



AIR A 2021

NATIONAL MEETING

AUG. 3-5, 2021 | PORTLAND, OREGON

WELCOME #AIRA2021



Digital Vaccine Cards in California

Christopher A. Longhurst, MD, MS

Chief Information Officer and Associate Chief Medical Officer

Clinical Professor of Pediatrics and Medicine (Biomedical Informatics)

clonghurst@ucsd.edu | [@calonghurst](https://twitter.com/calonghurst)



UC San Diego Health

- Part of UC Health (4th largest health system in CA)
 - Medical center – 9000+ employees + 800 beds
 - 3 professional schools – 1600+ faculty



COVID @ UC San Diego - 2020

Evacuee from China tests positive for coronavirus in San Diego

By Associated Press • Feb. 10, 2020



ASSOC
A plane
Diego.

Journal of the American Medical Informatics Association, 27(6), 2020, 853–859
doi: 10.1093/jamia/ocaa037
Advance Access Publication Date: 27 April 2020
Research and Applications



Research and Applications

Rapid response to COVID-19: health informatics support for outbreak management in an academic health system

J. Jeffery Reeves¹, Hannah M. Hollandsworth¹, Francesca J. Torriani², Randy Taplitz², Shira Abeles², Ming Tai-Seale³, Marlene Millen⁴, Brian J. Clay⁴, and Christopher A. Longhurst⁴

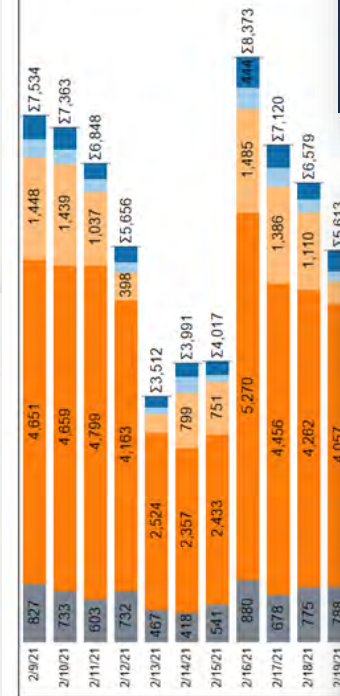
¹Department of Surgery, University of California, La Jolla, San Diego, California, USA, ²Department of Medicine, Division of Infectious Disease and Global Public Health, University of California, San Diego, California, ³Department of Family Medicine and Public Health, University of California, La Jolla, San Diego, California, USA, ⁴Department of Medicine, Division of Biomedical Informatics, University of California, La Jolla, San Diego, California, USA

*Corresponding Author: James Jeffery Reeves, MD, University of California, 9300 Campus Point Drive, MC7400, La Jolla, San Diego, CA 92037-7400 USA (jreeves@health.ucsd.edu)

Received 18 March 2020; Editorial Decision 18 March 2020; Accepted 19 March 2020

UNIVERSITY OF CALIFORNIA HEALTH

Number of tests
Patients with tests on two days are counted on
of test on one day are counted twice on that
dashboards v



LAB80122	CORONAVIRUS DISEASE 2019 (COVID)	37,811
LAB80130	CORONAVIRUS DISEASE 2019 (COVID)	4,882
LAB80138	COVID/FLU A B/RSV PANEL STAT	6,736
LAB80151	COVID-19, FLU A/B PANEL (POC)	5,021

California can stop the spread

Add your phone today to California's exposure notification system

Activate on iPhone | GET IT ON Google Play

Powered by

UC San Diego Health | CDPH | CALIFORNIA ALL | CALIFORNIA DEPARTMENT OF TECHNOLOGY

Health

Petco Park Vaccine Super Station – Jan 2021

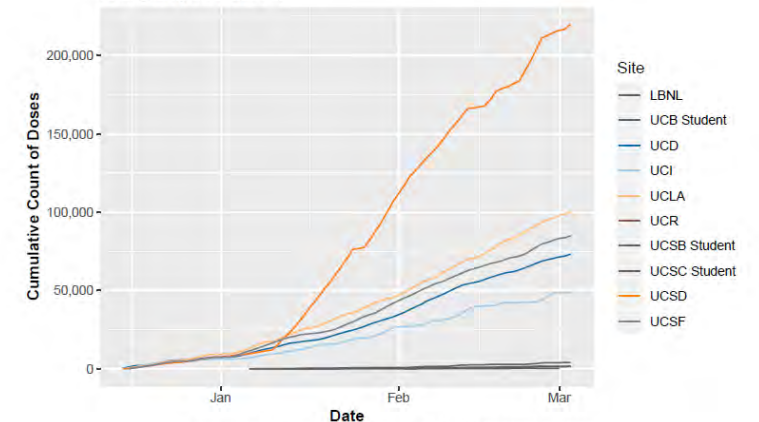


A = entrance B = registration tents C = vaccination tents D = exit



University of California Health
Cumulative SARS-CoV-2 vaccination doses administered

Arranged by date and site



Preliminary analysis, subject to change, generated on March 04, 2021

VCI Supports SMART® Health Cards for Verifiable Clinical Information

OPEN

SIMPLE

EQUITABLE

**PRIVACY-
PRESERVING**

COMMUNITY-SUPPORTED

Vaccination Credential Initiative

About the Vaccination Credential Initiative

The Vaccination Credential Initiative (VCI) brings together healthcare organizations, technology firms, nonprofits, academia, and startups working to empower consumers to conveniently access, store, and share digital COVID-19 vaccination records.

carin Cerner

CHANGE HEALTHCARE The Commons Project

Epic Mass General Brigham

MAYO CLINIC Microsoft

MITRE uchealth

UC San Diego HEALTH SYSTEM salesforce

... and more

<https://vci.org/>

What are SMART Health Cards?



SMART Health Cards are paper or digital versions of your clinical information, such as vaccination history or test results. They allow you to keep a copy of your records on hand and easily share this information with others if you choose.

<https://smarthealth.cards/>



California Issues SMART Health Cards, June 18

Required fields marked with *

First name*

Your

Last name*

Name

Date of birth*

01/01/2000

Provide the cell phone or email used when you received your COVID-19 vaccine.

☒ Cell Phone ☐ Email

Cell Phone*

(123) 456-7890

Set a 4-digit PIN code to access your vaccine record. *

4 3 2 1

Note: this code will not be sent to you, so

☒ By checking this box, you are declaring under penalty of perjury under the laws of the State of California that you are the Patient or Parent/Guardian of the Patient and are therefore authorized to access the Patient's immunization record.

