

NEW YORK STATE EXCELSIOR PASS
BLUEPRINT

A national framework for building and implementing digital health credentials



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This guide lays out the steps New York State took to set up the Excelsior Pass program and is being shared for your education and assistance in setting up your own system. You are encouraged to consult with your legal counsel and technology and security experts to determine the solution that works best for you.

THE NATION'S

FIRST

DIGITAL HEALTH CREDENTIAL BLUEPRINT

FOR STATES



EXCELSIOR
PASS



EXCELSIOR
PASS PLUS

October 2021

New York State Excelsior Pass Blueprint: A national framework for building and implementing digital health credentials

When I took office as Governor in August 2021, I pledged to combat COVID-19 through bold, decisive actions to promote the public health of New Yorkers while driving our economic recovery forward. I am proud to say that our Excelsior Wallet program is the embodiment of this pledge, through its unwavering commitment to equity, its transformative impact on our economy, and its unique ability to empower our residents to be more in control of their health information than ever before.

To date, more than six million digital health credentials have been retrieved through the Excelsior Wallet and thousands of businesses and venues rely on the Excelsior Pass and Excelsior Pass Scanner application every day.

Excelsior Wallet has done something else significant, too: it has kept the State's momentum going. The Excelsior Wallet is one way to see the tangible benefits of vaccination, whether it is visiting a favorite restaurant, attending a football game or community event, or hugging a loved one at a wedding that has been postponed because of the pandemic.

I have pledged to make transparency a hallmark of my administration, and in the spirit of that promise, I am proud to release the New York State Excelsior Pass Blueprint, a national framework for building and implementing digital health credentials. In the pages that follow, we shine a light on the enterprising strategies our technology leaders deployed to bring this first in-the-nation credential to New Yorkers, statewide. We also spotlight the importance of a collaborative intergovernmental ecosystem that promotes interoperability between credentials — both were key to New York's ability to get residents back to activities safely and securely. Building a collaborative digital health credential ecosystem will take time, but it is a critically important priority for New York.

Our hope is that others may learn from our work—and that we may collectively make our communities safer, our economies stronger, and our nation more interconnected as we emerge from an unprecedented global pandemic—together.



Kathy Hochul

Kathy Hochul
Governor
State of New York

INTRODUCTION

In March 2021, the State of New York launched the nation's first digital vaccine and negative test credential, Excelsior Pass. This free, voluntary platform provides secure, digital proof of an individual's COVID-19 vaccination or negative test results, enabling New Yorkers to get back to the people and things they love, and helping drive our economic recovery in the process. The State has continued to evolve the Excelsior Pass platform, adding the globally interoperable Excelsior Pass *Plus* and the updated Excelsior Pass Scanner application to the suite of products, investing in the Excelsior Wallet as a platform to continue to address the pressing needs of New Yorkers.

To date, millions of Excelsior Passes have been retrieved by New Yorkers statewide for use in a diverse set of businesses and venues.

We are excited to present the first digital health credential Blueprint, a national framework to assist other governments in implementing similarly transformative credentials. This step-by-step guide is tailored for the unique needs of state governments and includes the following components:

- Privacy and Security Strategy
- Data Management Strategy
- Digital Health Credential Management and Development
- Customer Support Strategy
- Public Information and Engagement Strategy
- Strategic Partnership Strategy to Support New York's Organizations and Businesses

The truth is, every day we interact with successful government-run technologies, often without even noticing. Think traffic lights or electrical grids. In a post-COVID-19, 2021 world, we must not resist but insist that there is room to push further. Technology, indeed, is a critical part of infrastructure, and critical to New York's commitment to build back better than ever before.

When the public sector shirks its duty to innovate and modernize, citizens are the ones who lose out. The investments we make today prepare us for the needs of tomorrow. We would be wise to consider moments when the government's embrace of technology has led to true innovation. After all, it is how we built ultra-sonic sensors, created the Epi-Pen, and built the early internet that later made telehealth possible. Now—and it is our mission—it can help us return to a life we never knew we would forget how to reenter.

Through the implementation and adoption of digital health credentials across the United States and abroad, we believe our communities will be safer and our economies stronger. We hope other states, territories, and nations can leverage the tools and knowledge in this Blueprint to support the adoption and interoperability needed to help further our collective reopening efforts nationwide.

It is a bridge New York will keep building — and our hope is you will too.



A handwritten signature in black ink that reads "Sandra L. Beattie".

Sandra L. Beattie
Division of the Budget First Deputy Director
State of New York

BLUEPRINT OVERVIEW

The **New York State Excelsior Pass Blueprint** is designed to support governments and organizations who are interested in creating their own digital health credentials. Looking forward, New York State hopes this Blueprint will ultimately expand the number of available and interoperable credentials nationwide, so we can reopen our economies and borders safely.

PART

1

THE JOURNEY AND
SOLUTION ARCHITECTURE

FAST TRACKING A SAFE REOPENING DURING COVID-19

To aid in the safe reopening of the economy, New York State launched the free, voluntary Excelsior Wallet in March 2021. Excelsior Pass, the nation's first digital COVID-19 health credential, was the centerpiece of this platform. The Pass is not a “vaccine passport,” but a digital, verified credential that proves an individual has been vaccinated or has tested negative, through a unique, scannable QR code — a QR code is a machine-readable optical label that contains information about the item to which it is attached. This enables organizations and businesses to easily scan the credential, confirm its authenticity, and prevent against fraudulent credentials. Excelsior Wallet now includes Excelsior Pass *Plus* and the Excelsior Pass Scanner application for organizations — and continues to serve as an important tool in New York's reopening.

