

CAIR2

California Immunization Registry Data Exchange Update

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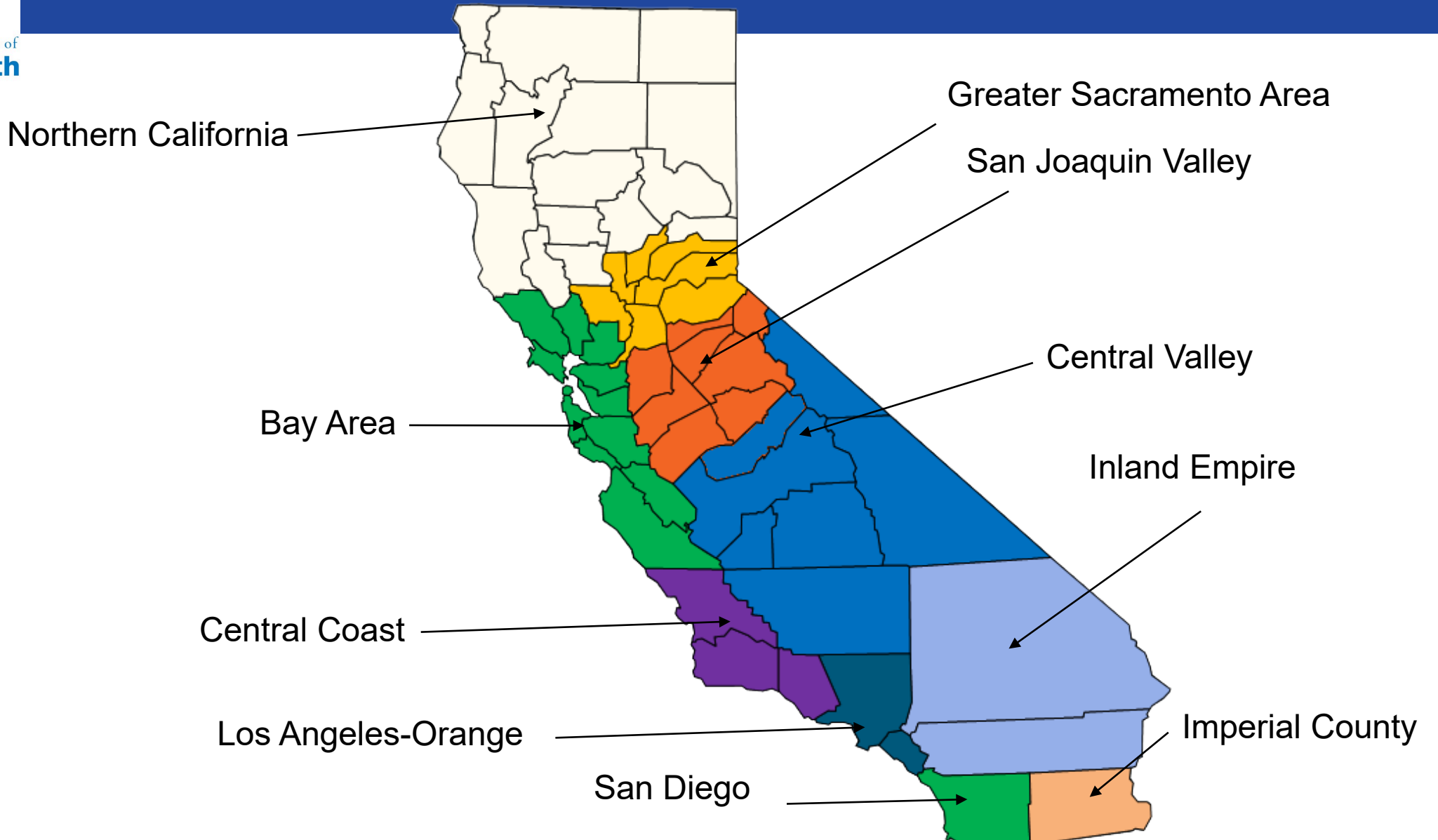
Eric Dansby, MA
Unit Chief, Data Exchange

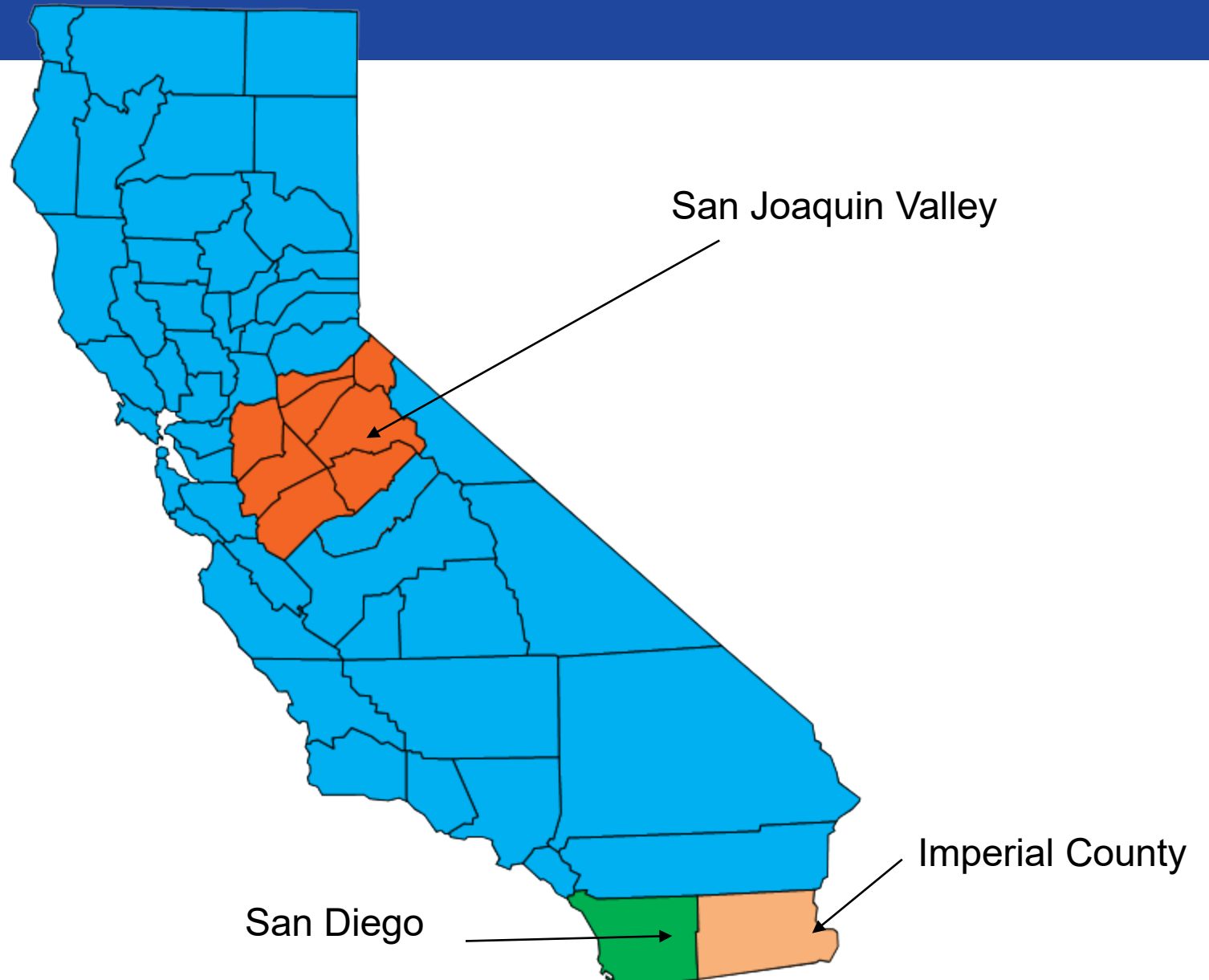
California Healthcare
Best Practices Conference
05/22/2024