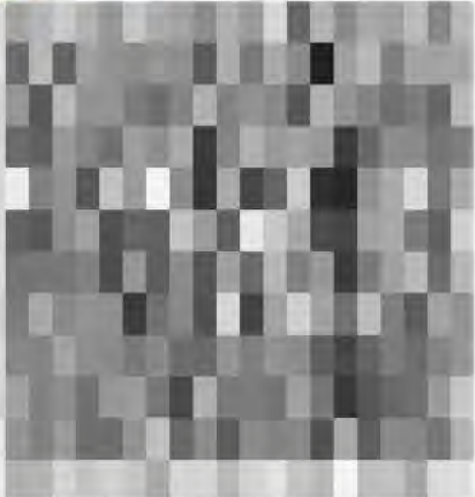
Submit

Safe, free, and effective COVID-19 vaccines are now available to everyone age 12 and up, [get vaccinated.](#)

[CA.gov home](#)

Personal Digital COVID-19 Vaccine Record

[CA.gov](#) State of California



Vaccination Information:

Name:

DOB:



More than 1M California residents downloaded their digital vaccine record within 2 weeks of launch

UCSD Health Issues SMART Health Cards through Epic, June 29

UC San Diego Health Adopts SMART Health Card for Digital Vaccine Records

First U.S. health system to offer direct online access to secure, verifiable vaccination documentation

June 29, 2021 | Jackie Carr and Melinda Battenberg

UC San Diego Health is now offering a verifiable digital vaccine record to its patients who have or will receive a COVID-19 vaccine. These secure online records, otherwise known as a SMART health card, can be accessed directly from the MyUCSDChart patient portal.



UC San Diego Health now offers a verifiable digital vaccine record to its patients.

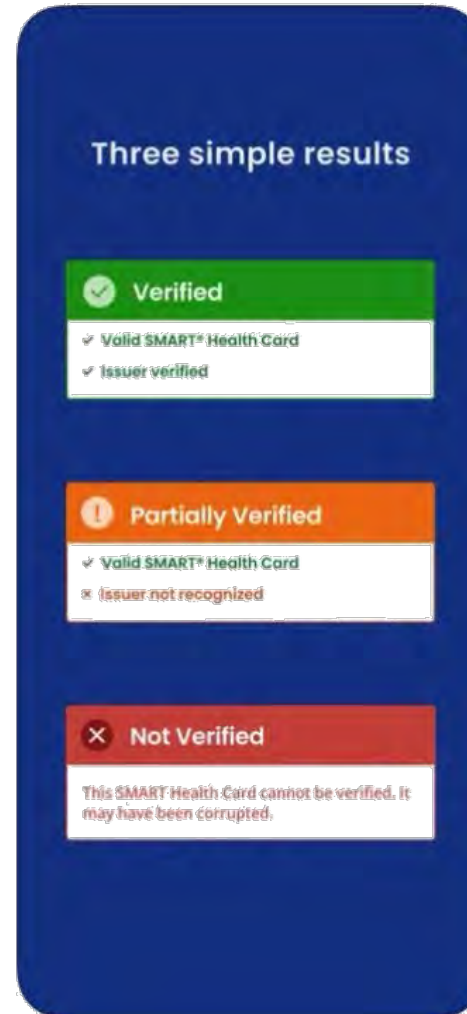
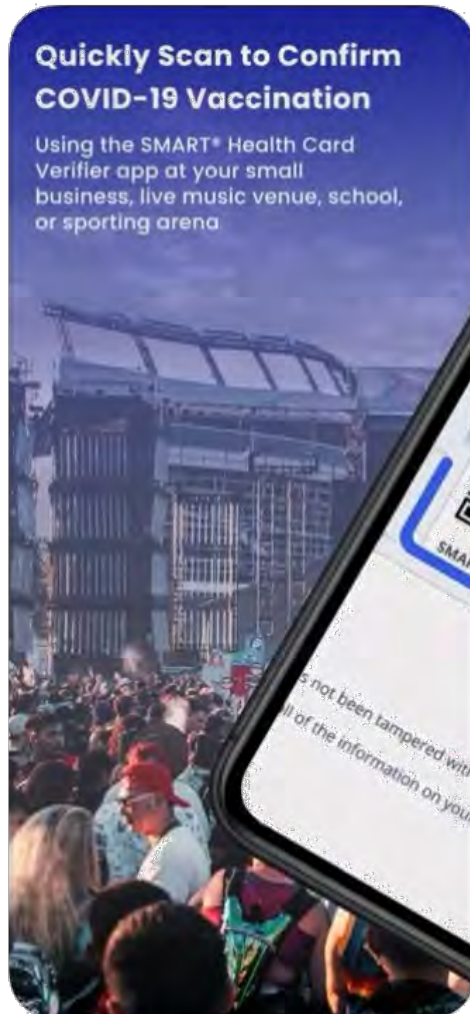
"The SMART Health Card offers those who have received a COVID-19 vaccine or tests from UC San Diego Health an easy way to digitally share their health documentation," said Christopher Longhurst, MD, chief information officer at UC San Diego Health. "As an alternative to the paper card, the SMART Health Card cannot be lost or damaged. It is secure and protects the privacy of patient information."



Across UC Health...

- UC San Diego and UC Irvine Health live now
- UC Davis Health planning rollout this month
- UCLA and UCSF pending Epic code update

SMART® Health Card Verifier from The Commons Project, July 8



Indoor Dining in California, July 2021

Los Angeles Times

CALIFORNIA

More L.A. restaurants are requiring COVID-19 vaccines or tests amid Delta variant surge



Nursing student Brittany Corlyn is drawing medicine into a syringe at a vaccination clinic at the Providence Well Center on Tuesday in Wilmington. (Francine Orr / Los Angeles Times)

San Francisco Chronicle

FOOD

S.F. bar group is recommending its 500 members require vaccine proof for entry



Tanay Warerkar

July 26, 2021 | Updated: July 27, 2021 7:58 a.m.



The Mission District's Latin American Club is among a growing number of Bay Area establishments requiring proof of vaccination for entry. Nick Otto/Special to The Chronicle



Travel with SMART® Health Cards, July 2021

Jul 12

PRESS RELEASE: State of Hawaii Adopts CommonPass Digital Health App, Enabling All Domestic Travelers with SMART Health Cards to Streamline Entry into the State

U.S. travelers to Hawaii with SMART Health Cards can now use the CommonPass app to digitally verify their COVID-19 vaccination status ahead of departure, bypassing select visitor requirements



What's next?

