

USING INTEROPERABILITY TO IMPROVE IMMUNIZATION ACCURACY

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The background features a vibrant gradient from blue to purple. On the right side, there are several large, colorful, organic shapes in shades of green, yellow, orange, red, and pink. A stylized human figure is formed by these shapes, with a black silhouette of a person's head and neck. Below the figure, the year '2023' is displayed in a white, outlined font. The overall aesthetic is modern and digital.

2023

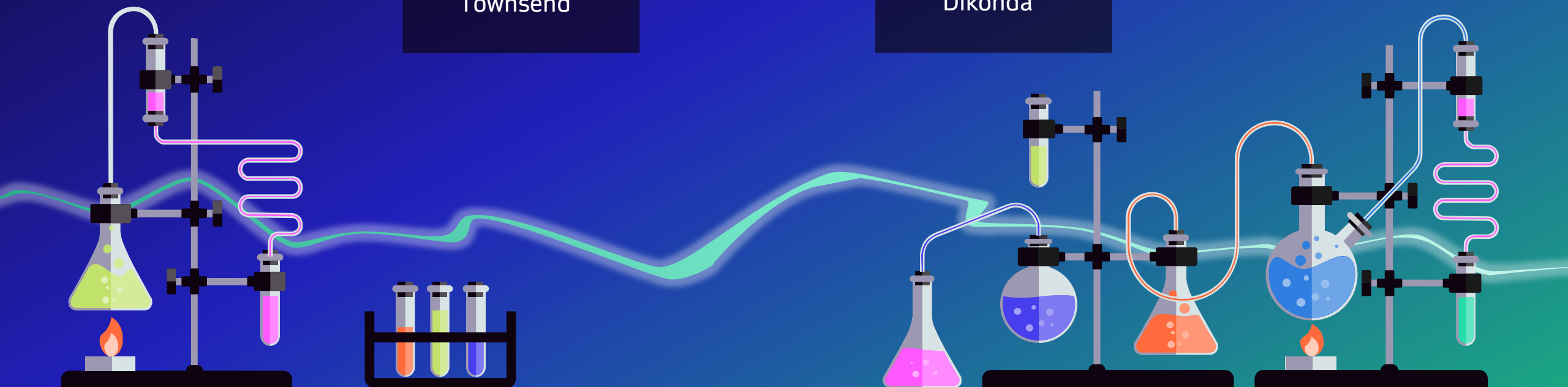
Presenters



Brittney
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Disclosures

The following speaker(s) have no relevant financial relationships with ineligible companies to disclose:

Rajesh Dikonda

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UTHealth Houston | UT Physicians

Academic | Greater Houston area | Hyperdrive May 22

2,000+ CLINICIANS

100+ AMBULATORY CLINICS

2 BEHAVIORAL HEALTH HOSPITALS

1 Million+ PATIENTS

2 Million OUTPATIENT VISITS

538 BH BEDS

UTHealth Houston is an academic university that includes McGovern Medical School, a behavioral health campus, and the clinical practice of UT Physicians (UTPhysicians.com). Founded in 1972, the university focuses on education, patient care for the whole family, and research.

Learning Objectives

1. Examine potential pitfalls and best practices for bidirectional exchange with an Immunization Information System (IIS)
2. Describe tools for monitoring and correcting errors between Epic and the IIS.
3. Identify build that may be helpful in optimizing workflows for obtaining IIS consent and documentation.

Immtrac2 – Texas' Immunization Registry

1

Founded in 2017

ImmTrac2 was founded in April 2017 replacing legacy system ImmTrac.

2

Opt In

Texas Immunization Registry is an opt in registry. Immunizations only store if consent is obtained.

3

Logistics

ImmTrac stores more than 164 million immunization records with 60,000 participating organizations.

Why have an Immunization Registry?

The American Academy of Pediatrics recommends it.



Centers for Disease Control and Prevention (CDC) says a state-based immunization information system is essential for reaching and sustaining coverage levels.



The immunization schedule is confusing to parents. A registry helps to keep parents/patients informed about when they/their children need vaccines.



People lose their vaccine records or don't remember.



Track immunization coverage to identify under-vaccinated areas and/or communities.

Agenda



PITFALLS AND BEST PRACTICES

ERROR MONITORING AND CORRECTION

WORKFLOW IMPROVEMENTS

WHAT'S NEXT



PITFALLS AND BEST PRACTICES

Pitfalls and Best Practices

Initial Bidirectional implementation

- **External monitoring** of errors
- Batch consents separate from vaccine administration

Full Bidirectional implementation

- Workqueue view
- Error mapping
- Additional access to operation staff

Pitfalls cont...Initial Implementation

▶ Monitoring Errors in Text file

▶ Batch Consents outside of Immunization Admin

Immtrac Consent Affirmation - UTH

Matching reports ^

- ☆ Immtrac Adult Consent Affirmations(A) - UTH
- ☆ Immtrac Adult Consent Affirmations(D) - UTH
- ☆ Immtrac Adult Consent Affirmations(G) - UTH
- ☆ Immtrac Child Consent Affirmations(B) - UTH
- ☆ Immtrac Child Consent Affirmations(E) - UTH
- ☆ Immtrac Child Consent Affirmations(H) - UTH
- ☆ Immtrac Disaster Consent Affirmations(C) - UTH
- ☆ Immtrac Disaster Consent Affirmations(F) - UTH

Report Settings - Immtrac Adult Consent Affirmations(A) - UTH [680652]

Criteria Extract Override General

Extract: IMMTRAC ADULT CONSENT AFFIRMATION - UTH [100146]

File path: /epic/nonprdfiles/stage/HealthyPlanet/ImmTrac/Outbound/AFFIRM.UTPHYADULTA.txt

Extract Row	File Path
-------------	-----------

Preview: /epic/nonprdfiles/stage/HealthyPlanet/ImmTrac/Outbound/AFFIRM.UTPHYADULTA.txt

A valid file path can include the following special characters:
{HRNID} - pulls in the Report Run ID
{DATEFORMAT} - pulls in the date with the given format such as MMdyyyy
Format such as HHmmss

Preview Save

IMMTRAC ADULT CONSENT AFFIRMATION - UTH [100146]

Snapshot
IMMTRAC ADULT CONSE
Extract Viewer

IMMTRAC ADULT CONSENT AFFIRMATION - UTH [100146]