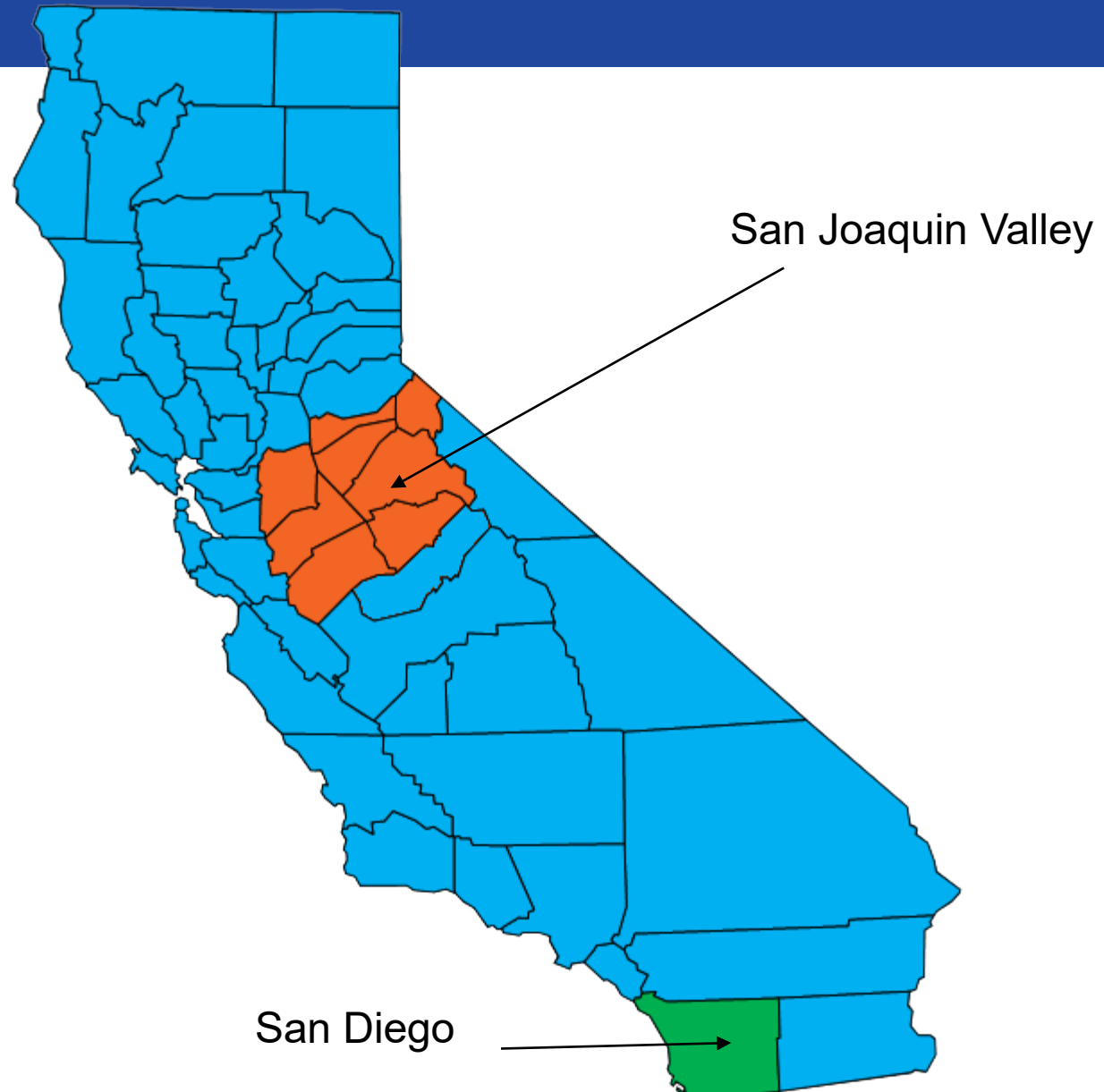
CAIR2 – Patients and Doses*

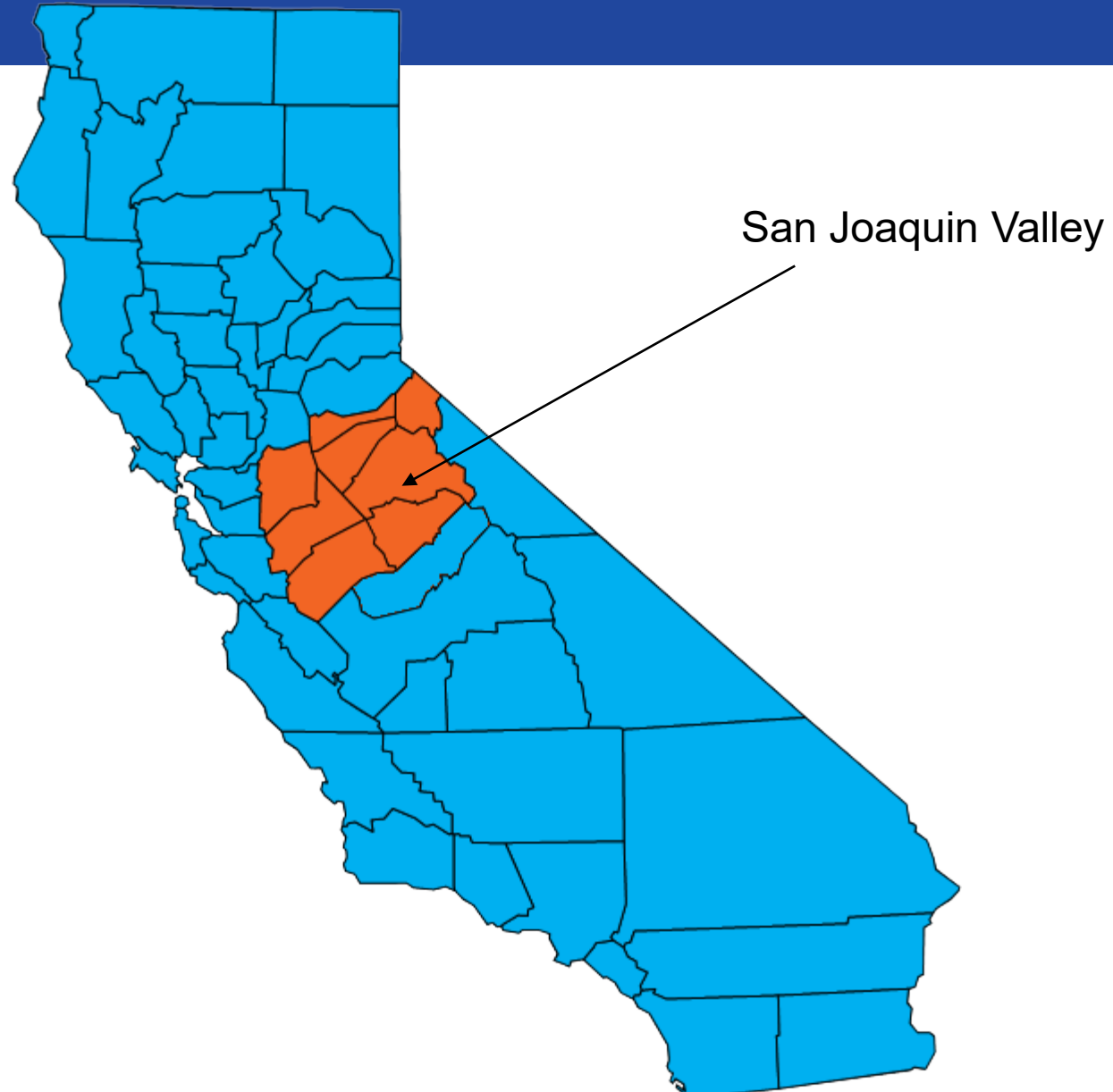
<i>Measure</i>	<i>0-5 yrs</i>	<i>6-18 yrs</i>	<i>19+ yrs</i>	<i>All Ages</i>
Patients In	3,647,454	8,386,116	40,075,054	52,108,624
Patients w/ ≥ 2 doses	2,396,743	7,500,322	34,114,601	44,011,666
Vaccine Doses	42,627,204	173,965,472	354,592,998	571,185,674