Issuers	Verifiers
Health systems	Airlines
State registries	Cruises
Health plans	Events / entertainment
Labs	Employers
	Schools





Questions?

Chris Longhurst, MD, MS
clonghurst@health.ucsd.edu

[@calonghurst](#)



How are IIS supporting digital vaccine credentials?

Nathan Bunker



AIRA's Strategy for 2021

- Explain what IIS can do now
 - IIS have good support for query

AIRA's Strategy for 2021

- Explain what IIS can do now
 - IIS have good support for query
- Explore technical feasibility
 - With focus on consumer access

AIRA's Strategy for 2021

- Explain what IIS can do now
 - IIS have good support for query
- Explore technical feasibility
 - With focus on consumer access
- Keep implementation decisions local
 - IIS will decide what will be implemented



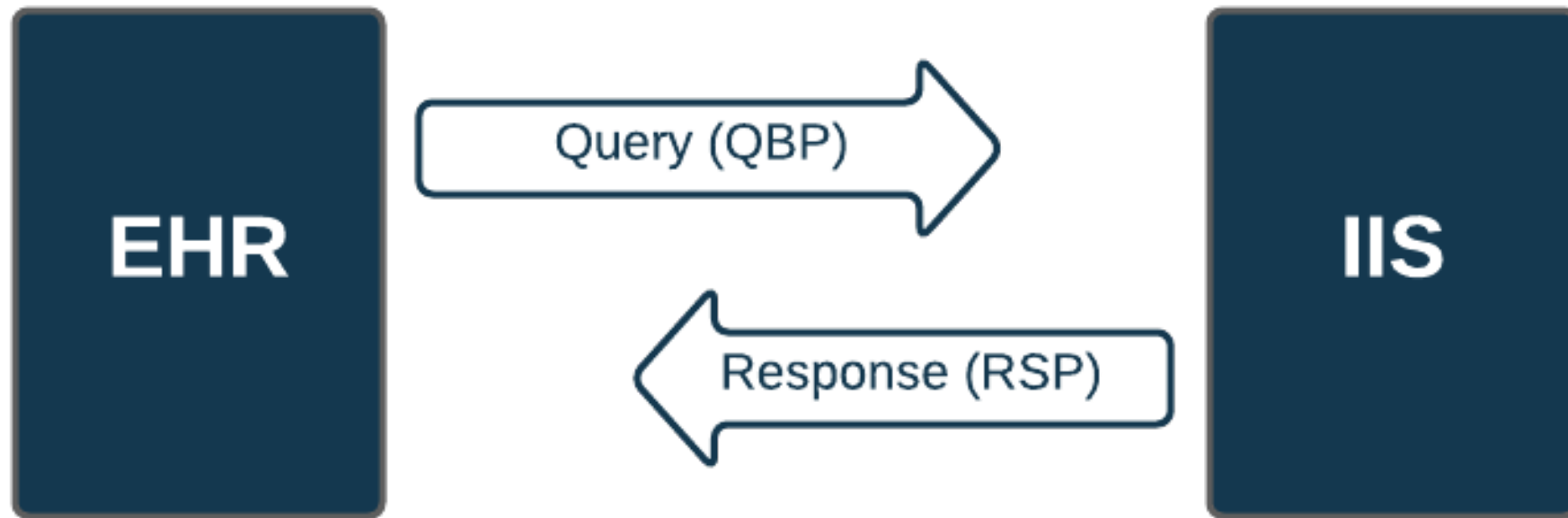
About

Events

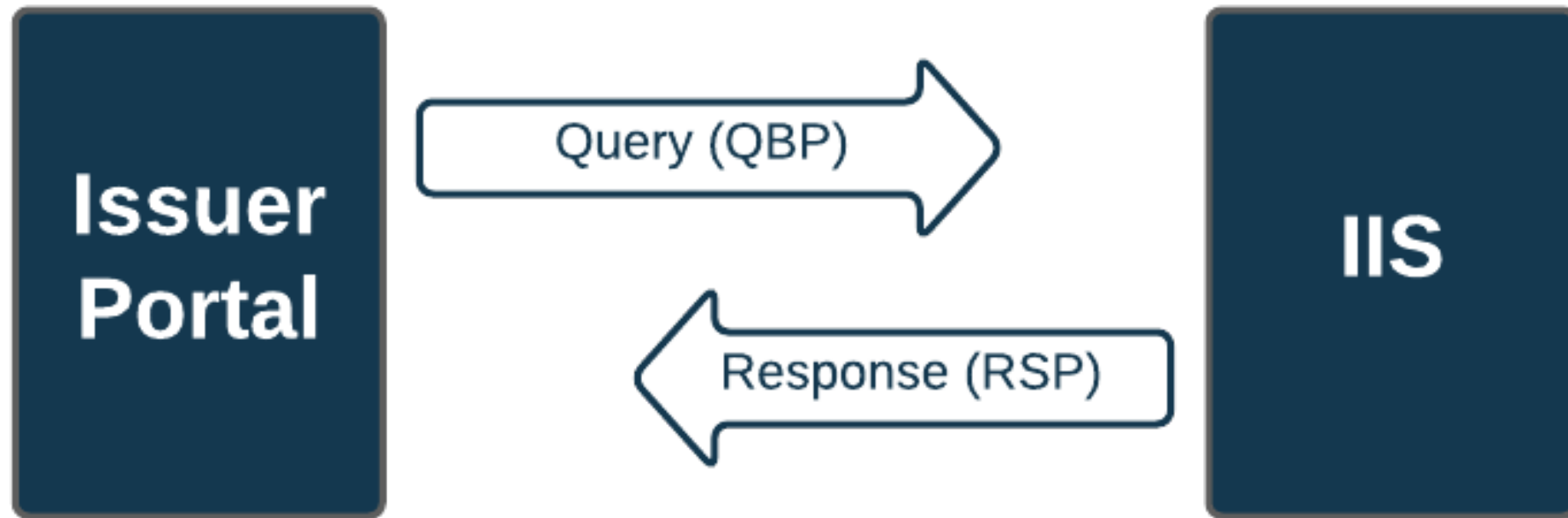
Empowering individuals to gain access
to their verifiable clinical information

