

Vaccine Credentials and Public Health in the US

NACCHO 360 Annual 2022 Virtual Meeting

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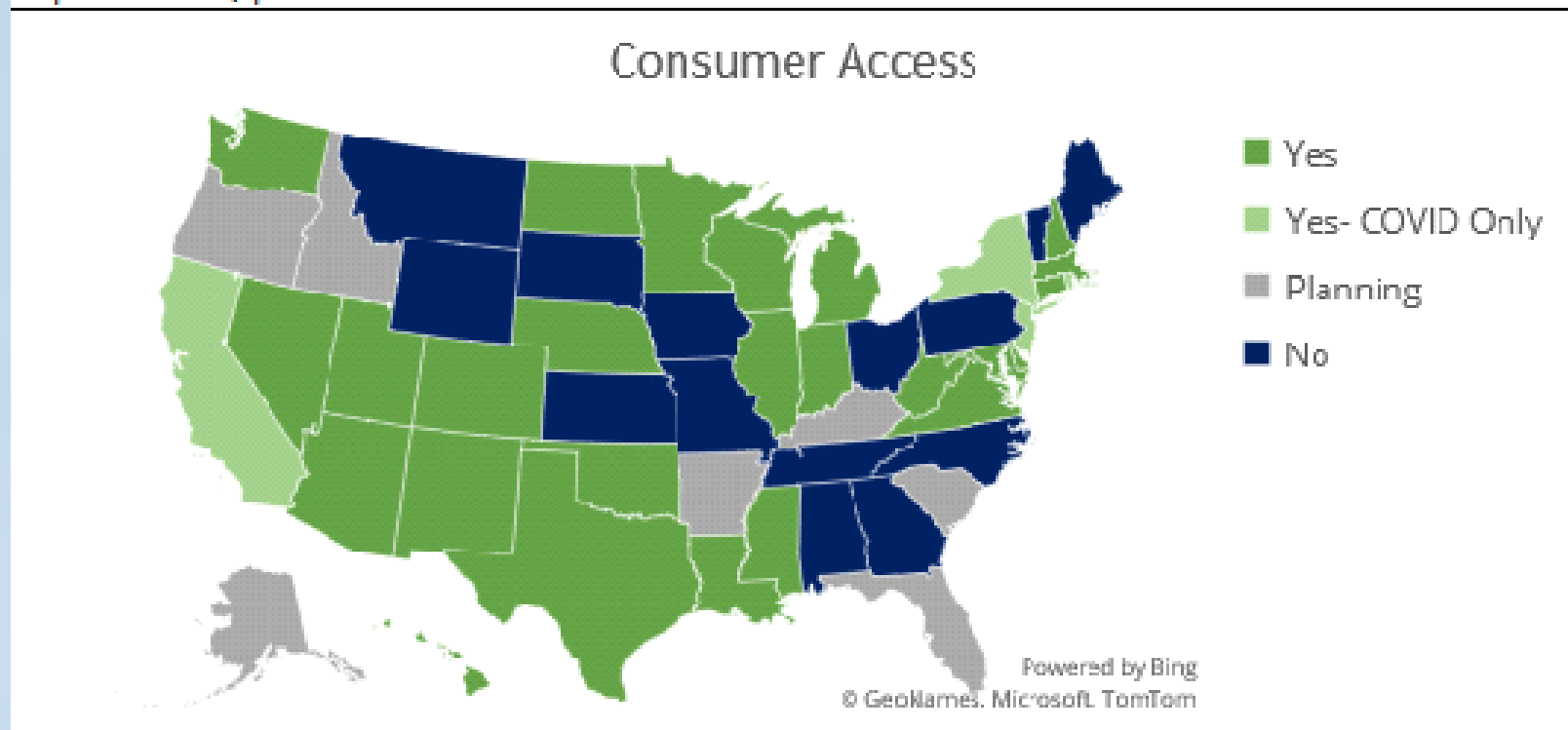
Background: The Need

- Falls into a broader topic of consumer access to vaccination data
- There are several valid scenarios where validated proof of up-to-date vaccination status for COVID-19 and other vaccine-preventable diseases would be useful
 - Travel
 - Work/school attendance
 - Large venue events
- These scenarios may or may not persist as time goes on, but the likelihood of the need for COVID-19 annual boosters only increases the potential need for ongoing record keeping and proof of vaccination for some time into the future.
- Global shift to digital vaccine credentials at least for COVID, maybe other vaccines (and tests) in the future
- New executive orders introduce “B2B” requirements
- Endless onslaught of press and editorials
- *Significant* consumer protection issues in play around data and location tracking

Immunization Information Systems (IIS)

