First Steps on the Journey towards a Digital Health Wallet

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HIMSS 21

9–12 August | Digital

Welcome

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Learning Objectives

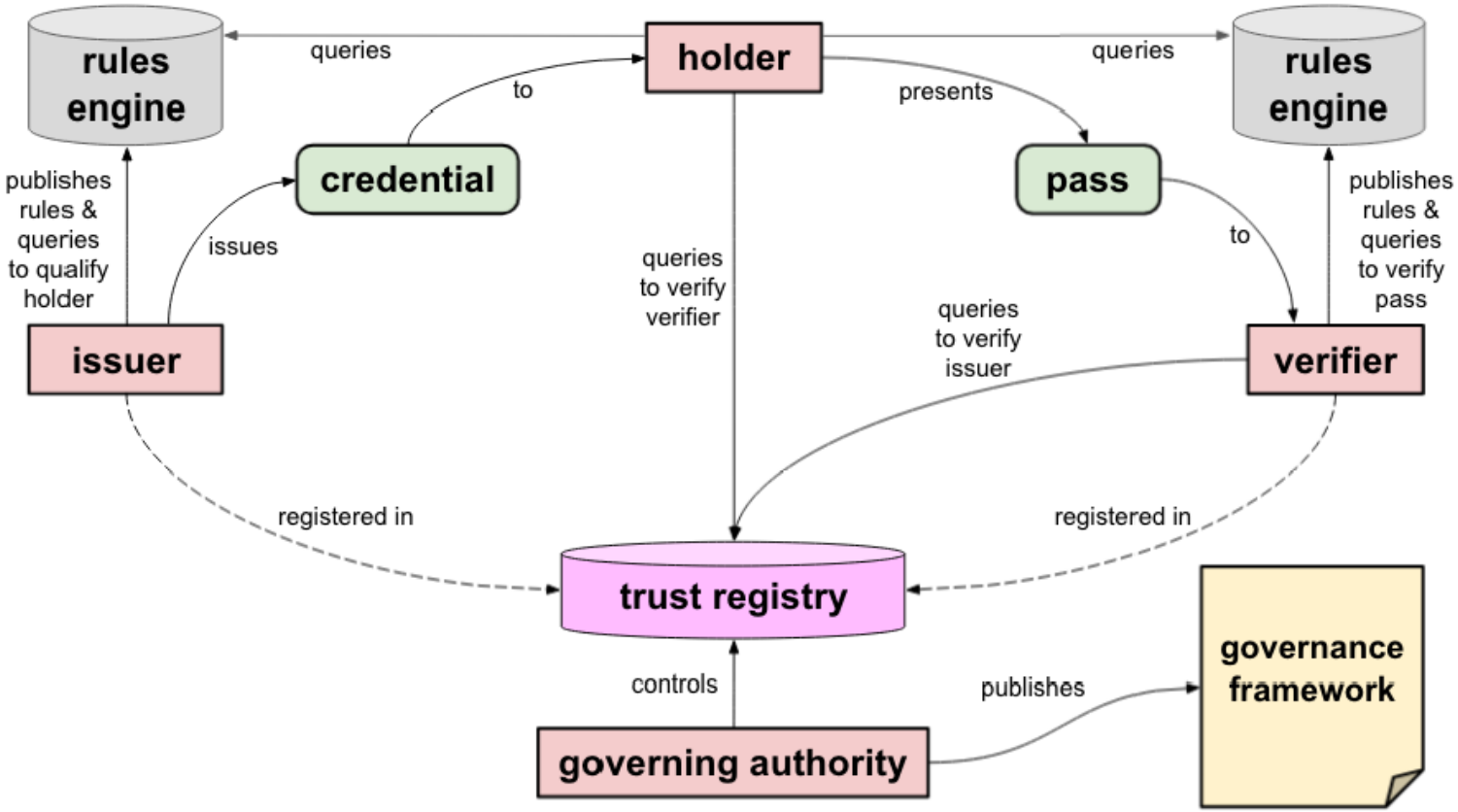
- Describe efforts to implement health credentials or 'passports', including specific attributes of various solutions such as: interoperability, international harmonization, usage of standards, privacy, identity, security, and types of health data provided. Specific consideration will be given to the emerging W3C standard for verifiable credentials. Participants will be able to describe the roles of issuers, holders, and verifiers of health credentials.
- Identify the different roles that public health authorities (PHA) can play in health wallets. Public health data infrastructure related to COVID-19 will be reviewed. PHA data sources need to be strengthened in multiple ways that will be reviewed. Non-PHA sources will be reviewed and participants will learn about the scope and limitations of such sources.
- Discuss a set of possible futures for digital health credentials will be described, enabling participants to discern where obstacles to interoperability and open standards might emerge and how to design solutions that protect both of these as well as consumer access and privacy. Considerations of future pandemic preparedness will be discussed.