<https://vci.org/>

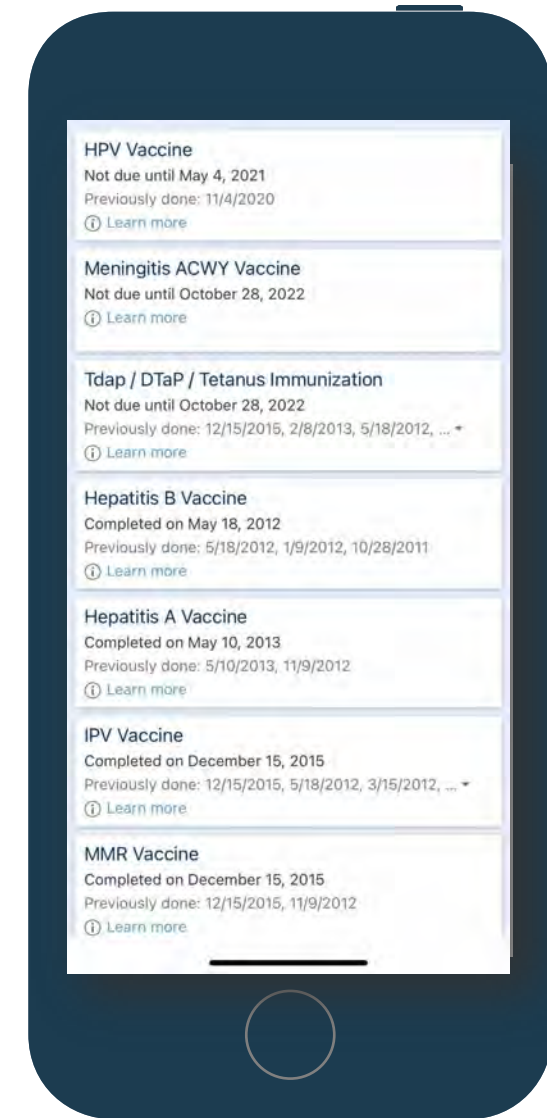
Current Architecture



Potential Architecture



Vaccine Credential



MITRE

+

AIRA

Let's find your digital vaccination record.

Your **SMART Health Card** contains your verifiable vaccination record that you can share with others if you choose in a safe and privacy-preserving way.

FIRST NAME *

LAST NAME *

DATE OF BIRTH *

mm/dd/yyyy



* required fields

SEARCH



Epidemic Prevention Vectors by Vecteezy

Courtesy of The MITRE Corporation

This system is for test purposes only. Do not submit production data. As a precaution all submitted data will be deleted once a day.

Documentation

Please see the project wiki: <https://github.com/immregistries/IIS-Sandbox/wiki>

Primary Functions Supported

Send Now: Send an HL7 message in now.

Messages: Review recently submitted messages

Patients: See data received by patient

Patients: See administered-at-locations

CDC WSDL: HL7 realtime interfacing using CDC WSDL



MITRE

+

AIRA

MI MEASUREMENT & IMPROVEMENT

Vaccine Credential

What is it?

Vaccine Credential

Digital Signature

- Identity of Issuer

Patient

- Name
- Date of Birth

Vaccine(s)

- Code - CVX
- Date



What's Next

- Participate in MITRE demonstration project
 - Allow us to use connection to test system
- Please tell us what you need
 - Ask for technical assistance
- Participate in SISC Small Groups
 - Several topics will be proposed
 - Volunteer for what is relevant



Vaccine Credentialing Solutions

August 2021

Jon Reid
USIIS Program Manager
jreid@utah.gov

immunize.utah.gov/usiis



Overall Data Statistics



Utah Statewide Immunization Information System (USIIS)

- ❖ Created in 1996
- ❖ Opt-out system
- ❖ Contains all ages
- ❖ Voluntary participations by providers
 - ❖ VFC immunizations must be reported
 - ❖ Pharmacies required by DOPL Vaccine Administration Protocol
 - ❖ State rule r386-800
- ❖ Total Identities: 5,863,072
- ❖ Total Vaccine records (2000-2021): 56,302,940
 - ❖ COVID Records: 3,032,152
- ❖ Providers: 3598

Consumer Access Methods



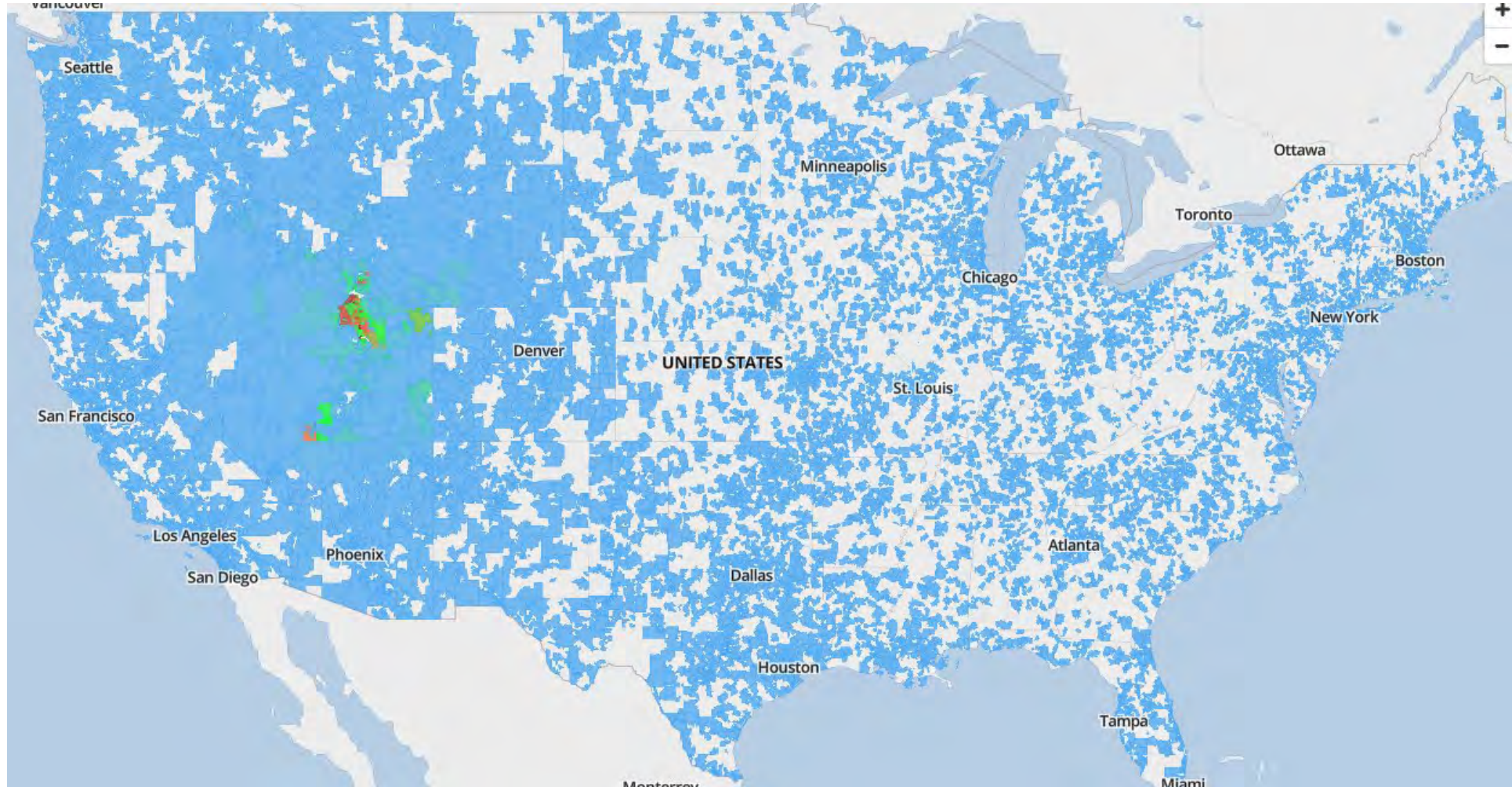
Enable individual to access own immunization record