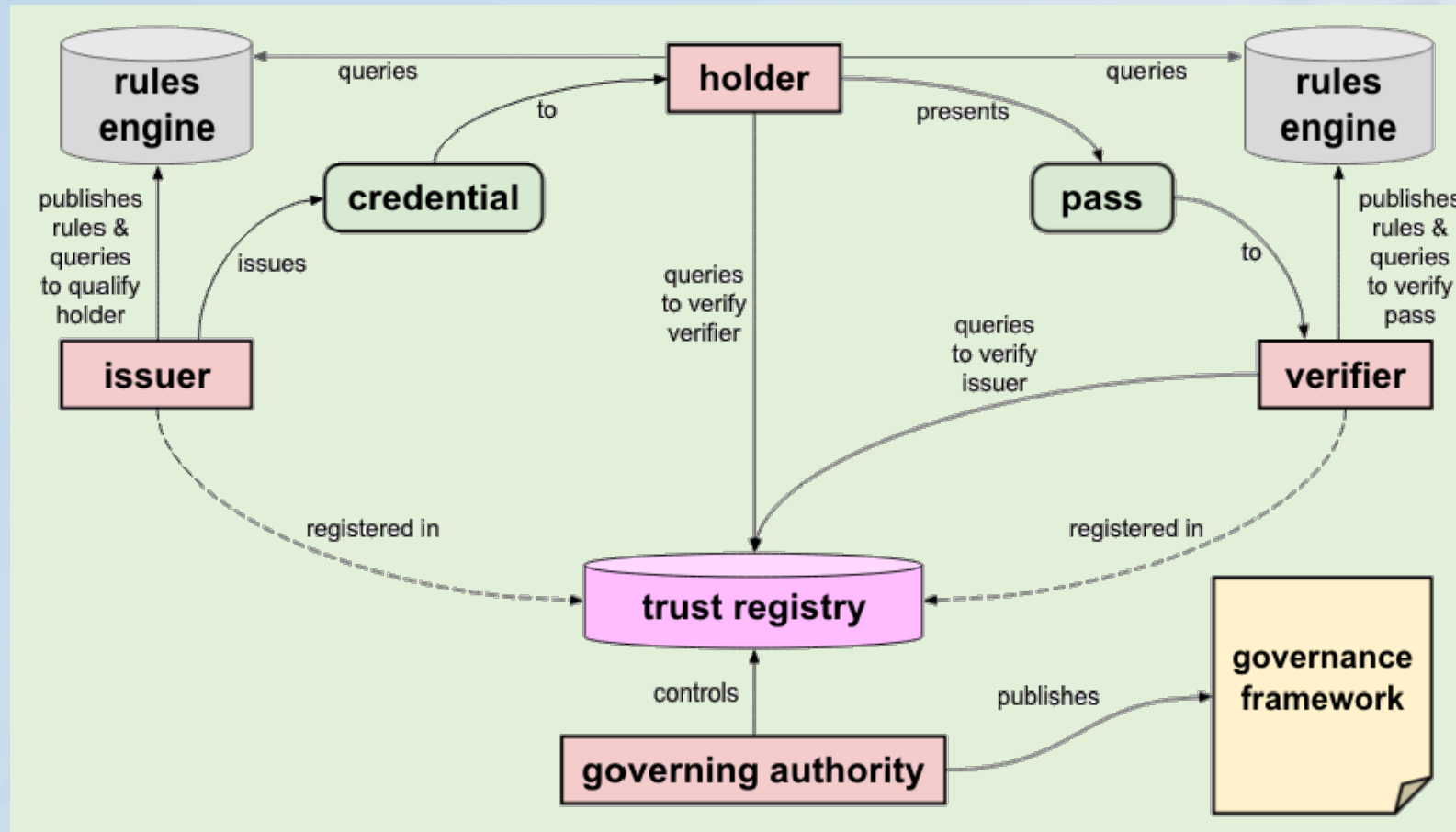
- Single most comprehensive sources of vaccination information in the US.
- US has multiple IIS - Some people may have vaccination records in more than one IIS based on where they live (or have lived) or work (or have worked).
- All IIS provide access to vaccination information to authorized users which usually contain both vaccination history and a forecast of vaccines due now or in the future.
- Most IIS provide vaccination data digitally to clinical care systems, mostly through standard application programming interfaces (APIs).
- Some IIS have begun to support consumer access by allowing citizens in their jurisdictions to access vaccination records directly via web portal or smartphone apps.
- Because of competing demands, many IIS were slow to prioritize the delivery of standards-based vaccine credentials during the pandemic.

IIS offering Consumer Access to Immunization Records (Spring 2022)



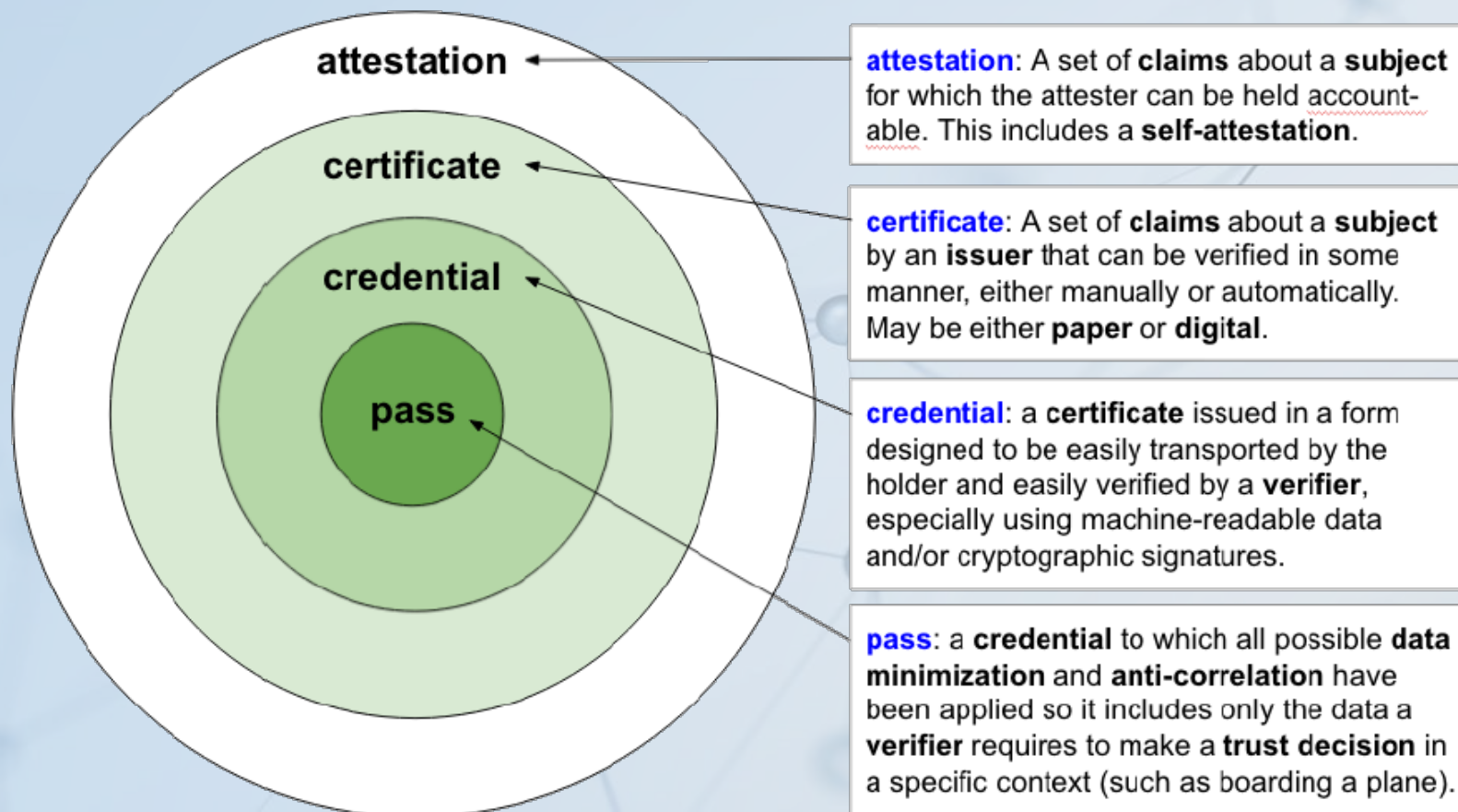
Map c/o AIRA

The Good Health Pass Ecosystem



Courtesy of [Good Health Pass Collaborative](#)