IMMTRAC ADULT CONSENT AFFIRMATION - UTH

Description

Input: Parent
Base Database: EPT
Format: Fixed width

#	Field	Data Source	Start	End	Data Format	Lines/Line Option
1	"C"	Free Text	1	2		
2	Blank Column [1747]	Extension: EPT - ES Auto 3 Notices Blank Column [44936]	3	12		
3	Last Name [2209]	Data Item: EPT - 117	13	32		
4	First Name [2208]	Data Item: EPT - 118	33	52		
5	Patient Middle Name [76711]	Data Item: EPT - 119	53	72		
6	Blank Column [1747]	Extension: EPT - ES Auto 73 Notices Blank Column [44936]	73	81		
7	Gender Identity [97049]	Data Item: EPT - 131	82	82	Title	
8	Patient Race [42048]	Data Item: EPT - 145	83	84	933763741-COG RW IMMTRAC CONSENT MAPPING	All lines
9	Medicaid ID [43842]	Data Item: EPT - 5335	85	93		
10	Patient Date of Birth [19003]	Data Item: EPT - 110	94	101	76386-Convert DTE to YYYYMMDD	
11	Mother's First Name [101036]	Data Item: EPT - 365	102	121		
12	Blank Column [1747]	Extension: EPT - ES Auto 122 Notices Blank Column	122	141		

Pitfalls to Best Practices...Initial Implementation

▶ ~~Monitoring Errors in Text file~~

Interface Error Workqueue - AMB - OUTGOING VACC ADMIN ERRORS [1940] Last refreshed: 9/3/2021 10:57:59 AM

Refresh Expand message Resubmit message Retrigger message Skip message Translation Table Transfer Delete error Release Add note

Errors (Total: 29)

Resubmitted	Error ID	Description	Offending Value	Error Instant	Origin	Severity	Patient Name	Patient MRN
	6145	USER RECORD DOESN'T HAVE A LINKED PROVIDER	673	9/2/2021 8:29 AM		Notification	TESTING^BOY/BABY^*****L	10000677^***...
	87032	NO MPI IDS FOUND FOR ADMINISTRATING PROVIDER		8/30/2021 12:45 PM		Notification	AMBULATORY^NORMAN^...	202436^***U...
	8048	PRIMARY FACILITY MAPPING FAILED	10501	8/30/2021 12:45 PM		Warning	AMBULATORY^NORMAN^...	202436^***U...
	87032	NO MPI IDS FOUND FOR ADMINISTRATING PROVIDER		8/30/2021 12:39 PM		Notification	AMBULATORY^COURTNE...	202433^***U...

▶ Batch Consents outside of Immunization Admin

▶ Monitoring Errors in Epic

▶ Send consent status with vaccine administration

Pitfalls to Best Practices continued...Initial Implementation

Messages - OUTGOING DISASTER VACCINATION ADMINISTRATION [334324]

Message Content

```
MSH|^~\&|EPIC|UTP FAMILY MEDICINE - UTP|TXImmtrac|TxDSHS|20220725130219-0500|673|VXU^V04^V04|25|P|2.5.1|||ER|AL||||Z44^CDCPHINVS  
PID|1||10022551^^UTM^9R||3PMTACTAD^ADULT^REFUSE CONSENT^^^L||19850101|H|3PMTACT2^ADULT^REFUSE CONSENT^^|1234585 TERSTR^^HOUSTON^TX^77089^  
USA^P^^48201|48201|||||100297890|||||N  
PD1||UTP 6410 FANNIN ST^^6410F|||||20220722||A|20220722  
1 =  
2 =  
3. Primary Facility = UTP 6410 FANNIN ST^6410F  
4. Primary Care Provider =  
5 =  
6. Handicap =  
7 =  
8 =  
9 =  
10 =  
11. Pubility Code =  
12. Protection Indicator = Y  
13. Protection Indicator P-Effective Date = 20220722
```

Reference Guides

Outgoing Vaccination Administration Interface Reference Guide (AIK 19)

PD1-12: Protection Indicator

Description

This field indicates to whether or not the patient consents based on document of a certain type and status.

Notes

You can configure this interface to meet your state's requirements for immunization data sharing. If your state requires a patient's consent to share their data electronically, patient data is shared with the registry only if the patient or a designated representative completes a consent form. If your state doesn't require a patient's explicit consent for electronic data exchange, consent is assumed unless the patient completes a form documenting their refusal to share data.

The value that indicates whether a patient has consented to sharing their information differs based on the version of HL7 your receiving system is using:

HL7 version of receiving system	Value in PD1-12
versions 2.5.1 and later	Y indicates that the data is protected (the patient does not consent)
versions prior to 2.5.1	Y indicates that the patient consents

Table Editor - CONSENT FORM AND CONSENT VALUE [334322]

Table Content

#	Internal Value	External Value
1	Immtrac Adult Registry Consent [201255]	TXA
2	Immtrac Child Registry Consent [201254]	TXA

Table Editor - DISASTER CONSENT FORM VALUES [334324]

Table Content

#	Internal Value	External Value
1	Immtrac Disaster Retention Consent [201256]	TXD

▶ Monitoring Errors in Epic

▶ Send consent status with vaccine administration

Consent Types

ImmTrac Consent Type	When to collect?	Frequency
Child Consent	<ul style="list-style-type: none">- Newborn- When new pediatric patient has no record of ImmTrac consent	1x
Adult Consent	<ul style="list-style-type: none">- Child to Adult -- When child turns 19- Any patient that is 19+ and does not have an ImmTrac consent on file	1x
Disaster Authorization Consent (applies to emergency use vaccines only)	<ul style="list-style-type: none">- Required consent to retain COVID-19 vaccines after 5 years<ul style="list-style-type: none">- If consent is not collected, all COVID-19 vaccinations will be purged from ImmTrac2 registry 5 years after disaster authorization expires	Waived currently; 1x

Pitfalls cont...Full Implementation

▶ Inability to easily and efficiently view error(s) in WQ

▶ Multiple IIS Errors falling to same Error ID

▶ Exporting errors for operational review/correction

The screenshot displays the 'Interface Error Workqueue - AMB - OUTGOING VACC ADMIN ERRORS [1940]' interface. The top section shows a list of errors with columns for Resubmitted, Error ID, Description, Offending Value, Error Instant, Origin, Severity, Patient Name, and Patient MRN. A red arrow points from the 'Error ID' column of the first row (6145) to the detailed view below.