Methods supported:

- ❖ Access through Docket mobile phone app
- ❖ Request record from healthcare provider
- ❖ Request record from school/LHD
- ❖ Submit notarized form to UDOH

<https://immunize.utah.gov/usiis/usiis-parents-individuals/>

Patient Zipcodes in USIIS



Docket



- ❖ Started at AIRA 2019
- ❖ Project kick-off October 2019
- ❖ Pilot started May 2020
 - ❖ Salt Lake County School District
 - ❖ Sent flyer to parents of 6th graders
- ❖ Over 17,000 immunization records accessed through Docket

- ❖ Minimal changes to our system
 - ❖ Added multiple phone/email to QBP
 - ❖ Added report PIN for validation

Docket



2:49
0.00 KB/s
4G LTE
38%

Immunization Records

Updated: 07/27/2021

DUE NOW

FLU
Due after 07/01/2021
6 SHOTS

CURRENT

MENINGOCOCCAL
1 SHOT

CURRENT

Td
NO SHOTS

COMPLETE

CHICKENPOX
2 SHOTS

COMPLETE

COVID-19
2 SHOTS

CHICKENPOX

Administered: 03/28/2013

Provider: INTERMOUNTAIN BRYNER

Manufacturer: Merck and Co., Inc.

LOT: H015784

CHICKENPOX

Administered: 04/21/2009

Provider: INTERMOUNTAIN BRYNER

Manufacturer: Merck and Co., Inc.

LOT: 0193Y

Immunization Reports

Utah School Report

UTAH SCHOOL IMMUNIZATION RECORD

This record is part of the student's permanent school record. Information is defined in Section 53C-6-301 of the Utah Statutes (Code and public) transfer with that student record upon request of the student's legally responsible individual. Save back for reference and how to fill out this form.

Student Information
Student Name: **LUCY REID** Gender: ☐ Male ☒ Female Date of Birth: **04/21/2009**

Name of Parent/Guardian: **EMILY REID** PIN: **5787-4804** Student ID Number: **15236063**

VACCINE	Lot	Exp	Exp	Exp	Exp	Status	Due Date	Exemption
DTaP, DTaP-IP, Td, Td-IP	08/10/2008	08/10/2008	03/21/2009	04/21/2009	03/28/2013	Complete	08/15/2029	
Polio (OPV or IPV)	08/15/2013	08/15/2008	03/21/2009	04/21/2009	03/28/2013	Complete		
Polio (OPV or IPV)	08/10/2008	08/10/2008	03/21/2009	04/21/2009	03/28/2013	Complete		
Measles, Mumps, and Rubella (MMR)	08/10/2008	08/10/2008	03/21/2009	04/21/2009	04/21/2011	Complete		
Measles, Mumps, and Rubella (MMR)	04/21/2009	03/28/2013	03/28/2013	04/21/2009	04/21/2011	Complete		
Hepatitis B (HBV)	04/21/2009	03/28/2013	03/28/2013	04/21/2009	04/21/2011	Complete		
Vaccine (Chickens)	04/21/2009	03/28/2013	03/28/2013	04/21/2009	04/21/2011	Complete		
Hepatitis A (HAV)	04/21/2009	03/28/2013	03/28/2013	04/21/2009	04/21/2011	Complete		
Measles, Mumps, and Rubella (MMR)	08/15/2013	03/28/2013	03/28/2013	04/21/2009	04/21/2011	Complete		

Immunization record received for this student is from:
☐ A physician's report
☐ Student's former school
☐ Legally responsible individual of the student

Authorized Signature: _____ Date: _____

Utah Department of Health
Division of Immunization & Prevention
Immunization Program
800-551-2222
www.dhs.gov

Rev. 06/2011

Update PDF

Utah Forecast Report

Download PDF

Docket VCI

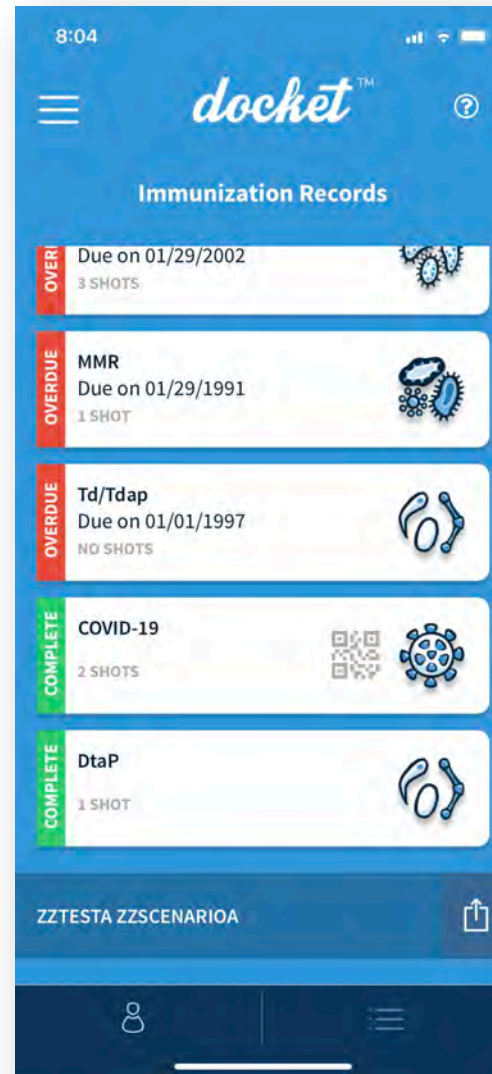


Vaccine Credential QR Code Overview

- Docket® supports the VCI QR code data standard
- Proof of permission is required for Google
- POC has been completed