Core Terminology



Courtesy of [Good Health Pass Collaborative](#)

Multiple Initiatives

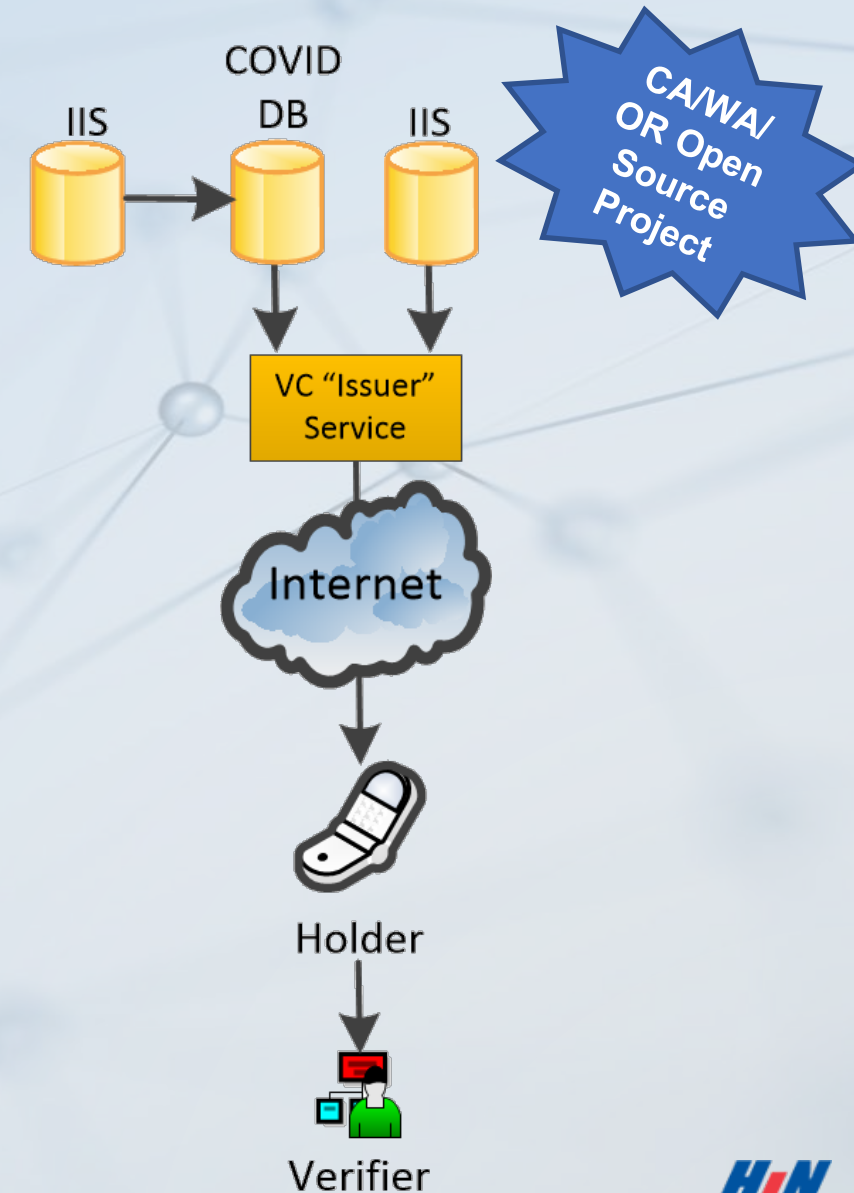
- **Verifiable Clinical Information, *nee* Vaccine Credential Initiative** ([VCI](#)): Focus on development of standards and reference implementation of SMART Health Cards for vaccination and COVID testing
- **COVID Credentials Initiative** ([CCI](#)): Initially affiliated with Linux Foundation Public Health ([LFPH](#)); strives to develop open source solutions for vaccine credentialing
- **WHO Smart Vaccination Certificate Working Group** ([WHO](#)): Software neutral group that is going to focus on common specifications for this functionality (see WHO [Guidance Document](#) and [European Union strategy](#))
- **Good Health Pass Collaborative** ([GHP](#)): Focus on re-enabling international travel, but scope seems to be broader (see [Blueprint document](#))
- **[PathCheck](#) Paper Credential**: Focus on representing digital credential on paper media

Technical Standards & Implementation

- The technical standards for vaccine credentials seem to be coalescing around HL7 Fast Healthcare Interoperability Resources (FHIR) and SMART Health Cards
- The US does not have the trust framework in place to manage the Public Key Infrastructure (PKI) necessary for digitally-verifiable credentials at a national level.
- There is a distinct underappreciation for issues related to determining if vaccinations are *valid* versus whether they simply were *administered*.
- There are many, many applications for both consumer credential “holder” wallets, generation of a health pass based on some set of “rules,” and for verifiers who want to view verifiable credentials.
- Some state and local governments have prohibited requiring proof of vaccination.

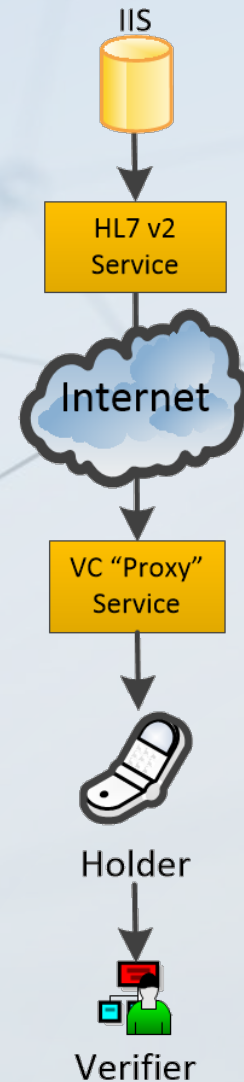
Simplest Strategy

- IIS provide access to standards-based vaccine credentials through a FHIR-based API and SMART Health Cards.
- IIS function as a vaccine credential issuer and provide digitally-verifiable source of vaccine information to consumer apps.
 - *Variation: Data sent from IIS to a "COVID DB"*
- For people who may have vaccination records in more than one IIS, record consolidation achieved either via IIS-to-IIS communication or via app access to multiple IIS.
- IIS continue to provide traditional, complete vaccination records which contain both vaccine history and vaccine forecast for a patient.