* As of April 3, 2024









Migration

- Data Loaded from 1990-March 2022
 - 259 Files Sets
 - 10.5MM Patients
 - 50.7MM Doses (over 6 million COVID doses)
- Inventory
 - ~400 inventory lots imported
 - Imported with RPA on go live weekend

Data Sharing with HF/RIDE

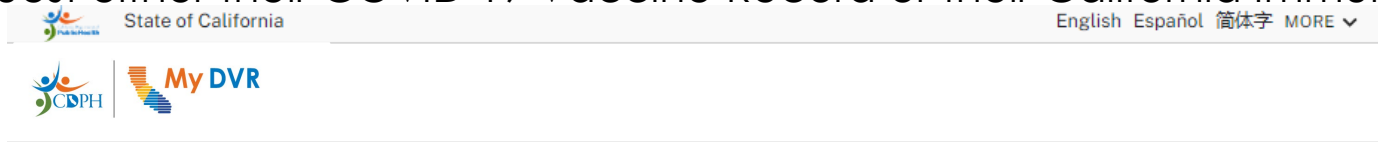
- All HF/RIDE doses available in CAIR2
 - Data sharing complete 11/07/2022
- Existing Healthy Futures users continue to use Healthy Futures
- >1500 HF/RIDE organizations added to CAIR2
- >26MM doses added to CAIR2

- Approved by Governor September 27, 2022
- Amends Health and Safety Code 120440, which governs Immunization Registry data use
- Mandates ALL vaccines administered in California be reported to the Immunization Registry
- Adds required data elements to include race and ethnicity
- From 1/1/2023 to 1/1/2026, allows schools/childcare to lookup COVID-19 vaccination status for attendance purposes

- CDPH has convened teams to manage communications and workflows to support AB 1797 changes
- FAQ's posted to support providers/consumers
 - [AB 1797 Immunization Registry FAQs \(ca.gov\)](#)
- Law effective 1/1/2023

- <https://myvaccinerecord.cdph.ca.gov>
- Go live June 2021
- Over 20 million DVR's delivered to date
- Built on SMART Health Card framework
- Can download to Apple Health, Google Pay, Clear App

Residents can request either their COVID-19 Vaccine Record or their California Immunization Record.



Welcome to the Digital Vaccine Record (DVR) portal

To get a digital copy of your vaccine record, just enter a few details below. You can get a link to your COVID-19 Vaccine Record with a QR code or your California Immunization Record. Save it on your phone and use it as proof of vaccination wherever you go.

If you are a parent or guardian and have multiple vaccine records associated with a single cell phone number or email address, enter each Digital Vaccine Record request separately.

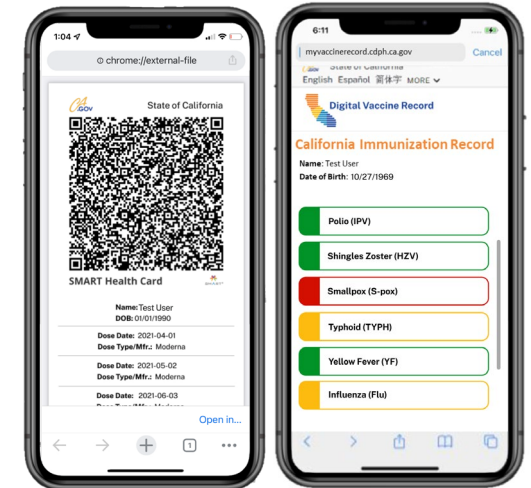
NOTE: It is possible that some or all vaccine doses you received were not reported to the California Immunization Registry (CAIR), and therefore your Digital Vaccine Record may not be complete. If your record is incomplete, please ask your provider to submit your vaccine information to CAIR so we can update your record. It's important that you provide up to date information about yourself (phone, email, first and last name) to your provider so you can access your complete record.

If you received your vaccinations from a federal agency (e.g., Department of Defense, Indian Health Services, or Veterans Affairs), you may need to contact those agencies for assistance with your vaccination record.

If you have questions about your vaccination record, [visit our FAQ](#).

Please select from one of the options below:

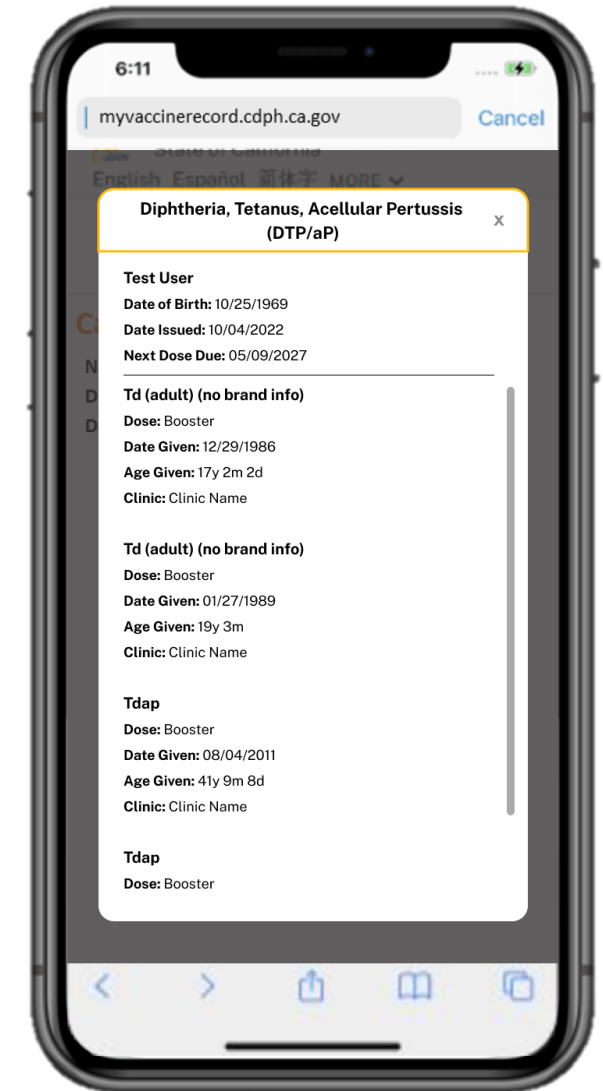
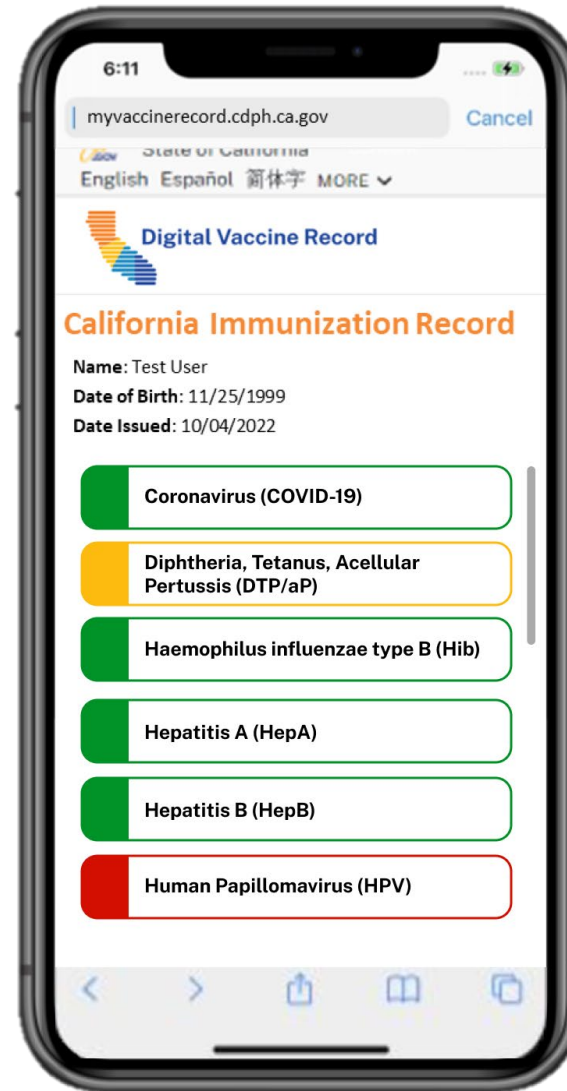
- I want my COVID-19 Vaccine Record with QR code
- I want my California Immunization Record



DVR Mobile Experience

The enhanced Mobile Experience provides residents with a more intuitive mobile interface view of their DVR – displaying the same information in an easier-to-read, mobile browser friendly format.

Residents will have more control over the information they choose to share.




DVR Flier for Providers/LHJs

Revamped the Provider and LHJs flier to provide information on the new DVR Portal and which digital vaccine records a resident can now request.

[IMM-1461.pdf \(eziz.org\)](#)

GET YOUR DIGITAL VACCINE RECORD



Private. Convenient. Secure.

What is a Digital Vaccine Record (DVR)?
Your Digital Vaccine Record (DVR) is an electronic vaccination record from the California Immunization Registry (CAIR) and is an official record of the state of California.

What information does the DVR include?
The DVR has your name, date of birth, vaccination dates, and the vaccine brands you received.

Where do I access my Digital Vaccine Record?
Visit myvaccinerecord.cdph.ca.gov to access your record. You will need to enter your first and last name, date of birth, and mobile number or email address. You will create a PIN which will be required to obtain your DVR when the link to your record is provided to you.

What digital records can I access from the DVR Portal?
There are two types of records you can access from the DVR Portal:

- **COVID-19 QR code** that (when scanned by a SMART Health Card reader) will display the same information as your paper CDC vaccine card: your name, date of birth, vaccination dates, and vaccine type.
- **Record of all your vaccinations** that were reported by pharmacies and healthcare providers to CAIR. Note that your historical vaccination records may not have been reported to CAIR.

For more DVR questions, visit myvaccinerecord.cdph.ca.gov/faq or call **1-833-422-4255** (open M-F 8AM-8PM, SA-SU 8AM-5PM).

- Replaces School Module in CAIR2
- Upload/build your school roster
- Print Blue Cards
- Supports single student lookup



Important Notes

- School Users will be able to access student immunization data via SCRL
- School Clinics will continue to have access to CAIR2
- School nurses will be able to use the Registry to provide immunization services to the patient or client, including issuing reminder notifications to patients or clients or their parents or guardians when immunizations are due.



- **Get Started Video**
 - <https://www.youtube.com/watch?v=Te4v6bKAQ68>
- **CAIR Hub User Guides**
 - [CAIR Hub | Welcome to CAIR Hub](#)
- **Enroll**
 - [How to Register for CAIR Hub and Enroll an Organization in SCRL.pdf](#)
- **FAQ**
 - [School and Childcare Roster Lookup Resources](#)
- **Feedback:**
 - CAIRHub@cdph.ca.gov



Data Exchange Update

In July 2022, the Data Exchange Team was split into two separate units: Data Exchange and Data Quality

- **Data Exchange Unit:**

- ⑩ Provider Onboarding – Enrollment / Testing / Production
- ⑩ Provider Support – Connectivity Issues and Message Structure/Content Issues
- ⑩ HL7 specification document creation and maintenance

- **Data Quality Unit:**

- ⑩ Review of incoming data and data at rest
- ⑩ Outreach activities to provider sites for data correction
- ⑩ SME for staff that merge and unmerge patient records in CAIR

CAIR2 accepts only HL7 2.5.1 messages

Incoming to CAIR2:

- **VXU** (Vaccine Update, Unsolicited) is the HL7 message type that your EHR uses to send patient vaccinations to CAIR2.
- **QBP** (Query By Parameter) is the HL7 message type that your EHR uses to query CAIR for patient vaccination history and/or history plus immunization forecasts

Outgoing from CAIR2:

- **ACK** is an 'acknowledgement' message sent back to your EHR by CAIR2 indicating the message status of the VXU submitted.
- **RSP** is the 'response' message sent back to your EHR by CAIR2 from a query message. It will also contain the status of the QBP message, should there be any errors in the QBP.