Resubmitted	Error ID	Description	Offending Value	Error Instant	Origin	Severity	Patient Name	Patient MRN
	6145	USER RECORD DOESN'T HAVE A LINKED PROVIDER	673	9/2/2021 8:29 AM		Notification	TESTING^BOY/BABY^*****	10000677^*****
	87032	NO MPI IDS FOUND FOR ADMINISTRATING PROVIDER		8/30/2021 12:45 PM		Notification	AMBULATORY^NORMAN^...	202436^*****
	8048	PRIMARY FACILITY MAPPING FAILED	10501	8/30/2021 12:45 PM		Warning	AMBULATORY^NORMAN^...	202436^*****
	87032	NO MPI IDS FOUND FOR ADMINISTRATING PROVIDER		8/30/2021 12:39 PM		Notification	AMBULATORY^COURTNE...	202433^*****

The detailed view for 'DATA TYPE ERROR [195512]' shows the following information:

- User Message:** MER-110:Message rejected. MSH-22 value Invalid.
- Contextual Error Information:**
 - Message Location: MSH(1)-22
 - Error Severity: E
 - Application Error Code: 3
 - Application Error Text: Illogical Value error
- General Error Information:**
 - Severity: Notification
 - Scope: Message
 - Instant of error: Mon Dec 13, 2021 11:22 PM
 - Logged error ID: 35149205
 - Occurred at: LogSegmentError+1^AIHL7ERRIFL01 +1

The 'Message Submission Details' section includes:

- Built: Mon Dec 13, 2021 04:47:09 PM
- Sent: Mon Dec 13, 2021 04:47:16 PM
- Acknowledgment: CA
- ID^DAT: Z156141^S5439.97
- Mnemonic: Immunization Trigger

The 'Error Audit History' table shows two entries:

Event	User	Event Time	Comments
WQ Add	INTERFACE, VACCINATION ADMINISTRATION OUT [INTF334322]	Mon Dec 13, 2021 11:22 PM	Added to WQF AMB - OUTGOING VACC ADMIN ERRORS [1940] as WQI 25149644
WQ Add	INTERFACE, VACCINATION ADMINISTRATION OUT [INTF334322]	Mon Dec 13, 2021 11:22 PM	Added to WQF CLINIC - OUTGOING VACC ADMIN ERRORS [7048] as WQI 25149645

Pitfalls cont...Full Implementation

- ▶ Inability to easily and efficiently view error(s) in WQ
- ▶ Multiple IIS Errors falling to same Error ID
- ▶ Exporting errors for operational review/correction

REQUIRED FIELD MISSING [195511]	User Message: IEE-519::Warning. NK1 Segment/Responsible person, missing
REQUIRED FIELD MISSING [195511]	User Message: MER-105::Message rejected. Required field PID-11-3 missing
REQUIRED FIELD MISSING [195511]	User Message: MER-105::Message rejected. Required field PID-11 missing.
REQUIRED FIELD MISSING [195511]	User Message: MER-105::Message rejected. Required field PID-11-5 missing.
REQUIRED FIELD MISSING [195511]	User Message: MER-105::Message rejected. Required field PID-5-2 missing.
REQUIRED FIELD MISSING [195511]	User Message: CLR-201::Client rejected. Client name cannot be empty.
REQUIRED FIELD MISSING [195511]	User Message: CLR-203::Client rejected. Client last name must be at least one character in length.
REQUIRED FIELD MISSING [195511]	User Message: IEE-318::Warning. The patient's race in PID-10 is missing. If your organization is able to capture and report this information then do so using HL70005 code set
REQUIRED FIELD MISSING [195511]	User Message: IEE-319::Warning. The patient's ethnicity in PID-22 is missing. If your organization is able to capture and report this information then do so using the HL70189 CDCREC code set.
REQUIRED FIELD MISSING [195511]	User Message: IMR-128::Immunization rejected. Manufacturer Code inaccurate or missing data.
REQUIRED FIELD MISSING [195511]	User Message: IEE-413::Phone number is empty or invalid or contains a placeholder value.
REQUIRED FIELD MISSING [195511]	User Message: IMR-151::Immunization rejected. The information for the provider who ordered the immunization reported is missing in ORC-12.

TABLE VALUE NOT FOUND [195513]	User Message: IEE-511::Informational Message. RXA #1 ignored. Refusal of Immunization is not accepted or stored in the registry
TABLE VALUE NOT FOUND [195513]	User Message: IMR-132::Immunization rejected. Immunization rejected for an unconsented client.
TABLE VALUE NOT FOUND [195513]	User Message: IEE-321::Warning. The patient's ethnicity in PID-22 is invalid. Use the appropriate HL70189 CDCREC code set values for this field.
TABLE VALUE NOT FOUND [195513]	User Message: IMR-129::Immunization Rejected. Tradename (***) not produced by manufacturer (***)
TABLE VALUE NOT FOUND [195513]	User Message: IEE-320::Warning. The patient's race in PID-10 is invalid. Use the appropriate HL70005 code set values for this field.

Pitfalls cont...Full Implementation

- ▶ Inability to easily and efficiently view error(s) in WQ
- ▶ Multiple IIS Errors falling to same Error ID
- ▶ Exporting errors for operational review/correction

Name

- AMB__OUTGOING_VACC_ADMIN__2022-07-26_PID Errors
- AMB__OUTGOING_VACC_ADMIN__2022-07-14_PID Errors
- AMB__OUTGOING_VACC_ADMIN__2022-07-01_PID Errors
- AMB__OUTGOING_VACC_ADMIN__2022-07-01_IEE-201 multiple pt matching
- AMB__OUTGOING_VACC_ADMIN__2022-06-27IEE_201 multiple matches
- AMB__OUTGOING_VACC_ADMIN__2022-06-21_IEE_201 warning multiple patient matching
- AMB__OUTGOING_VACC_ADMIN__2022-06-15_IEE-201 multiple client matches
- AMB__OUTGOING_VACC_ADMIN__2022-05-27_IEE-201 multiple matches
- AMB__OUTGOING_VACC_ADMIN__2022-05-09_MER-105 PID 5 errors
- AMB__OUTGOING_VACC_ADMIN__2022-05-19_IEE-201 multiple matches
- AMB__OUTGOING_VACC_ADMIN__2022-05-09_IEE-201 duplicate patient matching
- AMB__OUTGOING_VACC_ADMIN__2022-04-22_IEE-201 multiple patient matches
- AMB__OUTGOING_VACC_ADMIN__2022-04-14_IEE-201 multiple patient matching
- AMB__OUTGOING_VACC_ADMIN__2022-04-11_MER-105 PID missing infomation
- AMB__OUTGOING_VACC_ADMIN__2022-04-11_IEE-201 multiple matches
- AMB__OUTGOING_VACC_ADMIN__2022-04-01_IEE-201 patient matching
- AMB__OUTGOING_VACC_ADMIN__2022-03-29_MER-105 patient ID or address missing
- AMB__OUTGOING_VACC_ADMIN__2022-03-30_CLR-201-203-205 Confidential name issue
- AMB__OUTGOING_VACC_ADMIN__2022-03-29_IEE-201 warning, multiple matching patients

