message Rejected.** The “Sending Facility” in MSH-4 is a child organization; it should instead be the parent organization.

```
Message 70
MSH|^~\s|ATHENANET|1113922000|TxImmTrac|TxDSHS|202012251714||VXU^V04^VXU_V04|14595147M19704|P|2.5.1|||ER|AL|||
PID|1||231049^athenanet^TX^BRITE^RAINBOW^L||20170520|F||HL70005|1005 CRAYOLA LANE^SPRING^TX^77386^USA^P^TX339|^PRN^PH^^5
PD1|||||01^No reminder/re...
NK1|1|CRAYON^RED^L|GRD^GRD^HL70005|1005 CRAYOLA LANE^SPRING^TX^77386^USA^P^PRN^PH^^512^1110136|20170520|
ORC|RE|2687363H19704^athenanet|2687363H19704^athenanet|NA^L||1376001305^TELLEZ^MICHAEL^NPI^L^NPI||
RXA|0|1|20201223|20201223|150^influenza, injectable, quadrivalent, preservative free^CVX|999|^100^NEW IMMUNIZATION RECORD^NIP001|^R
RXR|C28161^Intramuscular^NCIT^IM^Intram...
OBX|1|CE|64994-7^Vaccine funding program...
OBX|2|TS|29769-7^DATE VACCINE INFORMATION STATEMENT PUBLISHED^LN|2|20201223|VXC40^Eligibility
OBX|3|TS|29768-9^DATE VACCINE INFORMATION STATEMENT PUBLISHED^LN|2|20190815|VXC40^Eligibility
OBX|4|CE|30956-7^SINGLE VACCINE TYPE^LN|2|150^influenza, injectable, quadrivalent, preservative free^CVX|999|^100^NEW IMMUNIZATION RECORD^NIP001|^R
```

MSH-4 value is the TX IIS ID of a sub-site. The parent org's TX IIS ID should be reported here.

```
Error: Message Rejected
** MER-403::Message rejected. The "SENDING FACILITY" in MSH-4 is a child organization; it should instead be the parent organization.
```



Resolution: Report Correct Parent TX IIS ID in Messages

- Contact your IT Support and EHR vendor to update MSH-4.
- Inform them that MSH-4 must always be the parent org's TX IIS ID.
- Once corrected, resend the rejected messages for reprocessing.



Issue 3: Reporting Wrong TX IIS ID as Administered the Immunization

- TX IIS ID populated in RXA-11.4 signifies that org administered the vaccination reported.
- ImmTrac2 does not validate whether the RXA-11.4 is the correct org based on vaccine reported or lot number.
- These issues are not flagged as an error in your DQA reports.
- ImmTrac2 only validates if the TX IIS ID in RXA-11.4 is associated to the parent org.

This TX IIS ID is a subsite of the parent but did not administer the vaccine. The correct TX IIS ID that administered the

vaccine is 1234500012



```
MSH|^~\&|EPIC|1234500001|TXImmTrac|TXDSHS|20201226075612|42263|VXU^V04|575655|P|2.5.1
PID|1||02786046^^MR^MR||DOE^BAMBI||20080323|F|DOE^CHRISTINA^M|2106-3|123 FORREST STREET^MAGNOLIA^1
NK1|1|DOE^STEVEN|SPO|||Emergency Contact 1
NK1|2||3100 MAIN SUITE 522^HOUSTON^TX^77002^USA||Employer||||ABC DOCS|||||||95|Fu
PV1||R
ORC|RE|147248913^EPC|6653765|||^^^20201226||20201226075612|42263^MOREAU^MICHAELA||4877^RAZA^SYED^AHSUN|1020250018^^^1020250018^SLWH PHARMACY|(936)
RXA|0|1|20201226|20201226|207^COVID-19 VACCINE MRNA (PF) (MODERNA)^CVX|0.5|mL||00^New Immunization Record^NCIRD001|^1234500010|||037K20A||MOD^Mod
```



COVID-19: Incorrect Reporting Org

- COVID-19 immunizations must be reported by the org they were allocated to.
- COVID-19 immunizations reported by other sites will not decrement from VAOS.
- The reporting org is identified by the administering org's TX IIS ID in RXA-11.4



Resolution: Correcting the TX IIS ID As Administered the Immunization

- Work with IT Support and EHR vendor to map all subsites with the correct TX IIS ID.
- Org sends incorrect data with a deletion indicator in RXA-21 to remove incorrect data from ImmTrac2.
- Org sends corrected data, the correct TX IIS ID in RXA-11.4 to add the correct data to ImmTrac2.



Issue 4: Lot Number Entered Incorrectly

- ImmTrac2 does not validate whether the lot number reported in RXA-15 is valid or correct.
 - Not flagged as an error in your DQA reports.
- Registry staff perform high-level analysis for COVID-19 immunizations to determine if lot numbers reported match what was allocated.
- The lot number reported to ImmTrac2 must be **exactly** as listed on the medication in order to decrement in VAOS.