Sample VXU (Vaccination Message)

MSH|^~\&|MyEMR|DE-000001| |CAIR2|20230730123030-
0700| |VXU^V04^VXU_V04|CA0001|P|2.5.1| |ER|AL| | |Z22^CDCPHINVS|DE-000001

PID|1| |PA123456^^^MYEMR^MR| |JONES^GEORGE^M^JR^^^L| MILLER^MARTHA^G^^^M|20140227|M
| |2106-3^WHITE^CDCREC~2040-4^KOREAN^CDCREC|1234 W FIRST ST^^BEVERLY
HILLS^CA^90210^^H| |^PRN^PH^^^555^555555~^PRN^CP^555^2223333~^NET^Internet^noemail@noe
mail.com| |ENG^English^HL70296| | | |2186-5^not Hispanic or Latino^CDCREC| |Y|2

PD1| | | | | | | | |02^REMINDER/RECALL – ANY METHOD^HL70215|N|20230730| | |A|20140730|

NK1|1|JONES^MARTHA^^^L|MTH^MOTHER^HL70063|1234 W FIRST ST^^BEVERLY
HILLS^CA^90210^^H|^PRN^PH^^^555^555555|

ORC|RE| |197023^CMC| | | | |^Clark^Dave| |1234567890^Brown^Jimmy^^^^^NPPES^L^^^NPI^^^^^^
^MD

RXA|0|1|20230730| |58160-0842-52^Tdap^NDC^115^Tdap^CVX|0.5|mL^mL^UCUM| |00^NEW
IMMUNIZATION RECORD^NIP001|**1234567890**^Smith^Janet^^^^^NPPES^^^NPI^^^^^^^PA |^^^DE-
000001| | |0039F|20250531|SKB^GlaxoSmithKline^MVX| |CP|A

RXR|C28161^INTRAMUSCULAR^NCIT|LA^LEFT ARM^HL70163

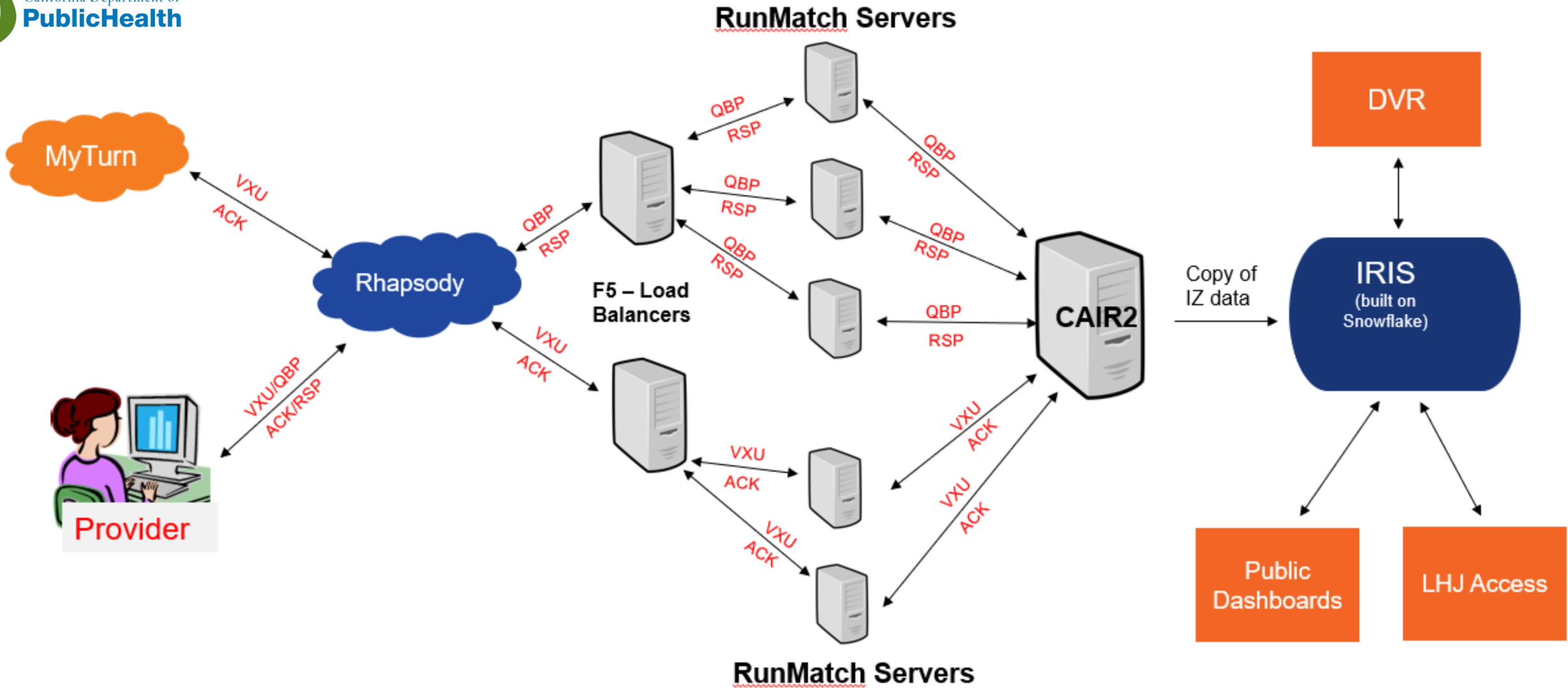
OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V03^VFC eligibility –
Uninsured^HL70064| | | | |F| |20230730140500

OBX|2|CE|30963-3^VACCINE FUNDING SOURCE^LN|1|VXC51^Public-VFC^CDCPHINVS| | | | |F

Sample QBP (Query Message)

MSH|^~\&|Epic|SF-
015257|CAIR2|CAIR2|20240214080446|180204|QBP^Q11^QBP_Q11|14|P|2.5.1|||ER|AL|||Z34^CDCPHINVS||
CAIR2
QPD|Z34^Request Immunization
History^HL70471|49006|6488654^^^|PI^SR|Jones^Jughead^James^^^|20200501|M|^
RCP||5^RD&records&HL70126|R^Real Time^HL70394

Data Exchange Message Path (high level)