Pitfalls to Best Practices cont...Full Implementation

Interface Error Workqueue - AMB - OUTGOING VACC ADMIN ERRORS [1940] Last refreshed: 10/29/2021 12:00:52 PM

Refresh Expand message Resubmit message Retriigger message Skip message Translation Table Transfer Delete error Release Add note

Errors (Total: 8,495)

Msg No	Resubmitted	Error ID	Description	Error Message Text	Error Instant	Origin	Severity
50601		195510	SEGMENT SEQUEN...	User Message: CLR-205::Client reje...	9/27/2021 9:22 AM		Notification
50602		195510	SEGMENT SEQUEN...	User Message: CLR-205::Client reje...	9/27/2021 9:22 AM		Notification
50609		195510	SEGMENT SEQUEN...	User Message: CLR-205::Client reje...	9/27/2021 11:00...		Notification
50676		195512	DATA TYPE ERROR	User Message: IEE-571::Warning. T...	9/27/2021 11:03...		Notification
50688		195510	SEGMENT SEQUEN...	User Message: IEE-404::Warning. R...	9/27/2021 11:03...		Notification
50688		195510	SEGMENT SEQUEN...	User Message: IEE-404::Warning. R...	9/27/2021 11:03...		Notification
50690		195510	SEGMENT SEQUEN...	User Message: IEE-404::Warning. R...	9/27/2021 11:03...		Notification
50690		195510	SEGMENT SEQUEN...	User Message: IEE-404::Warning. R...	9/27/2021 11:03...		Notification
50713		195512	DATA TYPE ERROR	User Message: IEE-571::Warning. T...	9/27/2021 11:04...		Notification
50723		195512	DATA TYPE ERROR	User Message: IEE-571::Warning. T...	9/27/2021 11:05...		Notification
50758		195512	DATA TYPE ERROR	User Message: IEE-571::Warning. T...	9/27/2021 11:06...		Notification
50779		195512	DATA TYPE ERROR	User Message: IEE-571::Warning. T...	9/27/2021 11:07...		Notification

▶ Update the view and add appropriate columns

▶ Remap responses to have their own unique Error ID

▶ Give operations team access to a Clinic Error WQ

ERROR REPORT

CLIENT REJECTED. CLIENT LAST NAME MUST BE AT LEAST ONE CHAR. [195511203]

Client rejected. Client last name must be at least one character in length.

Contextual Error Information

Message Location	PID(1)-S
Error Severity	E
Application Error Code	6
Application Error Text	Required observation missing
User Message	CLR-203:Client rejected. Client last name must be at least one character in length.

General Error Information

Severity	Fatal
Scope	Message
Instant of error	Fri Mar 10, 2023 12:26 PM
Logged error ID	3785013
Occurred at	LogSegmentError+4*AITCPOUT +1

Delete Error

Resolution Plan Information Status: Unassigned

Error Audit History

Message Submission Details

Built:	Fri Mar 10, 2023 12:26:39 PM
Sent:	Fri Mar 10, 2023 12:26:54 PM
Acknowledgment:	CA
ID^DAT:	Z5058^S4996
Mnemonic:	Immunization Trigger

Error Audit History

Event	User	Event Time	Comments
WQ Add	INTERFACE, VACCINATION ADMINISTRATION OUT [INTF334322]	Fri Mar 10, 2023 12:26 PM	Added to WQF AMB - OUTGOING VACC ADMIN ERRORS [1940] as WQI 3298734
WQ Release	DIKONDA, RAJESH [254]	Mon Mar 20, 2023 2:24 PM	Removed WQI 3298734 from WQF 1940
WQ Add	INTERFACE, VACCINATION ADMINISTRATION OUT [INTF334322]	Mon Mar 20, 2023 2:24 PM	Added to WQF AMB - OUTGOING VACC ADMIN ERRORS [1940] as WQI 3300941

Pitfalls to Best Practices cont...Full Implementation

Table Editor - IMMTRAC ENHANCED ERROR CODES [33432271]

Open Table Record Copy to Clipboard

Table Specifications Usage Report

Table Content Search this table View Default Values

Update this table with Data Courier

#	Error Code	Error (AIE) record
2	IEE-407	NO RELATIONSHIP CODE SPECIFIED. DEFAULTING TO GUARDIAN [195521407]
3	IEE-521	MORE THAN ONE CLINICIAN FOUND TO MATCH (PROVIDER NAME) [195521521]
4	IEE-594	THE INCOMING DELETE IMMUNIZATION DOES NOT MATCH AN EXISTIN. [195521594]
5	IEE-598	THE SENDING PROVIDER ORGANIZATION DOES NOT OWN THE EXISTIND [195521596]
6	CLR-101	CLIENT REJECTED. CONSENT FLAG NOT VALID FOR CLIENT AGE [195512101]
7	IMR-111	IMMUNIZATION REJECTED. 157 IS AN INVALID CVX CODE OR REGISTD [195512111]
8	IEE-257	YOU ARE ATTEMPTING TO UPDATE THE SSN OF IMMTRAC2 CLIENT ID [195512257]
9	IEE-296	YOU ARE ATTEMPTING TO UPDATE THE FIRSTNAME OF IMMTRAC2 CLIENT ID: , WHO WAS CREATED BY THE STATE'S VITA...
10	IEE-297	YOU ARE ATTEMPTING TO UPDATE THE LASTNAME OF IMMTRAC2 CLIEN [195512297]
11	IEE-298	YOU ARE ATTEMPTING TO UPDATE THE MIDDLENAME OF IMMTRAC2 CLE [195512298]
12	IEE-309	INVALID STATE CODE (AB). NO VALUE STORED. . [195512309]
13	IEE-313	YOU ARE ATTEMPTING TO UPDATE THE GENDER OF IMMTRAC2 CLIENT [195512313]
14	IEE-317	MULTIPLE BIRTH INDICATOR AND BIRTH ORDER VALUES ARE CONFLI [195512317]
15	IEE-422	PID-6.1 - MOTHER'S MAIDEN LAST NAME IS INVALID AND WAS IGNO. [195512422]
16	IEE-423	PID-6.2 - MOTHER'S FIRST NAME IS INVALID AND WAS IGNORED [195512423]

▶ Update the view and add appropriate columns

▶ Remap Responses to have their own unique Error ID

▶ Give operations team access to a Clinic Error WQ

Pitfalls to Best Practices cont...Full Implementation

- ~~Inability to easily and efficiently view error(s) in WQ~~

Workqueue List - Interface Errors - Favorites

Refresh | Open | Report | Export | Manage WQ | Show All | New Filter | My WQs | Eavs

Account | Adj/Refund Review | Adj/Refund Review | Appt Requests | Case Rate | Charge Review | Charge Review | Interface Errors