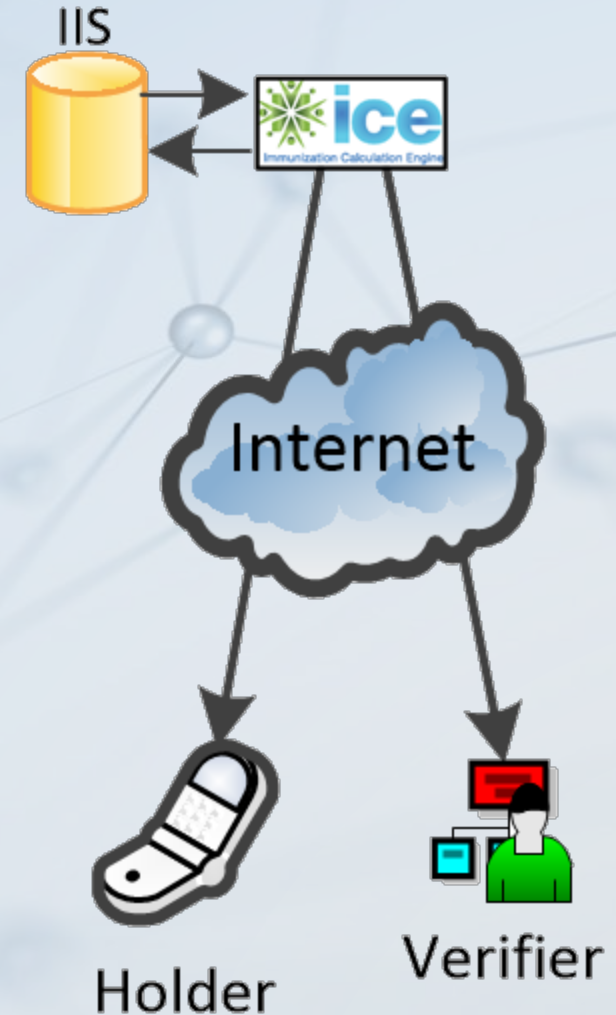
Fallback Strategy

- IIS partner with a single vaccine app provider to function as a “proxy” issuer of vaccine credentials for COVID-19 on its behalf. This app queries IIS via current HL7 v2 standards and in turn provide standards-based vaccine credentials through a FHIR-based API.
- The app serves as the authorized, digitally-verifiable source of vaccination information in that jurisdiction.
- IIS authorize the proxy issuer to provide vaccine credentials to other authorized consumer apps that meet jurisdiction-defined policies for identifying patient records in the IIS.
- IIS could still provide their own consumer app.

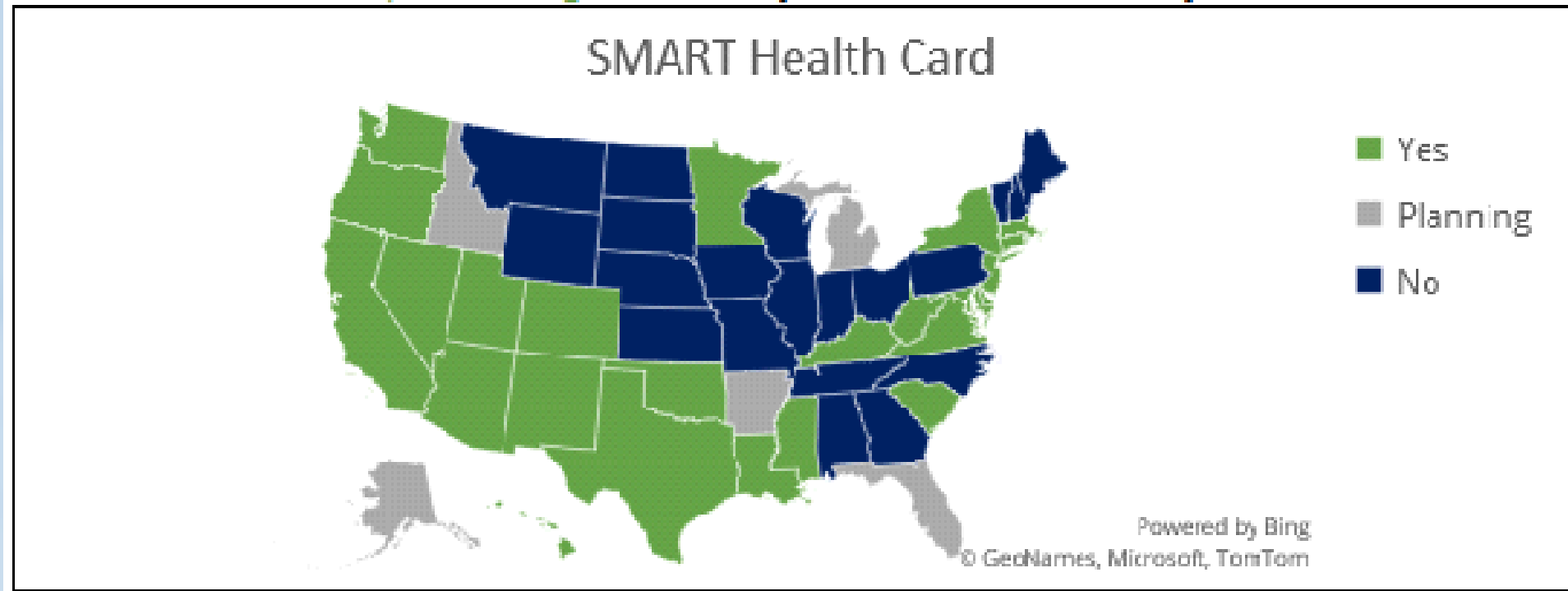


Supplemental Strategy

- IIS could offer a new service by offering their immunization evaluation and forecasting rules systems to consumer apps via API to ensure that health passes are based on valid vaccinations and not just a count of doses administered.
- One example of such a service is the open source [Immunization Calculation Engine](#) (ICE).