COVID-19: Incorrect Lot Number

Example: Org received a COVID-19 allocation with lot number **EK5730** but reported:

- Unnecessary spaces: EK 5730
- Swapped characters: EK5**37**0
- Additional characters: EK**0**5370
- Incorrect characters: EK**S**730
- Anything other than the lot number: **Unknown**

```
MSH|^~\&|EPIC|1234500001|TXImmTrac|TXDHS|20201220195512|21551|VXU^V04|573145|P|2.5.1
PID|1||06478206^^MR^MR||SMITH^ALAN||19901001|M||^USA^P|(512)111-3155^PRN^PH|||||N||||N
FV1||R
ORC|RE|358684925^EPC|6633898|||^20201220||20201220195509|21551^VERGARA-GOLDBERG^MICHELLE||10526^LEMBCKE^BRADLEY^THOMAS|1020110068^^1020110^^^^PHAR
RXA|0|1|20201220|20201220|208^COVID-19 VACCINE MRNA (PF) (PFIZER/BIONTECH)^CVX|0.3mL||00^New Immunization Record^NCIRD001|^1234500010|||EK573|PFR
```



Resolution: Update the Correct Lot Number

- Retrain staff to enter the lot number in EHR as it appears on the medication.
- Make corrections in EHR with the accurate lot number.
- Resend the immunization records with the corrected lot number.
- As long as the only change made is the corrected lot number, ImmTrac2 updates the existing information and does not create a duplicate immunization.



Issue 5: Incorrect DOB for Patient (1 of 2)

- Future DOB
 - DQA Report populates **CLR-303:: Client Rejected. Invalid date of birth. Must be prior to or equal to today.**

```
Message 65
MSH|^~\&|Epic|1234500001|TXImmTrac|TxDSHS|20200109170126|2264|VXU^V04^VXU_V04|174507|P|2.5.1
PID|1||1187802^^^EPIC^MR||PIGLET^BARNEY^^^^^L|20200131|M|BARN^MARGIE^D^|2131-4^Unreported/Refused to Report^HL70005|105 COUNTRY FARM
NK1|1|BARN^BEN^^^^^L|BROTHER||^7^^^512^3154130|||||||||||||||||||||||||||||||||||||||||
PV1|R|||||||||||||||||||||
ORC|RE|13859933^EPC|2964551^FAMILY HEALTH CENTER|||^^^20191205^^^^||20191205105454|2264^HERNANDEZ^ERICA^^|4041^DOEL^JASON^^|101^^^2
RXA|0|1|20191205|20191205|150^INFLUENZA QUADRIVALENT^CVX|999||00^New immunization record^NIP001~|2675^VENCES^ERICA^^|101^^^123450002
RXR|IM|LD
```

```
Error: Message Rejected
** CLR-303::Client rejected. Invalid date of birth. Must be prior to or equal to today.
```



Issue 5: Incorrect DOB for Patient (2 of 2)

- Incorrect DOB for age
 - ImmTrac2 does not validate whether the age is appropriate for the immunization via data exchange.
 - Not flagged as an error in your DQA reports.
 - Registry staff performing high-level analysis for COVID-19 patients to determine if the age matches priority groups being immunized.

```
MSH|^~\&|EPIC|1234500001|TXImmTrac|TXDSSH|20201226075612|42263|VXU^V04|575655|P|2.5.1
PID|1||02786046^^^MR^MR||DOE^BAMBI|20200323|F|DOE^CHRISTINA^M|2106-3|123 FORREST STREET^^MAGNOLIA^TX^77354^USA^P||
NK1|1|DOE^STEVEN|SPO||||Emergency Contact 1
NK1|2||3100 MAIN SUITE 522^^HOUSTON^TX^77002^USA||Employer|||||ABC DOCS|||||||||||||95|Fu
FV1||R
ORC|RE|147248913^EPC|6653765||||^^^20201226||20201226075612|42263^MOREAU^MICHAELA||4877^RAZA^SYED^AHSUN|1020250018^
RXA|0|1|20201226|20201226|207^COVID-19 VACCINE MRNA(PF) (MODERNA)^CVX|0.5|mL||00^New Immunization Record^NCIRD001||
```



Resolution: DOB for Patient (1 of 2)

- Retrain staff to enter the patient information in EHR accurately.
- Make corrections in EHR with the accurate DOB.
- Resend the patient and immunization records with the corrected DOB.



Resolution: DOB for Patient (2 of 2)

- Incorrect DOB for age:
 - This causes a change to the ImmTrac2 Client from a minor to an adult or vice versa.
 - Contact the registry via ImmTracMU@dshs.Texas.gov for assistance in deleting the data.
 - Subject line of “COVID DOB Correction – Org Code [Enter Here] “ then enter your Org Code.
 - Deletion of clients can only be done at the state level.
 - Once the state has deleted the client, then you must resubmit the corrected patient and their immunization to ImmTrac2.