This list is filtered | Remove

F	ID	Name	Service Area	Count	Active	WQ Status
★	7592	AMB - OUTGOING DISASTER VACC ADMIN ERRORS	UTHEALTH	0	Yes	
★	1940	AMB - OUTGOING VACC ADMIN ERRORS	UTHEALTH	4	Yes	
★	1741	AMB - OUTGOING VACC HIST QUERY ERRORS	UTHEALTH	1	Yes	
★	7593	CLINIC - OUTGOING DISASTER VACC ADMIN ERRORS	UTHEALTH	0	Yes	
★	7048	CLINIC - OUTGOING VACC ADMIN ERRORS	UTHEALTH	0	Yes	

~~operational review/correction~~

- Update the view and add appropriate columns
- Remap responses to have their own unique Error ID
- Give operations team access to a Clinic Error WQ

Agenda

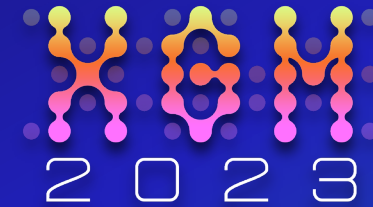


PITFALLS AND BEST PRACTICES

— ERROR MONITORING AND ERROR CORRECTION —

WORKFLOW IMPROVEMENTS

WHAT'S NEXT



ERROR MONITORING AND CORRECTIONS

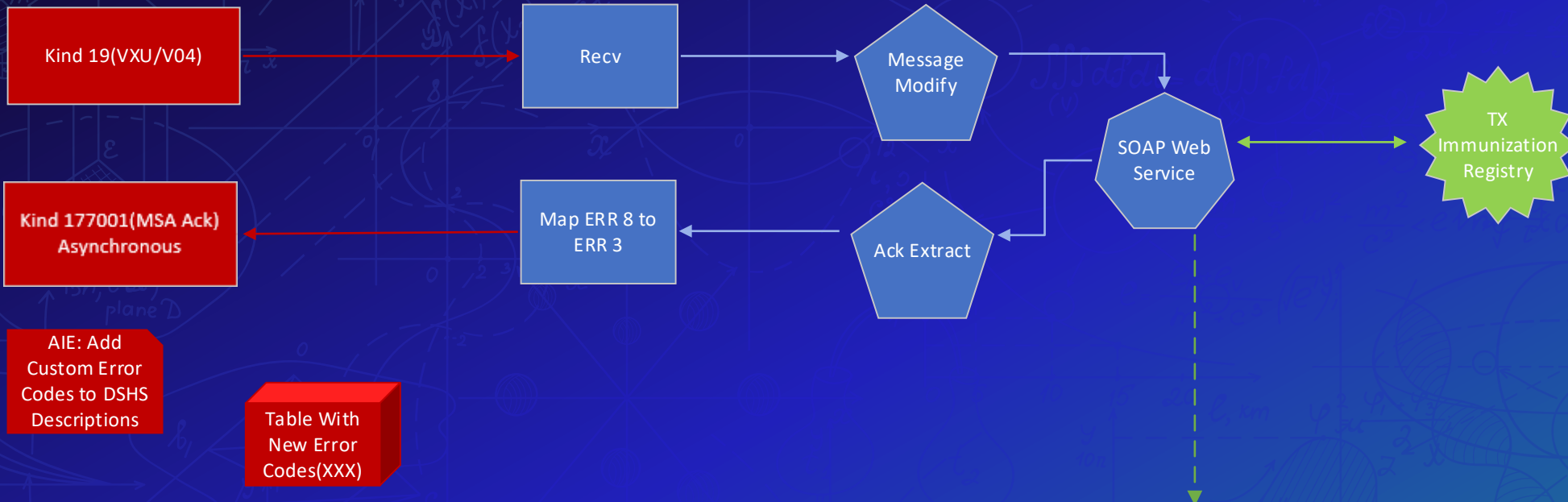
Error Monitoring & Correction

- What is the build behind the best practices?
 - ◆ Interface Setup – COVID/Non-COVID
 - ◆ Interface Error Workqueue Setup – Analyst and Operations
- How did this build assist with monitoring and correcting errors?
 - ◆ Identification of true errors
 - ◆ Automatic error designation to working team

Immunization Flow Architecture

Epic

Interface Engine (Rhapsody)



AIE: Add Custom Error Codes to DSHS Descriptions

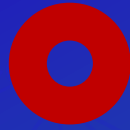
Table With New Error Codes(XXX)

SET PV ERROR_CODE_TABLE=XXX

Rules for IEWQ



APP IEWQ



OP IEWQ

General	
Endpoint URL: https://immtrac.dshs.texas.gov:443/TX-PRD-WS/client_Service	
Server Authentication:	Use Certificate Authorities for Authentication
HTTP S Client Certificate Authentication:	Disabled
SOAP Binding:	SOAP 1.2
WS-Addressing:	Enabled
SSL Protocol:	TLSv1.2
SSL Cipher Suite:	FIPS Cipher Suites (AES-128, AES-256)
Definition:	client_Service.xsd
Connection Timeout (ms):	60000

Interface Setup for COVID/Non-COVID

General Info		Group Info	
Records			
1	COVID-19 JANSSEN 18 & OVER VACCINATION	[403]	
2	COVID-19 MODERNA BIVALENT BOOSTER 12+YR (GRAY BORDER)		
3	COVID-19 MODERNA BIVALENT BOOSTER 6-11YR (GRAY BORDER)		
4	COVID-19 MODERNA BOOSTER 12 & OVER VACCINATION (RED CAP)		
5	COVID-19 MODERNA LIL PEDI PRIMARY 6MO - 5YR VACCINATION		
6	COVID-19 MODERNA BOOSTER 12YR+, PRIMARY 6-11YR VACCINATION		
7	COVID-19 MODERNA 12 & OVER VACCINATION (RED CAP)	[400]	
8	COVID-19 NOVAVAX SARS-COV-2 VACCINATION	[404]	
9	COVID-19 PFIZER 12 & OVER VACCINATION (PURPLE-DILUTE)	[401]	
10	COVID-19 PFIZER BIVALENT BOOSTER 12+YR (GRAY CAP)	[3001]	
11	COVID-19 PFIZER BIVALENT BOOSTER 5-11YR (ORANGE CAP)	[3002]	
12	COVID-19 PFIZER LIL PEDI 6 MO - 4Y/O VACCINATION (MAROON)	[3003]	

Grouper(VCG) with COVID LIMS

Rules With In/Ex cluding Grouper(CER1/CER2)