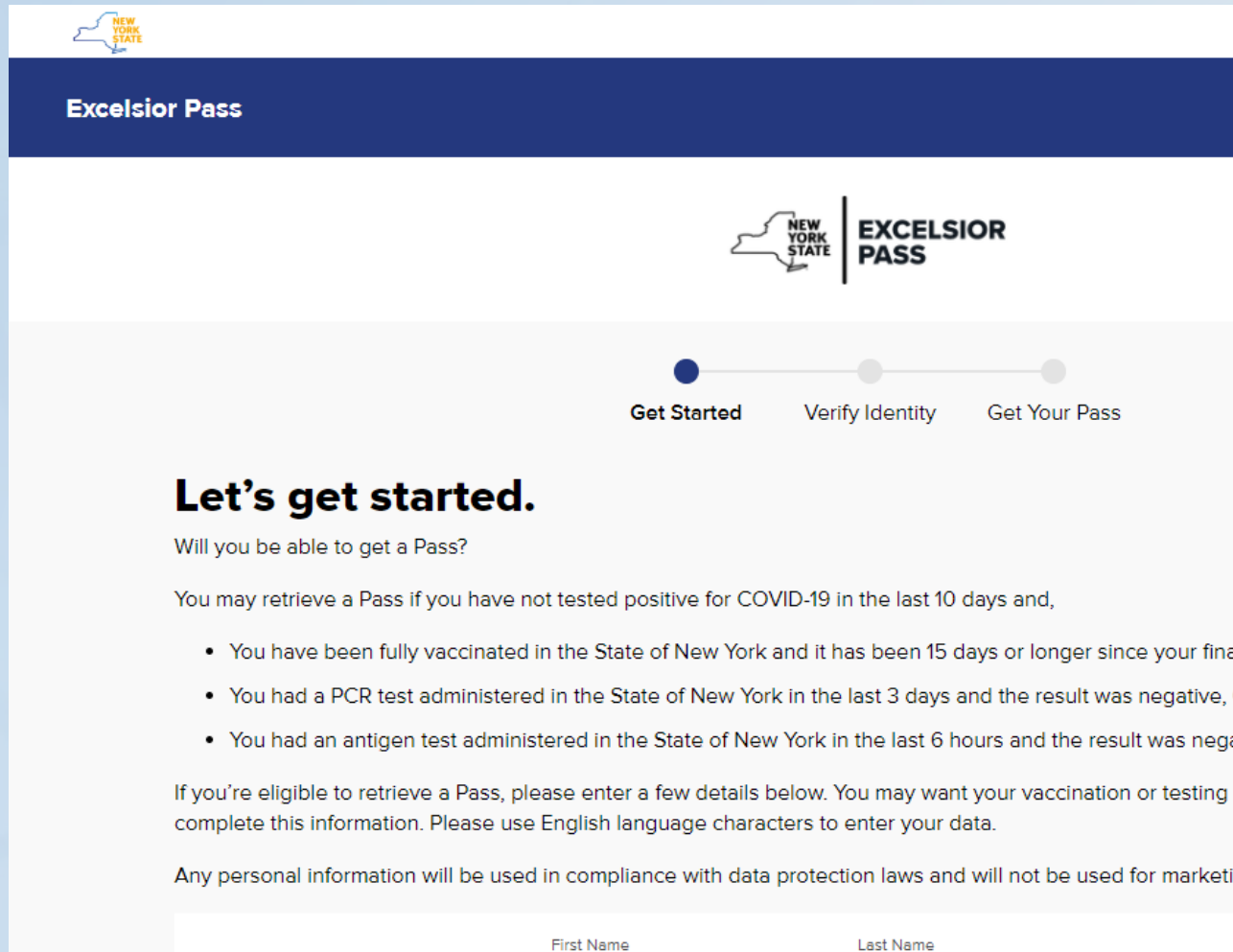


SMART Health Card Adoption by IIS



Map c/o AIRA

Example 1: NYS Excelsior



The mockup shows the NYS Excelsior Pass website. At the top is the NYS logo and the title "Excelsior Pass". Below this is a progress bar with three steps: "Get Started" (active), "Verify Identity", and "Get Your Pass". The main heading is "Let's get started." followed by the question "Will you be able to get a Pass?". Below this, it states "You may retrieve a Pass if you have not tested positive for COVID-19 in the last 10 days and," followed by a bulleted list of eligibility criteria. The criteria are: "You have been fully vaccinated in the State of New York and it has been 15 days or longer since your final dose", "You had a PCR test administered in the State of New York in the last 3 days and the result was negative, and", and "You had an antigen test administered in the State of New York in the last 6 hours and the result was negative". Below the list, it says "If you're eligible to retrieve a Pass, please enter a few details below. You may want your vaccination or testing information to be complete this information. Please use English language characters to enter your data." At the bottom, there is a disclaimer: "Any personal information will be used in compliance with data protection laws and will not be used for marketing purposes." Below the disclaimer are input fields for "First Name" and "Last Name".

Excelsior Pass

Let's get started.

Will you be able to get a Pass?