Issue 6: Missing or Incorrect County of Residence for Patient (1 of 2)

- ImmTrac2 does not validate whether the patient's county of residence is missing or incorrect in PID-11.9.
 - Not flagged as an error in your DQA reports.
- Registry staff perform high-level analysis for COVID-19 immunizations to determine if county of residence is missing or incorrect.
- Results in state and DSHS county level of reporting to be inaccurate.



Issue 6: Missing or Incorrect County of Residence for Patient (2 of 2)

- Example 1: Patient's address is reported with no county in PID-11.9.

```
MSH|^~\&|EPIC|1234500001|TXImmTrac|TXDSHS|20201226075612|42263|VXU^V04|575655|P|2.5.1
PID|1||02786046^^^MR^MR||DOE^BAMBI||20200323|F|DOE^CHRISTINA^M|2106-3|123 FORREST STREET^^MAGNOLIA^TX^77354^USA^P|||(512)
NK1|1|DOE^STEVEN|SPO|||Emergency Contact 1
NK1|2|||3100 MAIN SUITE 522^^HOUSTON^TX^77002^USA||Employer|||||ABC DOCS|||||||||||||95|Fu
```

- Example 2: Patient's address is reported with county of residence spelt out, not using FIPS County Codes.

```
MSH|^~\&|EPIC|1146780024|TxImmTrac|TxDSHS|20201226123844|4563|VXU^V04|955272|P|2.4
PID|1||20037826^^^EPI^MR||RAILWAY^THOMAS^A^^^L|M|20000315|M|RAILWAY^THOMAS|2106-3|White^HL70005|2300 TRAIN CROSSING^^SAN ANGELO^TX^76904^USA^P^^TOM GREEN||^PRN^
PD1||URGENT CARE SOUTH^^101023|100322^WAGNON^MICHAEL^A.^^^PROVID^^^PROVID|||||||A|20031116
```



COVID-19: Missing or Incorrect County

- The patient/client home address county is a required element for COVID-19 reporting, as required by the CDC.
- The client's county must be reported using the county FIPS code in PID-11.9
- This information is used by the state for reporting to the CDC.



Issue 7: Missing or Incorrect Race and Ethnicity for Patient (1 of 2)

- ImmTrac2 does not validate whether the patient's race in PID-10 and ethnicity in PID-22 are missing or incorrect.
 - Not flagged as an error in your DQA reports.
- Registry staff perform high-level analysis for COVID-19 immunizations to determine if information is missing or incorrect.
- Results in state and DSHS reporting to be inaccurate.



Issue 7: Missing or Incorrect Race and Ethnicity for Patient (2 of 2)

- Example 1: Patient's race in PID-10 and ethnicity in PID-22 are missing.

PID-10 Race → PID-10 Race field is missing (indicated by a red box around the empty field).

PID-22 Ethnicity → PID-22 Ethnicity field is missing (indicated by a red box around the empty field).

```
PID|1||027|JOE^BAMBI||20080323|F|DOE^CHRISTINA^|||23 FORREST|111-4484^PRN^PH||ENGLISH|MARRIED|NONE|||N|||||N
```

- Example 2: Patient's race in PID-10 and ethnicity in PID-22 are reported with information spelt out, not using HL7 Codes.

PID-10 Race → PID-10 Race field is reported with information spelt out (indicated by a red box around the text).

PID-22 Ethnicity → PID-22 Ethnicity field is reported with information spelt out (indicated by a red box around the text).

```
PID|1||027860|RISTINA^M|White|123 FORREST||ENGLISH|MARRIED|NONE|||Not Hispanic or Latino|N|||||N
```



Resolution: Correct Race and Ethnicity for Patient

- Work with IT Support and EHR vendor to update systems to include HL7 Codes for patient race and ethnicity in the PID segment.
- Send the corrected data via data exchange to have registry records updated with correct race and ethnicity codes.
- Example of HL7 message with race and ethnicity reported accurately:

```
PID|1||02786||J|TINA^M|2106-3^White^HL70005|123 FORREST STREET|C|IED|NONE||||N^Not Hispanic or Latino^CDCREC|N|||||N
```



Takeaways



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Reminders (1 of 2)

Regardless of reporting online or data exchange, must always:

- Check you are reporting under and for the correct org,
- Identifying any and all data quality issues,
- Resolving all data quality issues timely,
- Resubmit data that rejected or resulted in error,
- Report lot number accurately, and
- Report all required elements, including: Patient County, Race and Ethnicity.



Reminders (2 of 2)

- Use registry resources available on our DSHS website:
 - <https://www.dshs.texas.gov/immunize/immtrac/>
- Contact the registry by email if IT Support and EHR Vendor can't resolve issues alone.
 - ImmTrac2@dshs.texas.gov
 - Access, site registrations or renewals, etc.
 - ImmTracMU@dshs.texas.gov
 - Data exchange and promoting interoperability



Thank You!

Texas Immunization Registry

Access, site registrations or renewals, etc:

ImmTrac2@dshs.texas.gov

Data exchange and promoting interoperability:

ImmTracMU@dshs.texas.gov