Set the PV for Triggering the Interface

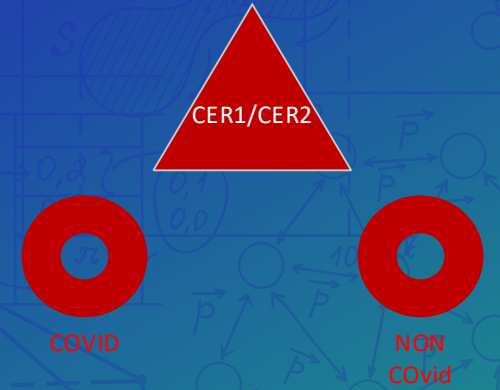
%	Rule Name	Rule ID	Context
<input checked="" type="checkbox"/>	ImmTrac COVID VACCINE Triggering RULE Based on Grouper ID	729449	Interface Immunization Filtering
<input checked="" type="checkbox"/>	ImmTrac NON COVID VACCINE Triggering RULE Based on Grouper ID	729448	Interface Immunization Filtering

#	Property	Operator	Value
1	Immunization > Immunization Type (LIM)	=	Constant > Grouper Record
			Group ID
			LIM GENERAL COVID-19 [123464]

#	Property	Operator	Value
1	Immunization > Immunization Type (LIM)	<>	Constant > Grouper Record
			Group ID
			LIM GENERAL COVID-19 [123464]

SET PV immunization_TRIGGER_RULE=CER1

Profile Variable	Value
IMMUNIZATION_TRIGGER_RULE [5634]	ImmTrac NON COVID VACCINE Triggering RULE Based on Grouper ID [729448]



Interface Error Workqueue Setup

Create Error Codes

AIE	199151
Error Code Name	Error Code ID
INVALID SET ID	199
THE PATIENT'S RACE IN PID-10 IS MISSING. IF YO...	195511318
NO MPI IDS FOUND FOR ADMINISTRATING PROVI...	87032
PATIENT FYI ERROR	8740
INFORMATIONAL MESSAGE. RXA #1 IGNORED. R...	195513511
THE PATIENT'S ETHNICITY IN PID-22 IS INVALID....	195513321
THE PATIENT'S RACE IN PID-10 IS INVALID. USE T...	195513320

Add New Error Codes to Table(XXX)

#	Error Code	Error (AIE) record
2	IEE-407	NO RELATIONSHIP CODE SPECIFIED. DEFAULTING TO GUARDIAN [195521407]
3	IEE-521	MORE THAN ONE CLINICIAN FOUND TO MATCH (PROVIDER NAME) [195521521]
4	IEE-594	THE INCOMING DELETE IMMUNIZATION DOES NOT MATCH AN EXISTIN. [195521594]
5	IEE-596	THE SENDING PROVIDER ORGANIZATION DOES NOT OWN THE EXISTIND [195521596]
6	CLR-101	CLIENT REJECTED. CONSENT FLAG NOT VALID FOR CLIENT AGE [195512101]
7	IMR-111	IMMUNIZATION REJECTED. 157 IS AN INVALID CVX CODE OR REGISTD [195512111]
8	IEE-257	YOU ARE ATTEMPTING TO UPDATE THE SSN OF IMMTRAC2 CLIENT ID [195512257]
9	IEE-296	YOU ARE ATTEMPTING TO UPDATE THE FIRSTNAME OF IMMTRAC2 CLIENT ID, WHO W
10	IEE-297	YOU ARE ATTEMPTING TO UPDATE THE LASTNAME OF IMMTRAC2 CLIEN [195512297]
11	IEE-298	YOU ARE ATTEMPTING TO UPDATE THE MIDDLENAME OF IMMTRAC2 CLE [195512298]
12	IEE-309	INVALID STATE CODE (AB). NO VALUE STORED. [195512309]
13	IEE-313	YOU ARE ATTEMPTING TO UPDATE THE GENDER OF IMMTRAC2 CLIENT [195512313]
14	IEE-317	MULTIPLE BIRTH INDICATOR AND BIRTH ORDER VALUES ARE CONFLI [195512317]
15	IEE-422	PID-6.1 - MOTHER'S MAIDEN LAST NAME IS INVALID AND WAS IGNO. [195512422]

AIE: Add Custom Error Codes to DSHS Descriptions

Table With New Error Codes(XXX)

SET PV ERROR_CODE_TABLE=XXX

Create Rules for IEWQ

CER for IEWQ

Set PV ERROR_CODE_TABLE=XXX

Create Error Workqueue With Rules

ID	Name	Active?	Description
691639	AMB - OUTGOING VACC ADMIN ERRORS	<input checked="" type="checkbox"/>	Collects errors from the Outgoing Vaccination Administration interface for EDI.

Rule criteria:

- Interface Error » Interface = INCOMING ASYNCHRONOUS ACKNOWLEDGMENT [334999], OUTGOING VACCINATION ADMINISTRATION [334322]
- Interface Error » Error Code = UNABLE TO PARSE DOSE AND UNIT FROM LPL 4020 [176308], VACCINATION SEQUENCE CALCULATION ERROR [176316], VIS DATE TRANSLATION FAILURE [176317], RECORD DOES NOT EXIST IN DATABASE [8719], UNKNOWN HL7 DATA TYPE [8720], NO CARE AREA FOUND [9515], REFUSAL REASON MUST BE MAPPED FOR DEFERRED

Error Work Queue View

Msg No	Patient MRN	Patient Name	DOB	Gender	User Message	Vaccine Administered	Manufacturer...	Severity	Admin Date	Department Admin...	Lot Number...
1240	202433^A^UTH^MR	AMBULATORY,COURTNEY	19570803	F	CLR-203::Client rejected. C...	136^MENINGOCOC...		Fatal	20230310	1163400056^UTP...	
1241	202433^A^UTH^MR	AMBULATORY,COURTNEY	19570803	F	CLR-203::Client rejected. C...	100^PNEUMOCOCC...		Fatal	19630310	1163400056^UTP...	
1244	202433^A^UTH^MR	AMBULATORY,COURTNEY	19570803	F	CLR-203::Client rejected. C...	111^INFLUENZA, LIV...		Fatal	19771010	1163400056^UTP...	
1243	202433^A^UTH^MR	AMBULATORY,COURTNEY	19570803	F	CLR-203::Client rejected. C...	300^COVID-19 PFIZ...	PFR^Pfizer, I...	Fatal	20230306	1115381000^UTP...	TESTING

APP IEWQ

OP IEWQ

S ₁	0,6
S ₂	0,2
S ₃	0,1
S ₄	0,1

Error Monitoring & Correction

- All teams can easily identify error
 - ◆ Error with correct Severity
 - ◆ Patient
 - ◆ Vaccination
 - ◆ Owning/administering location
- Minimal to no delay in error to owning team
 - ◆ Epic backend fixes route to correct Application WQ
 - ◆ Patient/administration correction errors route to Clinic WQ