User Experience Description

- Docket® displays QR code for completed series
- User taps on QR code icon to export code
- Accepted by other VCI verifiers



Mock-up



Proof of Concept

Challenges with Credentialling



- ❖ Availability of vaccine data
 - ❖ Volunteer reporting system
 - ❖ Records may not exist
 - ❖ May receive vaccine in another state
 - ❖ No access to federal vaccines (DOD, IHS, VA)
- ❖ No standard on how to retrieve data
- ❖ Multiple vendors
 - ❖ Not all connected to same sources

Challenges with Credentialling



- ❖ Demographic data
 - ❖ Data prone to data entry errors
 - ❖ Huge duplicate issue with COVID data
- ❖ Data quality
 - ❖ COVID data has more data quality errors than other data
 - ❖ Separate systems
 - ❖ Not primary care provider
 - ❖ Manually entry
 - ❖ Batch upload of CSV data



❖ COVID hesitancy (Utah HB 308)

Except as provided in Subsection (4), a governmental entity may not require, directly or **indirectly**, that an individual receive an emergency COVID-19 vaccine.

(3) The prohibited activities under Subsection (2) include:

- (a) making rules that require, directly or indirectly, that an individual receive an emergency COVID-19 vaccine;
- (b) requiring that an individual receive an emergency COVID-19 vaccine as a condition of:
 - (i) employment;
 - (ii) participation in an activity of the governmental entity, including outside extracurricular activities; or
 - (iii) attendance at events that are hosted or sponsored by the governmental entity; and
- (c) any action that a reasonable person would not be able to deny without significant harm to the individual.

State-State Sharing



- ❖ Combine vaccines administered from multiple states
- ❖ IZGateway
 - ❖ Utilize bi-directional APHL hub
 - ❖ Allow sending out of state immunization records to state of residence
 - ❖ Allow query of other state IIS for immunization records
 - ❖ Need to verify necessary information when recorded as historical immunization for VCI

Conclusion



- ❖ Several methods for vaccine credentialing
 - ❖ Waiting for national standard to emerge
- ❖ IIS must become source of data
 - ❖ Additional legislation
 - ❖ Expand sharing of data
 - ❖ Link to federal sources
- ❖ Improvement in data quality and completeness need to occur
- ❖ Additional ongoing funding needs to be secured

Thank you



Jon Reid
USIIS Program Manager
jreid@utah.gov
immunize.utah.gov/usiis



Quan Le

Louisiana

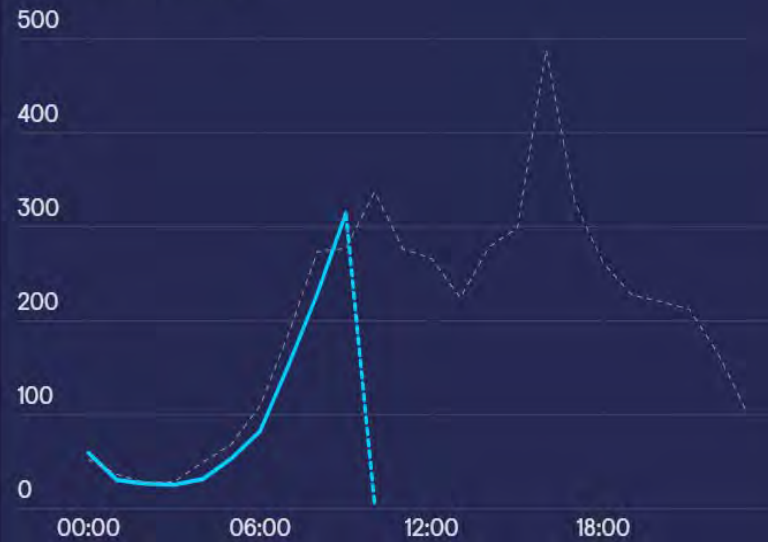
LA Wallet and COVID-19 Vaccination-Background

- LA based company, ENVOC
- Digital DL app with over 770K LA residents activated
- LA Wallet is a free application
- Concerns regarding Fraud and Loss of COVID-19 “vaccine card”

LA Wallet and COVID-19 Vaccination-Challenges/Opportunities

- Matching issues/up-to-date demographics
- No data found/New patient data added to IIS
- Consumer requests/Helpdesk support coordination