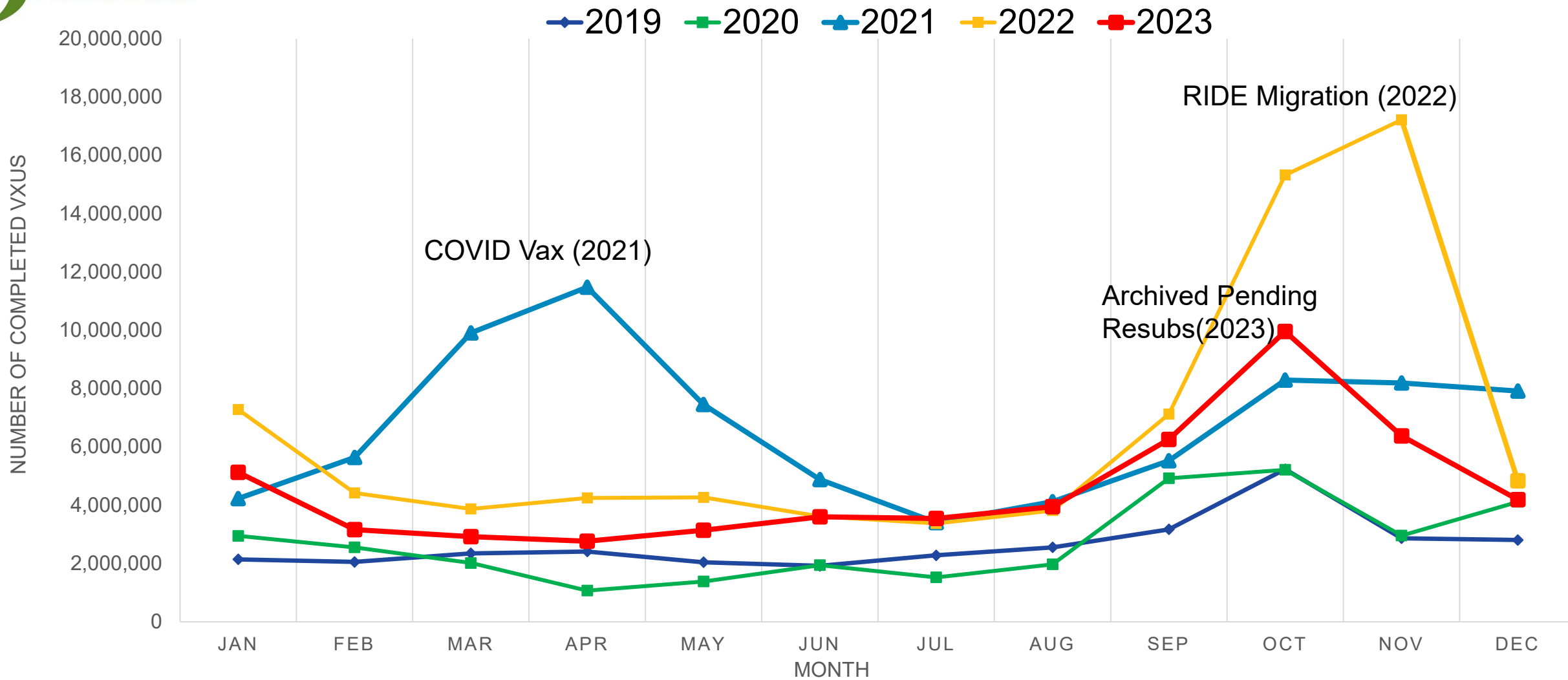
Data Exchange Numbers 2023

Over **55M** vaccination messages (VXUs) received

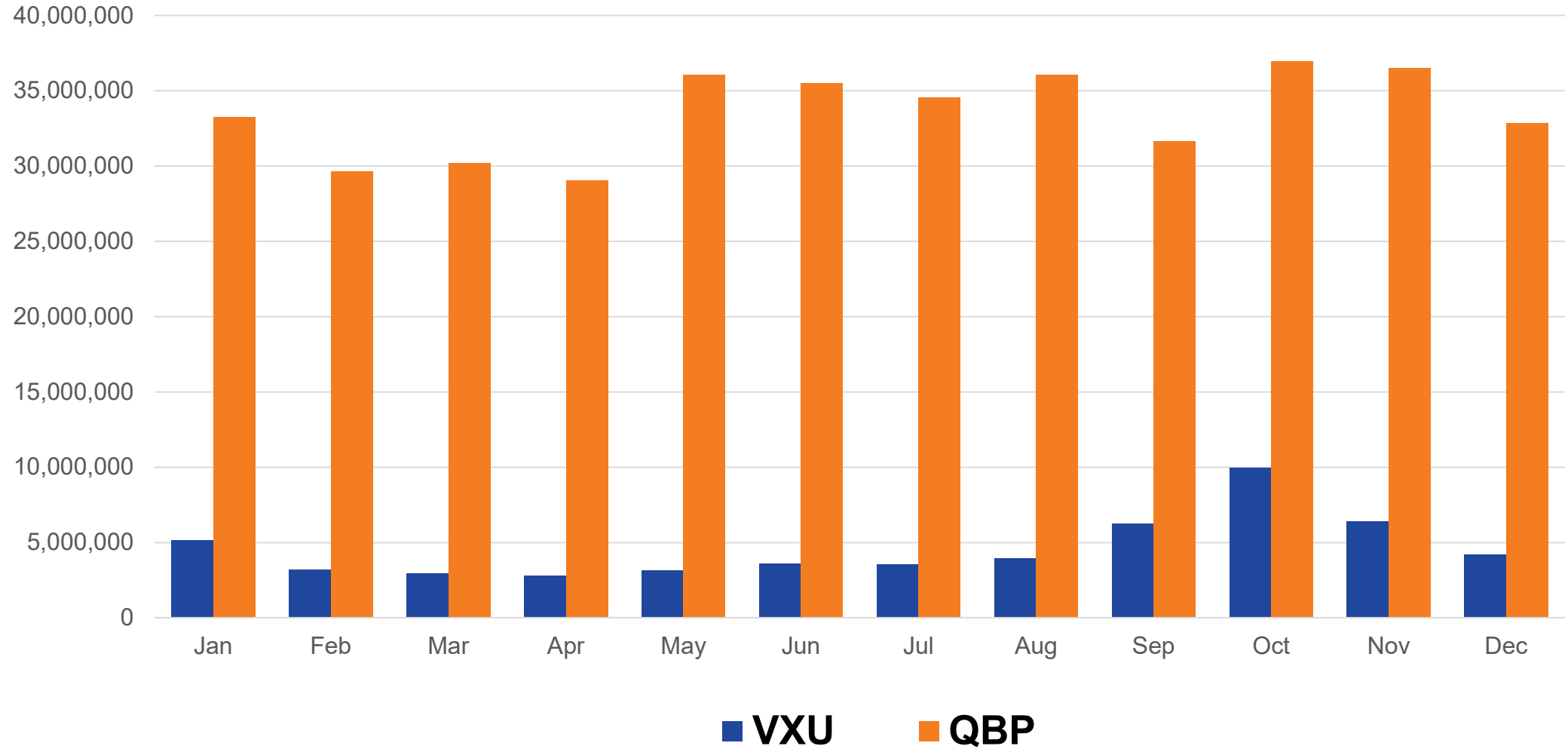
Over **402M** query messages (QBP) received

Total average VXU rejection rate for 2023 < 2%

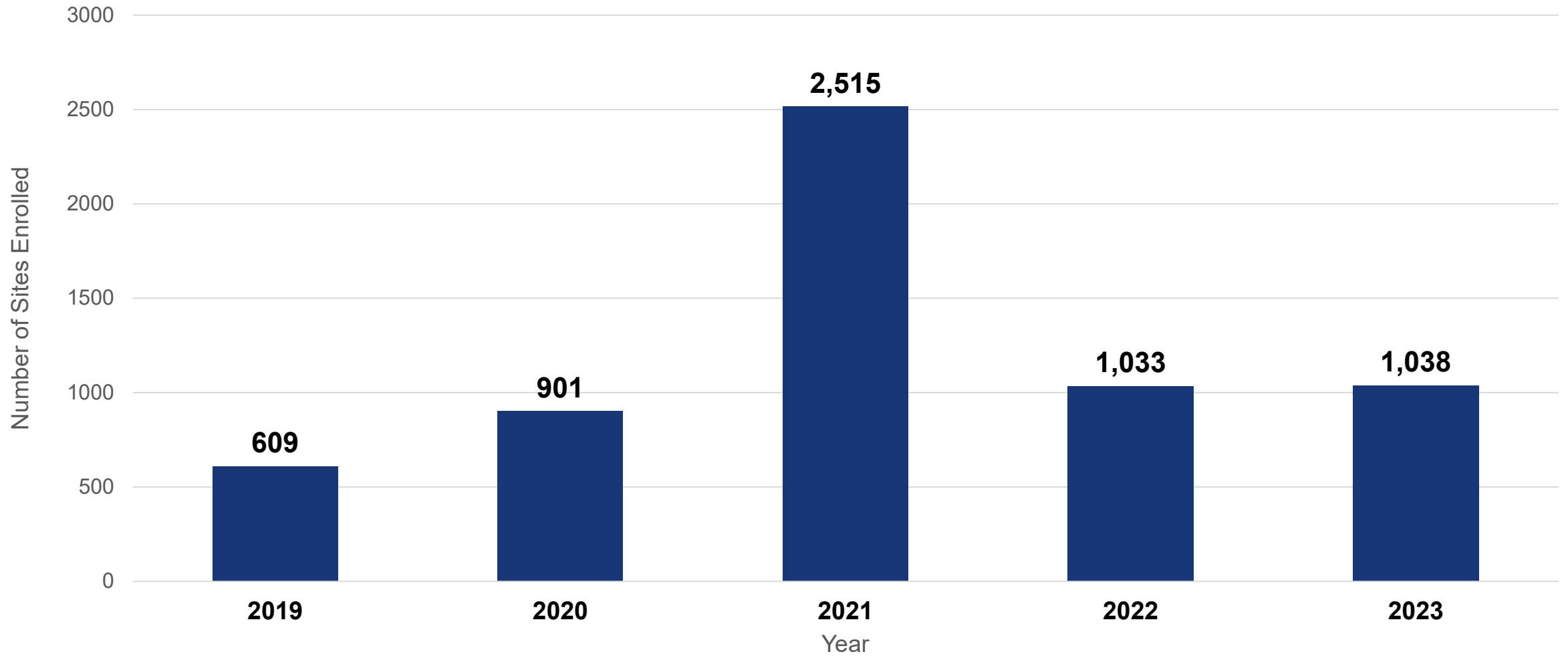
VXUs Received in CAIR2 by Month/Year (completed only)