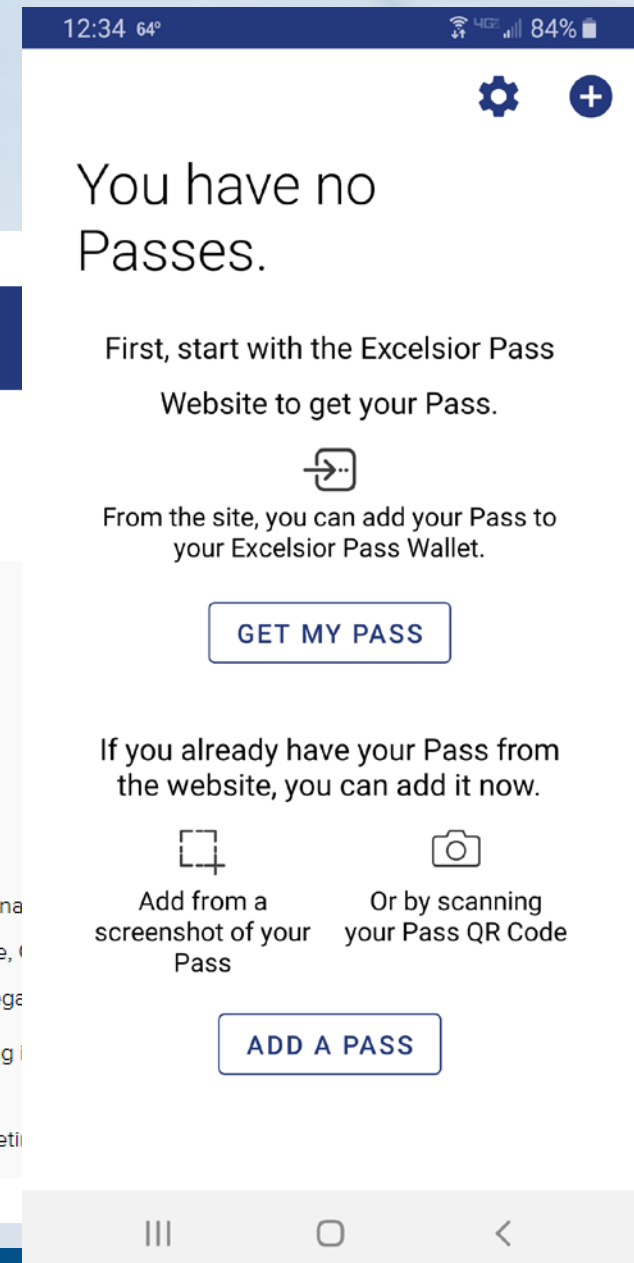
You may retrieve a Pass if you have not tested positive for COVID-19 in the last 10 days and,

- You have been fully vaccinated in the State of New York and it has been 15 days or longer since your final dose
- You had a PCR test administered in the State of New York in the last 3 days and the result was negative, and
- You had an antigen test administered in the State of New York in the last 6 hours and the result was negative

If you're eligible to retrieve a Pass, please enter a few details below. You may want your vaccination or testing information to be complete this information. Please use English language characters to enter your data.

Any personal information will be used in compliance with data protection laws and will not be used for marketing purposes.

First Name Last Name



The mockup shows the NYS Excelsior Pass app interface. At the top is a status bar with the time "12:34", temperature "64°", and battery level "84%". Below this is a header with a gear icon and a plus icon. The main heading is "You have no Passes." Below this, it says "First, start with the Excelsior Pass Website to get your Pass." followed by a link icon. Below the link icon, it says "From the site, you can add your Pass to your Excelsior Pass Wallet." Below this is a button labeled "GET MY PASS". Below the button, it says "If you already have your Pass from the website, you can add it now." Below this, there are two options: "Add from a screenshot of your Pass" (with a screenshot icon) and "Or by scanning your Pass QR Code" (with a camera icon). Below these options is a button labeled "ADD A PASS". At the bottom is a navigation bar with three icons: a list icon, a home icon, and a back icon.

12:34 64° 84%

You have no Passes.

First, start with the Excelsior Pass Website to get your Pass.

From the site, you can add your Pass to your Excelsior Pass Wallet.

GET MY PASS

If you already have your Pass from the website, you can add it now.

Add from a screenshot of your Pass Or by scanning your Pass QR Code

ADD A PASS

Example 2: CA Digital COVID-19 Vaccine Record

Record, [visit our](#)

Digital COVID-19 Vaccine Record - QR code available - Mozilla Thunderbird


File Edit View Go Message Tools Help

Get Messages Write Chat Address Book Tag

From CA Department of Public Health <no-reply@cdph.ca.gov> ☆

Subject Digital COVID-19 Vaccine Record - QR code available

To Me <arzt@hln.com> ★



Digital COVID-19 Vaccine Record

Digital COVID-19 Vaccine Record

Thank you for visiting the State of California's Digital COVID-19 Vaccine Record portal valid for 24 hours. Once accessed and saved to your device, the QR code will not expire.

[View digital vaccine record](#)

Learn more about how to [protect yourself and others](#) from the Centers for Disease Control and Prevention.


Have questions?


[Visit our FAQ page](#) to learn more about your Digital COVID-19 Vaccine Record.

Stay Informed.

[View the latest information](#) on COVID-19 in California.

Official California State Department Email





Vaccination Information:

Name: Noam Arzt



DOB:

Dose #1 Date: 03/30/2021

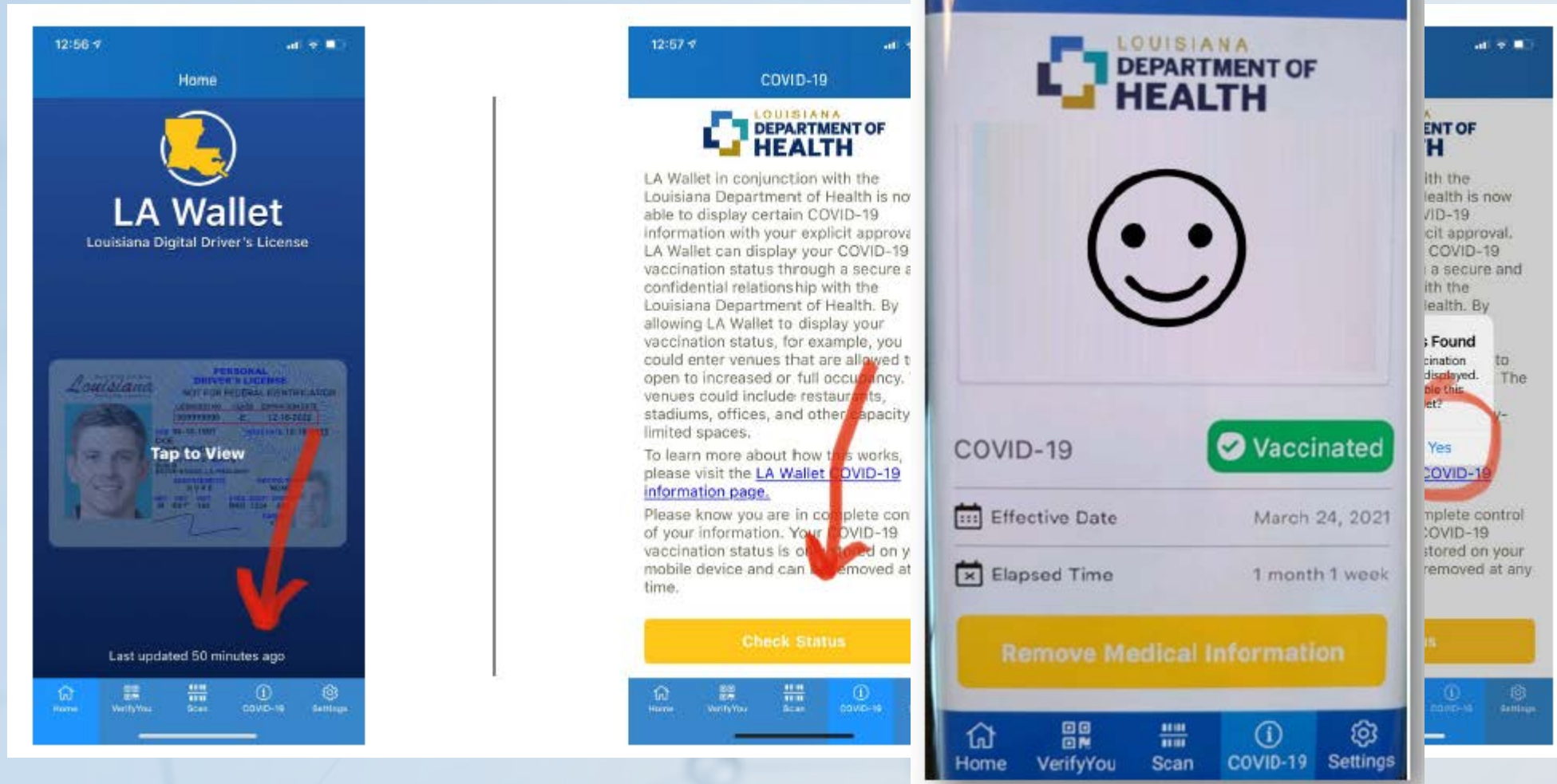
Dose #1 Type/Mfr: Pfizer

Dose #2 Date: 04/21/2021

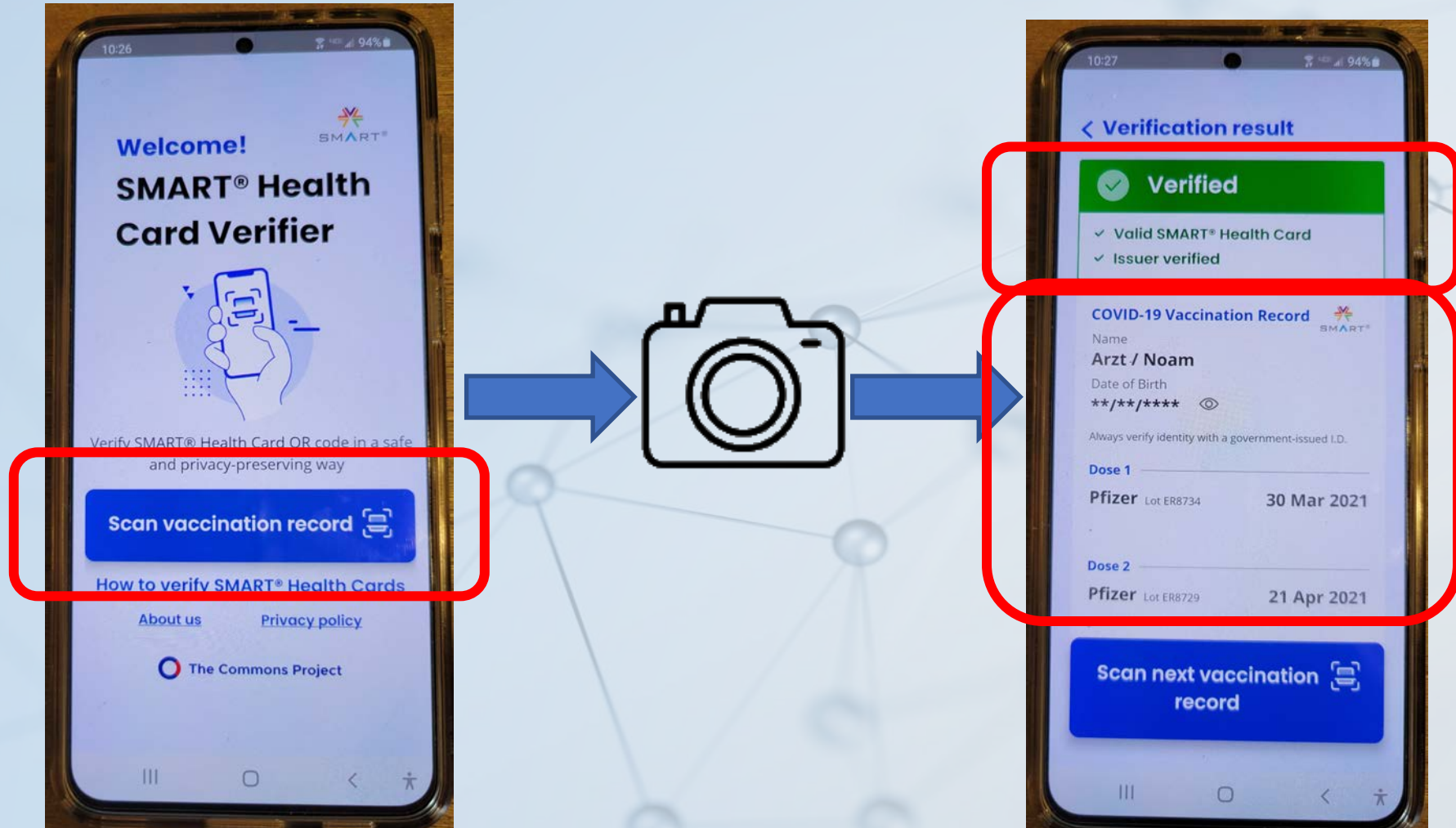
Dose #2 Type/Mfr: Pfizer



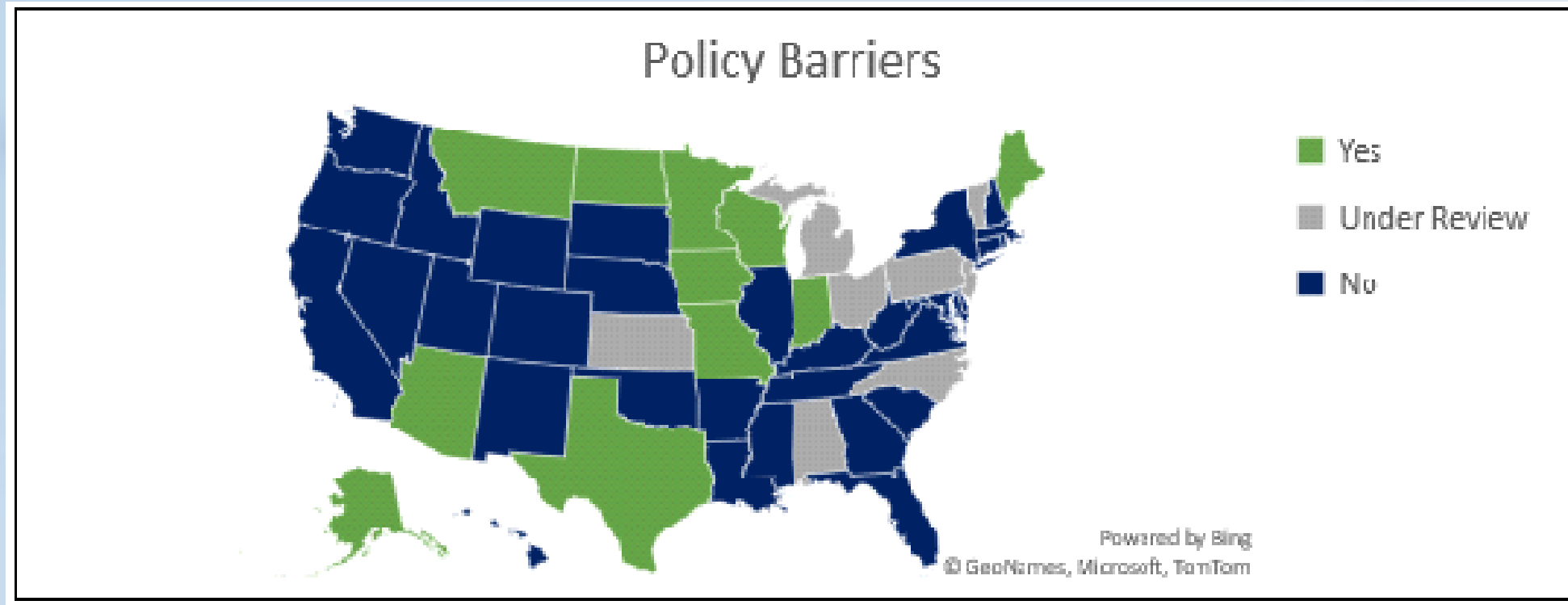
Example 3: LA Wallet



Example 4: Commons Project Verifier App



Policy Barriers to SMART Health Card Adoption by IIS



Map c/o AIRA

De Facto National Strategy

- Credentials have coalesced around SMART Health Cards
- Some IIS have partnered up with specific vendors for query or “proxy” provision of vaccine credentials
- Vendors are very interested in querying “all IIS” but many IIS are not prepared to do so or remain exclusive - many IIS do not feel compelled to allow “competing” vendors to also connect and query
- IIS do not generally allow queries for employee verification
- CDC-sponsored IIS to IIS interoperability will complete jurisdictional records, but still not help people who live in one but work/go to school in another
- New class of “verifier” applications developing to help support vaccine mandates
- Providers (like pharmacies) also provide SMART Health Cards for *their* vaccinations
- Burden falling to the consumer/employee/student to “collect” their digital credentials and present them when necessary (including to other apps)

Key Challenges

- Loss of motivation/urgency as pandemic requirements wane
- *Complete* vaccination history may push limits of SMART Health Card standard ([SMART Health Links](#) may be a solution)
- Vaccine codes used in US (CDC CVX) are not used internationally, limiting usefulness of US-issued vaccine credential
- European Union (EU)/WHO direction may not be completely compatible with US effort
- Decentralized administration in the US may cause some international entities to question authenticity ("why is the credential from Arkansas and not the US government?")
- Governance of vaccine credentials is weak: Who authorizes participation?
- Additional complexity introduced by the need to proxy credentials for others to manage
- Consumers who are non-digital may still have challenges with full participation
- Vaccine credentials are not the same as health passes: Simple vaccine history is not the same as *clinically valid* vaccine history