New Users Today



COVID-19 Vaccination Card

167.9k
Vax Matches

94.16%
Match Rate

22.1k
Found, no Vax

9,811
Not Found



Real-time Website Visitors

envoc.com



lawallet.com



LA Wallet App

770.9k
Citizens Activated

881
Activations Today

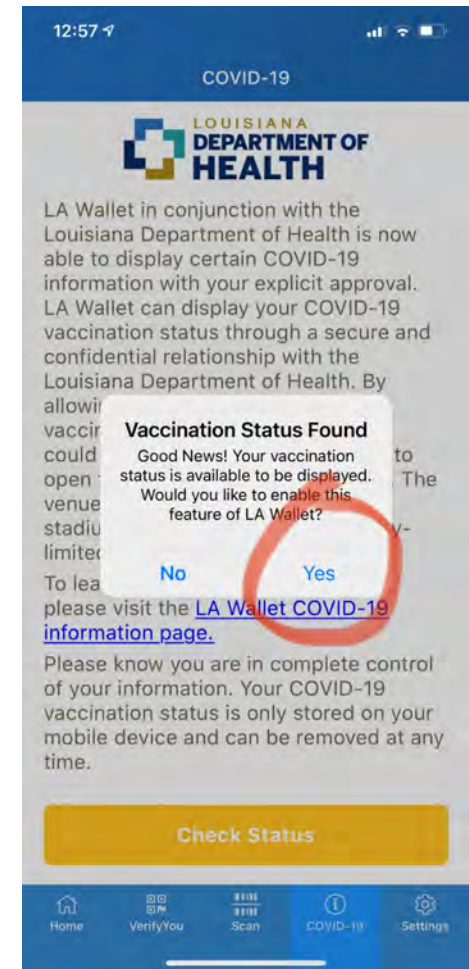
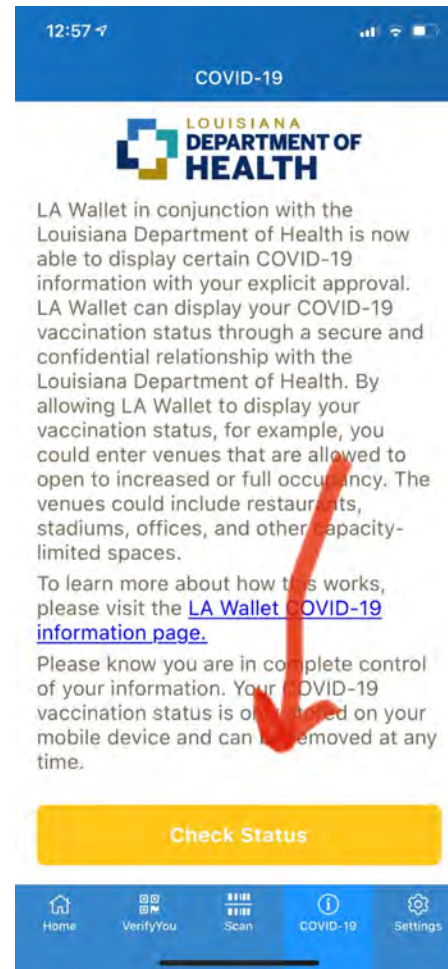
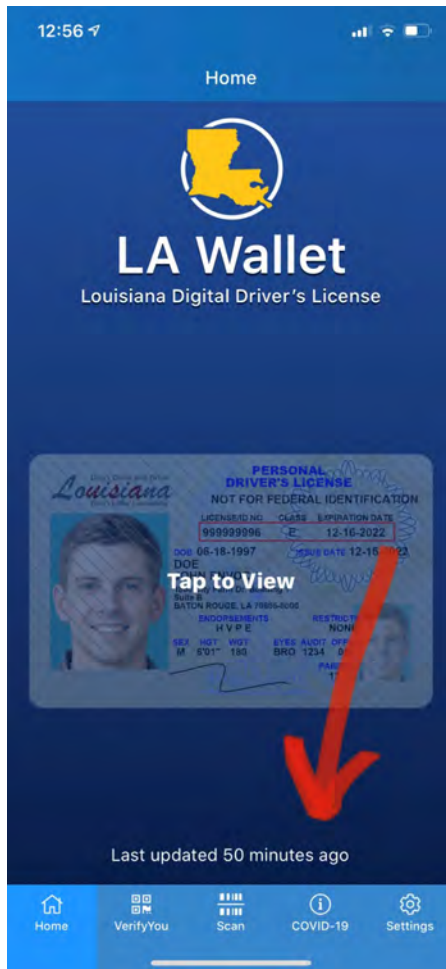


Visitor Map

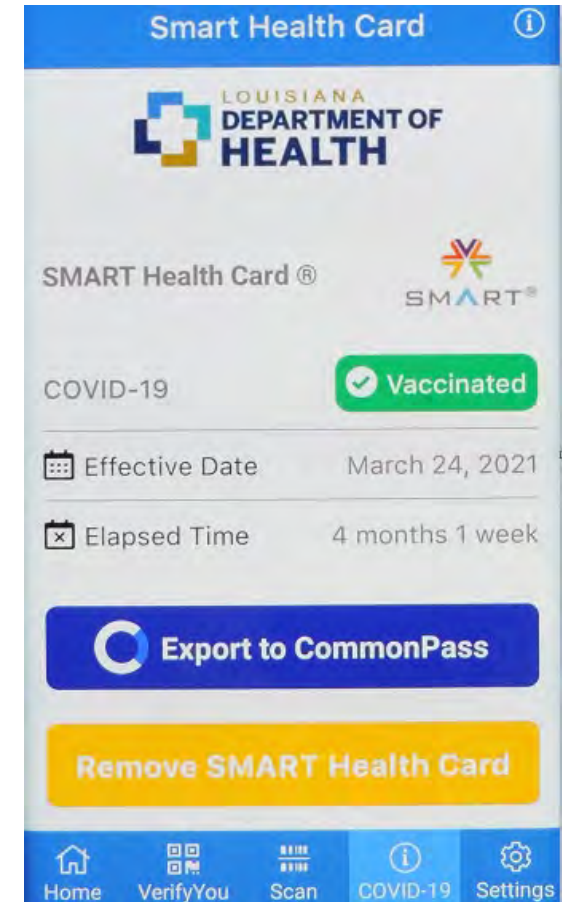


Website Sessions





Success!



North Dakota **MyIR Mobile Implementation**

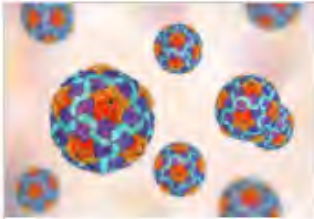
Mary Woinarowicz, MA
AIRA 2021

ACCESS TO IMMUNIZATION RECORDS

- Before MyIR
 - Providers and schools could print an official certification of immunization from the NDIIS user interface
 - Some facilities did not have staffing resources to respond to all requests
 - Some facilities charge for a copy of the record
 - Request an official copy of the record from the ND Department of Health
 - Mail or email record request form along with supporting documentation
 - Mail or email record back to the requestor

Immunizations

The North Dakota Department of Health Division of Immunizations supplies free vaccines for children who are eligible for the Vaccines for Children (VFC) program, coordinates investigations of vaccine preventable diseases (VPDs), provides education about immunizations and VPDs, monitors the state's immunization coverage rates and maintains and updates the North Dakota Immunization Information System (NDIIS).



Vaccine Preventable Diseases

Information and frequently asked questions about vaccine preventable diseases



Immunization Providers

Education, forms and immunization information for providers.



Schools and Childcare Facilities

Immunization information and requirements for North Dakota schools and childcare facilities.



Immunization Resources for the Public

Reliable information and resources on immunizations for the general public.



NDIIS

North Dakota Immunization Information System (NDIIS)



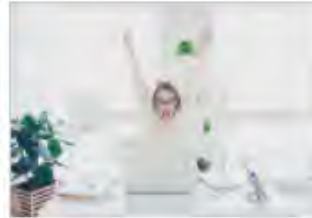
Immunization Records

Request an official certificate of immunization from the NDIIS.



Coverage Rates

State-wide and county-level immunization coverage rates based on data from the NDIIS.



Immunization Honor Roll

Quarterly honor roll recognizing the immunization providers who have met or exceeded the Health People 2020 goals for immunization.