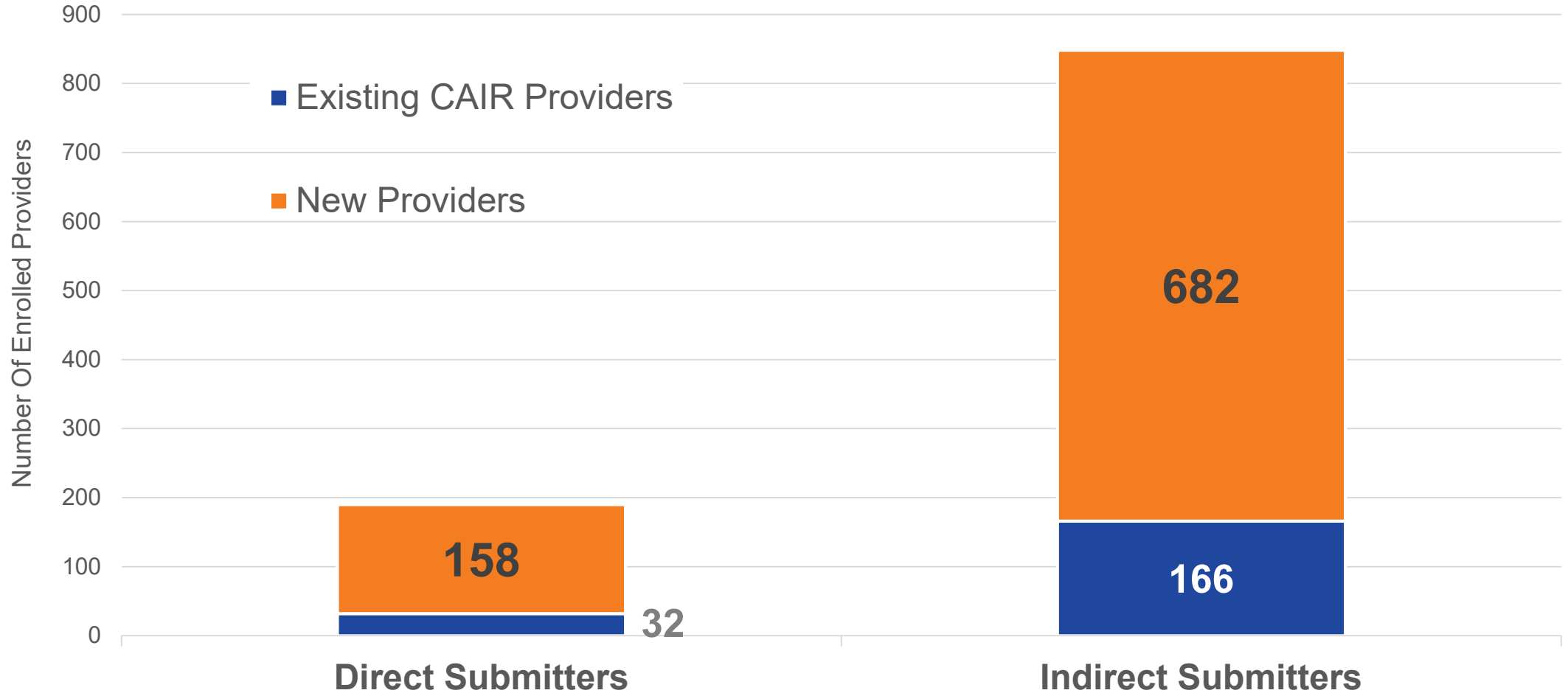
VXU and QBP's Received in CAIR2 in 2023, by Month (completed)



DX Provider Enrollment by Year – IGS Portal



Data Exchange Update – Enrollments 2023



DX Enhancements/Changes to CAIR2 since 2022

- December 2022 - Updated all ACKs to better conform with the CDC HL7 standards.
- All non-US vaccine codes added to CAIR2 to accept vaccines given out of the US
 - All non-US vaccines will be inserted in CAIR as 'historical'.
- AB 1726 – Race sub-categories have been added to CAIR2 under the Asian and Hawaiian / Pacific Islander race categories. 23 new race categories added.
- Added a “Prefer no to say” value to both the race and ethnicity fields.
- “Vaccine Funding Source” along with “Vaccine Eligibility” category is now requested to be submitted in every VXU message if the vaccine is marked in the VXU as given.
- “Ordering Provider” and “Administered By” names are required to be submitted in the VXU with every vaccination marked as given.
- Robotic Process Automation software used to assist with record merging.

Data received through the IZ Gateway

- **Veteran's Health Administration (VHA) live in 2022**
 - ~75 sites
- **Department of Defense went live on August 30, 2023**
 - ~134 sites
- **Refugee Immunization Information Systems Exchange (RIISE) went live on October 17, 2023**

*The Immunization (IZ) Gateway is a centralized technical infrastructure that facilitates the flow of immunization data through an intelligent message router. The IZ Gateway is sponsored by the Centers for Disease Control and Prevention (CDC) and led by the Department of Health and Human Services (HHS) Office of the Chief Technology Officer.

Data Quality

Patient Data should be accurate

- User Issues - Is patient info entered into EHR correctly?
- EHR Issues - Is patient info sent to CAIR correctly?

Patient Data should be complete

- The more patient info CAIR2 has, the higher the probability that incoming data will be merged to the correct patient.