Agenda

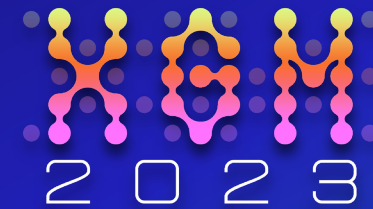


PITFALLS AND BEST PRACTICES

ERROR MONITORING AND CORRECTION

— **WORKFLOW IMPROVEMENTS** —

WHAT'S NEXT



WORKFLOW IMPROVEMENTS

Workflow Improvements

- ▶ Identification of two largest errors
 - ◆ Consent Rejections
 - ◆ Manufacturer/Tradename Rejections



Workflow Improvements - Consents

- Move from Paper Consent to Electronic Consent
- Auto-display age appropriate consent during Check In
- Training on E-Sig Consent

The screenshot displays the 'E-Signature Document Collector' window. The main form is titled 'Patient' and includes fields for 'First Name' (Kathleen), 'Date of Birth' (2/28/1992), 'Address' (1 First Ave, Houston TX 77030-6782), 'Mother's First Name', and 'Race' (White). Two overlapping error messages are shown:

- NEW PATIENT Check In**
⚠ The patient does not have a Travel/Exposure Questionnaire filled out for today. Complete this using the Travel Screening button on the toolbar.
⚠ Patient is missing the Child ImmTrac Consent
- NEW PATIENT Check In**
⚠ The patient does not have a Travel/Exposure Questionnaire filled out for today. Complete this using the Travel Screening button on the toolbar.
⚠ Patient is missing the Adult ImmTrac Consent

At the bottom of the form, there is a disclaimer: 'The Texas Immunization Registry is a secure and confidential service that consolidates and stores your immunization records. With your consent, your immunization information will be included in the Texas Immunization Registry. Doctors, public health departments, schools, and other authorized professionals can access your child's immunization history to ensure that important vaccines are not missed. For more information, see Texas Health and Safety Code Sec. 161.007 (d). <https://statutes.capitol.texas.gov/Docs/HS/htm/HS.161.htm#161.007>.'

Workflow Improvements - Consents

► Performance Tracking

Figure: ImmTrac consent status totals by year

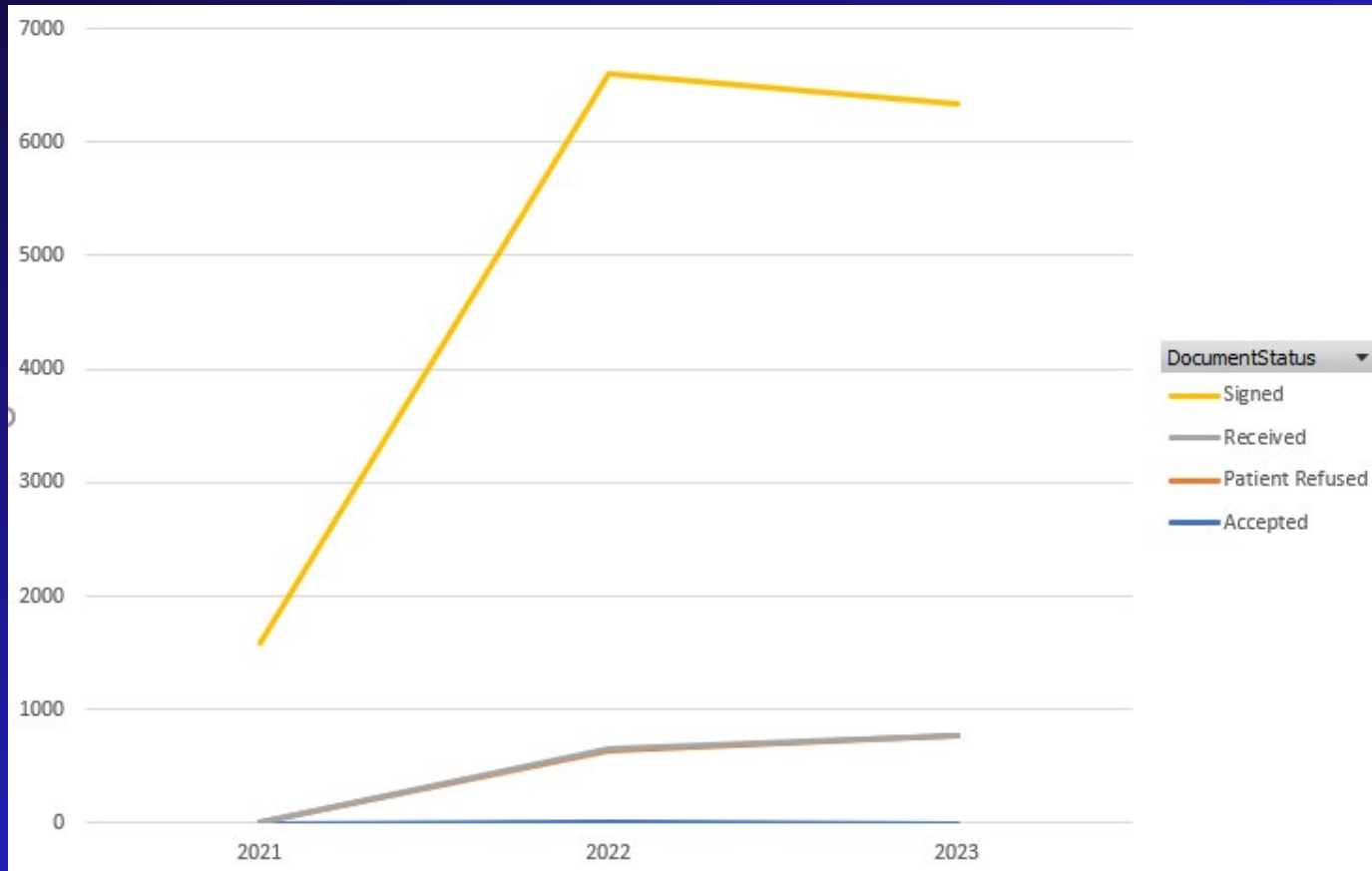


Table: ImmTrac consent status totals by selected clinic

Clinic Location	Patient Refused	Received	Signed	Grand Total
UTP COMP SICKLE CELL CENTER FAMILY MEDICINE - TMC	1		107	108
UTP COMP SICKLE CELL CENTER HEMATOLOGY - TMC	1		244	245
UTP COVID G125 - TMC			891	891
UTP FAMILY MEDICINE - JENSEN			385	385
UTP FAMILY MEDICINE - ROSENBERG	2		466	468
UTP FAMILY MEDICINE - SIENNA			217	217
UTP PEDI CENTER PEDIATRICS - BAY AREA	1		404	405
UTP PEDI PRIMARY CARE PEDIATRICS - UTPB			1374	1374
UTP PEDIATRICS - ROSENBERG	1		300	301