Background

The Need

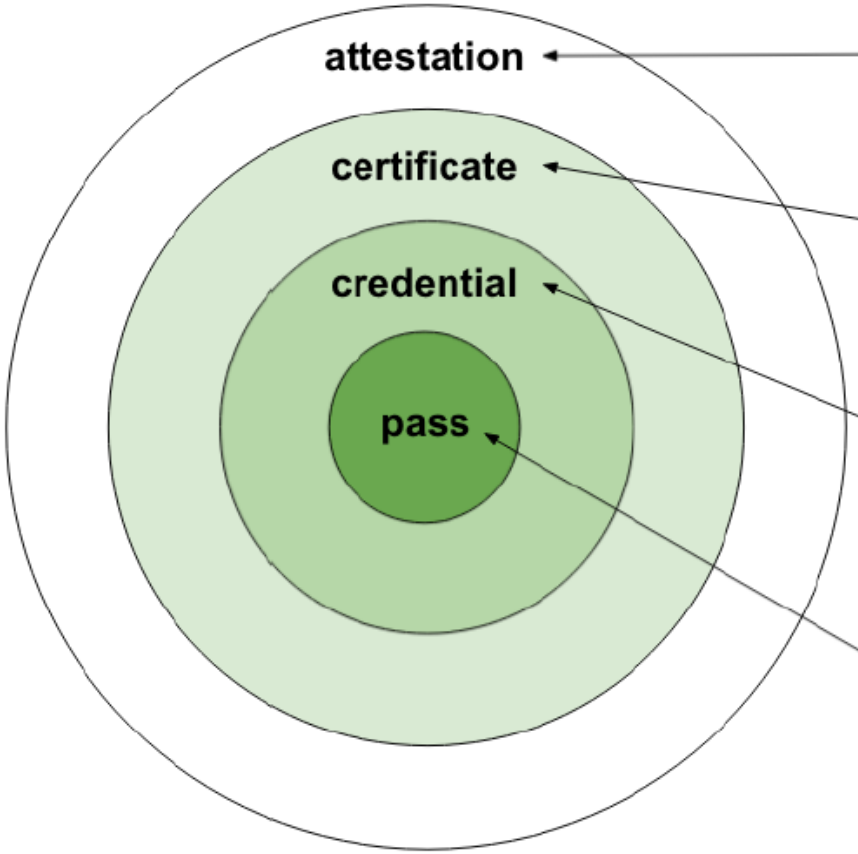
- There are several valid scenarios where validated proof of up-to-date vaccination status for COVID-19 and other vaccine-preventable diseases would be useful.
- These scenarios may or may not persist as time goes on, but the likelihood of the need for COVID-19 annual boosters only increases the potential need for ongoing record keeping and proof of vaccination for some time into the future.

The Good Health Pass Ecosystem



Courtesy of Good Health Pass Collaborative

Core Terminology



attestation: A set of **claims** about a **subject** for which the attester can be held account-able. This includes a **self-attestation**.

certificate: A set of **claims** about a **subject** by an **issuer** that can be verified in some manner, either manually or automatically. May be either **paper** or **digital**.

credential: a **certificate** issued in a form designed to be easily transported by the holder and easily verified by a **verifier**, especially using machine-readable data and/or cryptographic signatures.

pass: a **credential** to which all possible **data minimization** and **anti-correlation** have been applied so it includes only the data a **verifier** requires to make a **trust decision** in a specific context (such as boarding a plane).

Courtesy of Good Health Pass Collaborative

The Facts on the Ground

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, most IIS will be unable to prioritize the delivery of standards-based vaccine credentials over the next six to twelve months.

Technical Standards and 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 being developed 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.

Proposal for a US Strategy

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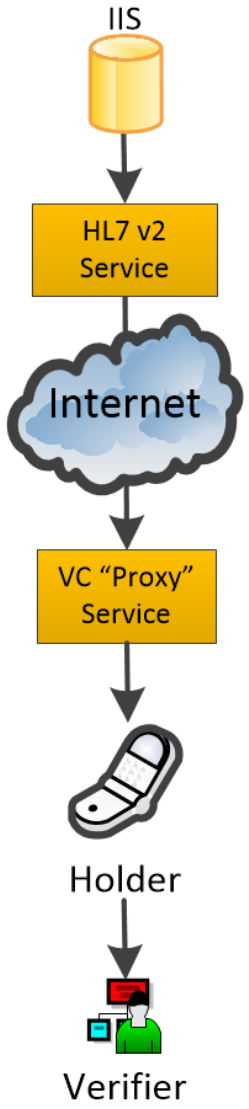
Simplest Strategy

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

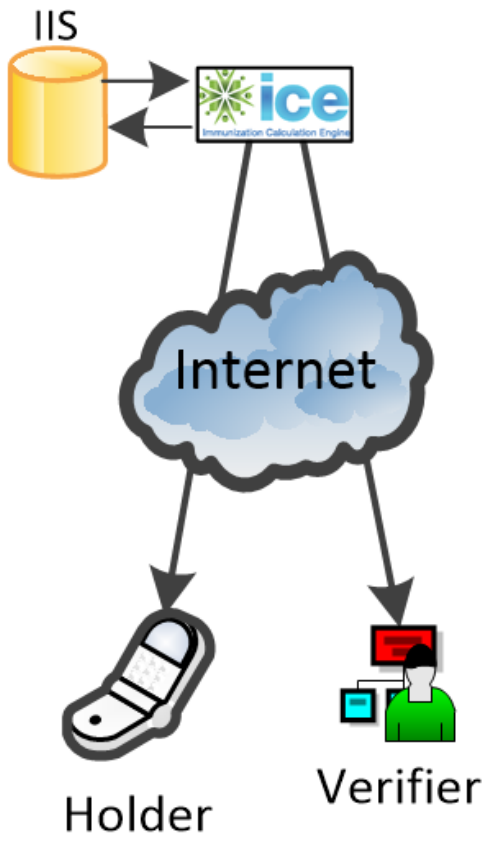
Fallback Strategy

- 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 would query IIS via current HL7 v2 standards and in turn provide standards-based vaccine credentials through a FHIR-based API.
- The app would serve as the authorized, digitally-verifiable source of vaccination information in that jurisdiction.
- IIS should 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 provide their own consumer app.



Supplemental Strategy

- IIS should 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).



Discussion

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)
- 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

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