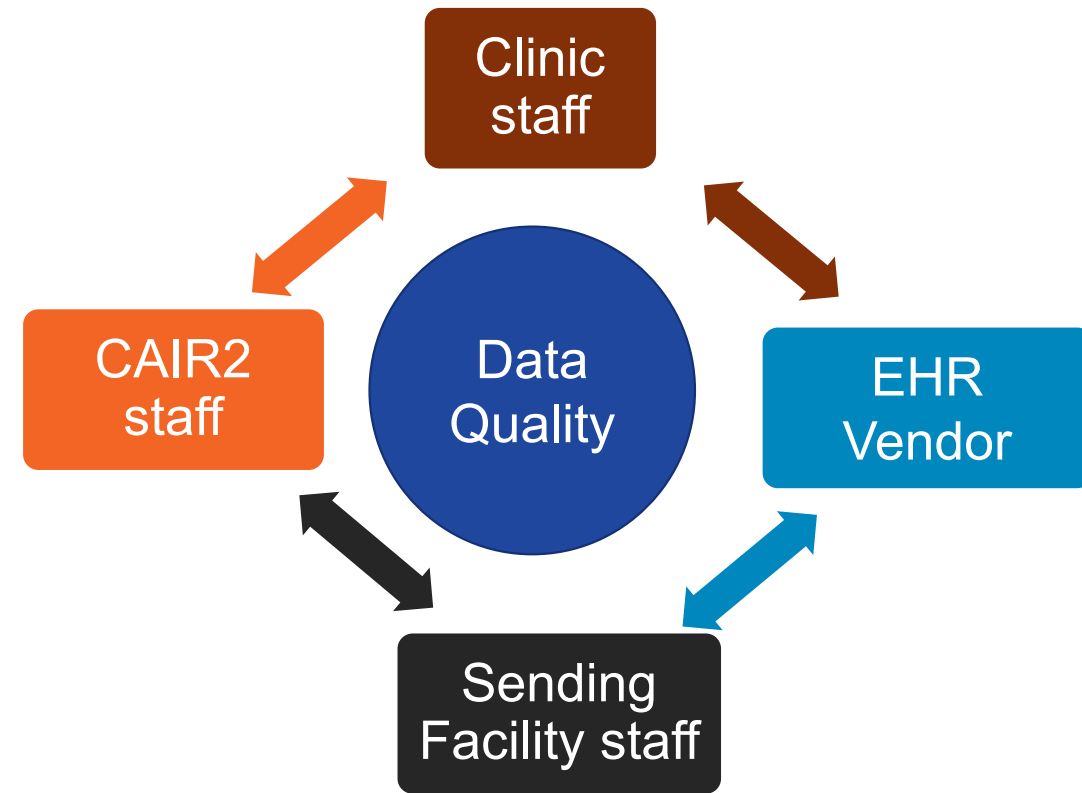
Patient Data should be timely

- Timely submission guarantees that data is in CAIR by next doctor visit

Maintaining Data Quality

To ensure that only high-quality data is sent to CAIR2, sites sending data from EHR systems should make sure their staff:

- Enter accurate and complete patient demographic and shot information into their EHR
- Work with vendor or staff to resolve any data accuracy or integrity issues
- Monitor DE submissions to CAIR2 on an ongoing basis to ensure continuity and accuracy



Confirm data quality by:

- Monitoring your clinic's DX message flow and proper data quality either via your EHR or through use of the 'Check Status' screen in CAIR2
- Communicate with your vendor if message flow is interrupted or excess errors occur
- Periodically look up patients in CAIR2 to make sure the records in CAIR2 accurately reflect what your EHR has sent



Check Status Page in CAIR2

https://www.cdph.ca.gov/Programs/CID/DCDC/CAIR/CDPH%20Document%20Library/CAIR2_DX_QA_Quick_Guide.pdf



Quick Guide for Data Exchange Check Status Feature

Monitoring Data Quality for Data Exchange Power and Quality Assurance Users

Revised: 4/12/23

Important Note: This Quick Guide only describes how to log into CAIR2 and use the Check Status feature. The Check Status feature allows a clinic to monitor ongoing Data Exchange activity.

Exchange Data Status

Job Date: Start Date: 04/11/2023, End Date: 04/11/2023

Job Time: Start Time: 12:00, End Time: 11:59

Job Status: All, Mode: Realtime, Message Type: All

Job Action: All

MSH-10 Search: [Empty field]

*MSH-10 search will not return result prior to 09-19-2021.

Results Returned 0 - 0 of 0

Job Name	Job Type	Exchange Data Date	Process Start Date	Process End Date	Message Type	Job Status	Job Action
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Results Returned 1 - 80 of 80 Page 1 of 1

Job Name	Job Type	Exchange Data Date	Process Start Date	Process End Date	Message Type	Job Status	Job Action
Realtime 04/05/2023 08:37:49	Realtime	04/05/2023 20:37:49	04/05/2023 20:37:49	04/05/2023 20:37:49	VXU	Complete	No action required
Realtime 04/05/2023 08:28:21	Realtime	04/05/2023 20:28:21	04/05/2023 20:28:21	04/05/2023 20:28:21	VXU	Error	Message/Segment Rejected - Correct and Resubmit
Realtime 04/05/2023 04:48:50	Realtime	04/05/2023 16:48:50	04/05/2023 16:48:50	04/05/2023 16:48:50	VXU	Error	Message/Segment Rejected - Correct and Resubmit
Realtime 04/05/2023 04:30:43	Realtime	04/05/2023 16:30:43	04/05/2023 16:30:43	04/05/2023 16:30:43	VXU	Complete	Message Accepted - Error Correction Requested
Realtime 04/05/2023 03:23:41	Realtime	04/05/2023 15:23:41	04/05/2023 15:23:41	04/05/2023 15:23:42	VXU	Complete	Message Accepted - Error Correction Requested

WARNINGS: Does not prevent the immunization from posting in CAIR2

- Warning: PID-22 Ethnic Group was not present. Correct and resubmit.
- Warning: PID-10 Race Code was not present. Correct and resubmit.
- Warning: OBX-5 Vaccine Eligibility is required. Correction Requested.
- Warning: OBX-5 Vaccine Funding Source is required. Correction Requested.
- Warning: RXA-10 Administering Provider is required when RXA-9 is an administered immunization (00). Correction Requested.
- Warning: Home Phone or Cell Phone is missing or invalid. Correct and resubmit.

ERRORS: All errors will need to be corrected and resubmitted to CAIR2 for the vaccine to post.

- RXA Ignored. The vaccine code in RXA-5.1 does not match with the vaccine code in RXA-5.4
Correct and resubmit
- RXA segment rejected. Invalid vaccine administration date in RXA-3. Correct and Resubmit.
- RXA segment rejected. (96) is an invalid CVX code in RXA-5.1. Correct and Resubmit.

Provider Outreach

- **RXA-5 field** – Sites submitting invalid (or no) vaccine codes
- **PID-13 field – Contact field format errors**
 - Phone / Cell / Email w/ > 25% errors
- **Locked record submissions (PD1-12='Y')**
 - Sites sending > 10% of VXUs as 'not shared'
- **No Data Received**
 - Provider orgs enrolled for >60 days with no data submissions
- **Daily error outreach** – Daily outreach to providers with failed VXU messages
 - Missing org codes in the VXU
 - Sending org code not matching with owning org code

Data Exchange Documents 2024

- Updating both VXU and QBP implementation guides
 - More field formatting examples
 - More detailed ACK section
- Updating VXU and QBP testing plans
- Releasing an ACK Error Guide
 - Guide will provide error descriptions/examples for providers/vendors
 - Includes suggestions on how to correct the errors/warnings

QUESTIONS ?

General Data Exchange Questions

CAIRDataExchange@cdph.ca.gov

CAIR Website

[https://www.cdph.ca.gov/Programs/CID/DCDC/CAIR/
Pages/CAIR-updates-about.aspx](https://www.cdph.ca.gov/Programs/CID/DCDC/CAIR/Pages/CAIR-updates-about.aspx)

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