Workflow Improvements - Tradename

- ▶ Lot Manager clean up
 - ◆ Removal of incorrect lot creations
 - ◆ Removal of duplicate/unused storage units
 - ◆ Manufacturer category List updates to match MediSpan NDC manufacturer
- ▶ Training of Lot Manager
 - ◆ Workflow when lot information does not pull into admin screen
 - ◆ Correct NDC option

The screenshot displays the 'Lot Manager' application interface. At the top, there is a 'Storage Unit' dropdown menu set to 'EMC FAMILY MEDICINE-IMMUNIZATION' and a 'Filters' section with 'Immunization' and 'Lot Number' search boxes. Below this is a table of immunization lots. The table has columns for Lot Number, Immunization, Manufacturer, Package, Expiration, Product, Inventory, Balance, VFC Balance, and Comments. Two rows are visible: 'AMB CHICKEN POX LOT' and 'AMB HEPATITIS A LOT'. An 'Immunization Lot Editor' dialog box is open, showing details for the 'AMB CHICKEN POX LOT'. It includes a 'Select a Lot' dropdown, a table of 'Storage units with this lot' (listing 'EMC FAMILY MEDICINE-IMMUNIZATION' with 'General' and 'VFC' status 'Yes'), and a list of 'Departments with this lot' (listing 'EMC FAMILY MEDICINE - INTL DISTRICT' and 'UTP PEDI CENTER PEDIATRICS - BAY AREA'). The editor also has fields for 'Immunizations' (set to 'VARICELLA'), 'Expiration Date' (6/1/2023), 'Package' (54569-4055-0), 'Manufacturer' (Merck Sharp & Dohme), and 'Product' (VARIVAX). At the bottom of the editor are 'Accept' and 'Cancel' buttons.

Lot Number	Immunization	Manufacturer	Package	Expiration	Product	Inventory	Balance	VFC Balance	Comments
AMB CHICKEN POX LOT	Varicella	Baxter Healthcare Corporation	54569-4055-0	06/01/2023	General, VFC	150 each	200 each		Chicken Pox lot record
AMB HEPATITIS A LOT	Hep A, Adult		0006-4096-01	07/06/2023	Vaqta	100 Syringe			Hepatitis A lot record

WORKFLOW IMPROVEMENTS - OUTCOMES

Acceptance rate of 80%

Improvement rates/table -
ImmTrac consents

Decrease in Tradename
rejections

Agenda



PITFALLS BEST PRACTICES

ERROR MONITORING AND CORRECTION

WORKFLOW IMPROVEMENTS

— WHAT'S NEXT —

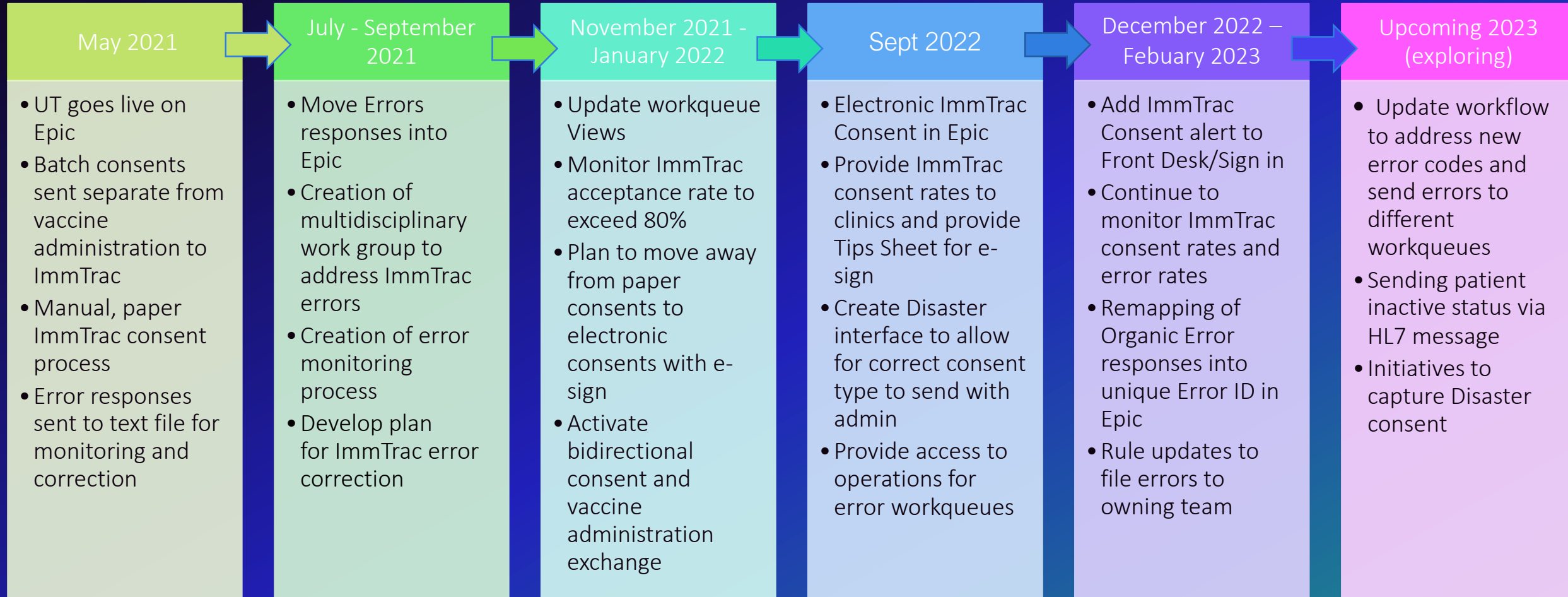


WHAT'S NEXT

What's Next?

- Status updates for Inactive patients via HL7
 - ◆ Interface Workqueue to identify patient
 - **Trigger buttons to update status based on inactive reason**
 - **Monitored and worked by operations**
 - ◆ Reporting workbench report to identify patients
 - **Action buttons to update status and send HL7 message with appropriate reason**
 - **Monitored and worked by operations**
 - ❖ Both options above are in the exploratory phase
- Capturing Disaster Consent
 - ◆ Prompt users to capture disaster consents to store COVID in registry

Recap





Q&A



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