SUBMIT AN IMMUNIZATION RECORD REQUEST

• Immunization Record Request Form

MYIR TIMELINE

April 2020

Contacted
STC about
connecting to
MyIR

July 2020

began testing HL7
QBP/RSP interface
between NDIIIS
and MyIR
application

October 2020

MyIR mobile
fully enabled for
North Dakota

June 2020

fully executed
agreements
with STC

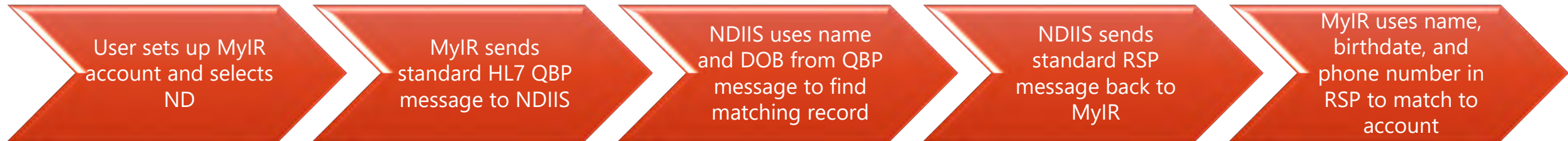
September 2020

MyIR mobile
application
connected to NDIIIS
production
environment

WHAT DOES MYIR DO FOR ND

- Allows members of the general public to access their NDIIS immunization record without needing to go through the formal request process
- Allows parents to access records for their minor children
- Uses a simple HL7 query/response connection to the NDIIS to provide direct patient access to immunization records
- Reduces the number of record requests to the NDDoH

HOW DOES MYIR WORK IN ND



ACCESS TO IMMUNIZATION RECORDS

- After MyIR
 - Providers and schools can still print an official certification of immunization from the NDIIS user interface
 - Individuals can still request an official copy of the record from the ND Department of Health via mail or email
 - We can now offer a way for individuals to directly access their own consolidated immunization record from the NDIIS
 - Can also access records for their dependent children under 18 years of age

CHALLENGES

- Trying to implement MyIR in the middle of the NDDoH pandemic response led to delays in getting agreements reviewed and fully executed.
- During testing, STC identified an issue with NDIIS RSP messages.
 - Phone number was not being returned consistently
 - NDIIS development team needed to fix RSP issue
- Fully production deployment delayed slightly due to competing pandemic priorities on both NDDoH and STC sides
- If name or phone number in MyIR does not match NDIIS exactly, no record can be returned to the user.
- MyIR users can only access record for single jurisdiction IIS.

SUCCESES

- Mobile, direct access to consolidated immunization record for North Dakotans
- Immunization program staff are able to easily update names and phone numbers in the NDIIS and allow MyIR users to find their record.
- Steady increase in the number of MyIR users accessing records for themselves and their dependents
 - 94 users leveraging MyIR in December 2020
 - 394 users leveraging MyIR in June 2020

MyIR Mobile

of Users

2,035

of Matched Users

1,667

Match Rate

81.92%

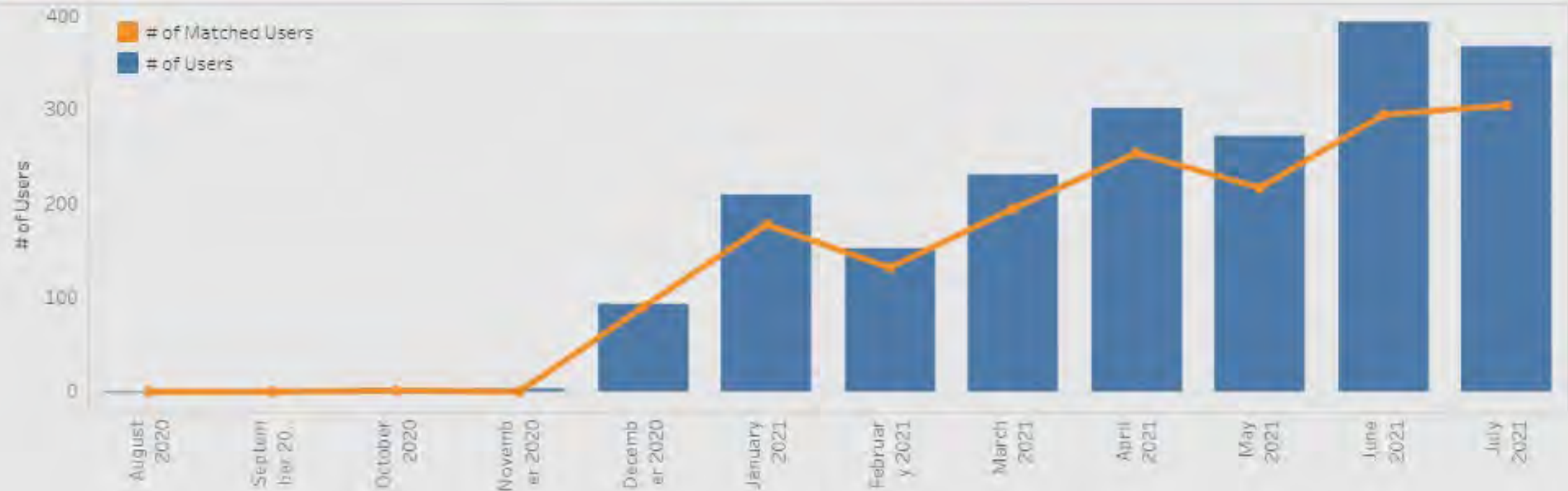
of Record Checks

1,998

Avg. # of Dependents Per Account

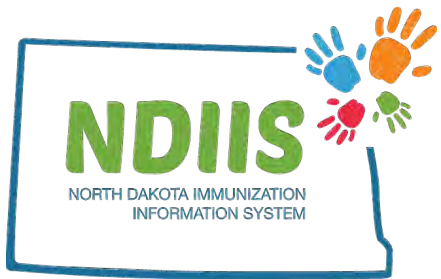
1.980

Accounts vs. # Matched Accounts Over Time



FUTURE OF MYIR IN NORTH DAKOTA

- MyIR printout cannot be used in place of an official record for proof of vaccination for North Dakota schools
 - Will be working with STC to implement custom certificate in MyIR that will satisfy the official record requirement
- Work on more promotion of MyIR use in North Dakota
- Participating on MyIR user group work around QR codes and implementing a QR code in MyIR.



THANK YOU



Mary Woinarowicz: mary.woinarowicz@nd.gov

NDIIS website: <https://www.health.nd.gov/immunize/ndiis>

Record Requests: <https://www.health.nd.gov/immunize/immunization-record-request>