Additional Reading

- [A Complicated Path Forward in the US \(Part 1\) – Potential Sources of Data](#) (A discussion of the basic philosophy of the vaccine credentialing movement, including where data for use in a digital vaccine credential might come from in the US, IIS will likely be a major source of this data.)
- [A Complicated Path Forward in the US \(Part 2\) – Major Initiatives Underway](#) (A review of the major vaccine credentialing initiatives that are currently underway worldwide, including VCI, CCI, the EU and WHO.)
- [A Complicated Path Forward in the US \(Part 3\) – Recommendations](#) (Initial recommendations for how public health agencies in the US – federal, state, and local – should approach vaccine credentialing. Additional federal leadership would certainly be useful.)
- [WHO Interim Guidance](#) (Comments on the Interim Guidance released by WHO for member countries in March 2021. Their recommendations are particularly *unsuited* for the US)

Additional Reading

- [It's All About the Rules!](#) (For vaccine credentialing to be effective the issue boils down to the rules that are going to be developed and adopted to make the SVC's usable. Many of these rules currently don't exist so we will start by analyzing some key factors.)
- [Vaccine Credential Activities: Redirecting the Conversation for Public Health Registries](#) (In this article we issue more specific advice for public health agencies about vaccine credentialing to reduce confusion about what vaccine credentialing is and how it functions.)
- [Vaccine Credentials Do Not Replace Full Vaccination Histories](#) (In this article we address the similarities and differences between vaccine credentials and traditional immunization histories and offer some opportunities for public health to maintain its role in data access.)
- [Towards a National COVID-19 Vaccine Credential Strategy in the US](#) (In this article we lay out a model for vaccine credentials in the US
- [Implementing Vaccine Credentials Across State Lines](#) (In this article we discuss the realities in the US about multi-state data access

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