VOICES OF EXCELSIOR PASS

“New York was hit hard by COVID-19, and we have led bold efforts to pursue innovative solutions to reinvigorate economies. Excelsior Pass and Excelsior Pass *Plus*—the nation’s first vaccine and negative test pass system—have been critical tools in the safe reopening of our economy and the protection of New York’s public health.”

Kathy Hochul, *New York State Governor*

“The business community is eager to get our city’s workforce back to the office, to safely re-open entertainment venues and restaurants, and much more. The Excelsior Pass is an exciting new tool that will accelerate our state’s economic recovery. It is evidence of New York’s forward-thinking approach to restoring jobs and moving beyond the pandemic.”

Kathryn Wylde, *President & CEO, Partnership for New York City*

“The State of New York shares VCI’s vision of empowering individuals with convenient and secure mobile access to their own health records to support safer workplaces, business, schools, and tourism throughout the Empire State. We’re pleased New York has embraced the SMART Health Card Framework as they continue to innovate and support residents and visitors to tell their own health story locally and across the world.”

Dr. Brian Anderson, *Chief Digital Health Physician at MITRE and a Co-Leader of VCI*

“This technology will help to ensure that vaccine verification can happen more easily and efficiently.”

Jay Inslee, *Washington State Governor*

BUILDING A SAFE, SECURE, AND TRUSTED SYSTEM

Excelsior Pass empowers individuals to access their COVID-19 vaccination record or negative test results through an integrated, secure platform that accesses the State and City immunization registries that *already* exist.

Right now, interested individuals can choose from six different Pass types:

- Excelsior Vaccination Pass (available 15 days after the final dose of the vaccine was administered; valid for 365 days)
- Excelsior PCR Pass (valid until midnight on the third day after a test)
- Excelsior Antigen Pass (valid for 6 hours from the time of a test)
- Excelsior Vaccination Pass *Plus* (available 15 days after the final dose of the vaccine was administered; as a digital copy of an individual vaccination record, there is no expiration date)
- Excelsior PCR Pass *Plus* (valid until midnight on the third day after a test)
- Excelsior Antigen Pass *Plus* (valid for 6 hours from the time of a test)

Note: Pass validity periods were informed by clinical guidance issued by the Centers for Disease Control and Prevention.



Excelsior Passes are generated based on data provided by trusted New York State vaccine and testing administrators (e.g., doctor, nurse, or other healthcare providers). This data is entered into the confidential New York State (NYSIIS) and New York City's (CIR) immunization and testing (ECLRS) databases.

NYSIIS and CIR are longstanding systems that maintain secure immunization records for people of all ages in New York State and New York City. Reporting to ECLRS has similarly occurred for decades. The goal of the State and City information systems are to establish complete, accurate, secure, and easily accessible immunization records as well as real-time testing data, all to promote public health and minimize disease spread — including throughout the COVID-19 pandemic.

Some entities that are not under the regulatory authority of the State of New York (e.g., federal entities, first nations, and jurisdictions outside of New York State) may not report into these systems. This is why it is crucial that others join New York State to create credentials. Success is reliant on the quality and completeness of COVID-19 vaccine and test data, and the accuracy and timeliness of provider input. Together, we can build and harmonize standards to enable the acceptance of each other's digital health credentials.

For more information on the New York State Immunization System (NYSIIS), please visit the link [here](#).

For more information on the City Immunization Registry (CIR), please visit the link [here](#).

For more information on the Electronic Clinical Laboratory Reporting System (ECLRS), please visit the link [here](#).

HOW IT WORKS

The following steps show how Excelsior Pass and Excelsior Pass *Plus* utilize State and City health databases to issue Passes that can be verified using the Excelsior Pass Scanner application.

1

A user gets a COVID-19 test and/or vaccination in New York State, which is then entered into ECLRS or NYSIIS/CIR respectively by the administrator.

2

Once a user gets their negative test result or is considered fully vaccinated—meaning 15 days after they received their last vaccine dose in their initial series—they can visit epass.ny.gov or go to the Apple App Store or Google Play Store and retrieve the Excelsior Wallet application. The user must verify their information by inputting their name, date of birth, and other information accurately. Passes are free and can be printed from a computer or presented through the application.

3

After a user's identity has been verified against the user's test or vaccination records in ECLRS or NYSIIS/CIR, the Excelsior Pass platform will instantly generate the user's Pass. New York State is working hard to expand categories of eligible users and currently can match vaccine records for New York residents that were vaccinated in New Jersey or Vermont. Additionally, any New York State resident who is fully vaccinated with a U.S. Food and Drug Administration (FDA) approved or authorized COVID-19 vaccine can present their Centers for Disease Control and Prevention (CDC) Vaccination Card to their New York State vaccination provider who can upload their information into NYSIIS/CIR so they can retrieve their Pass.

4

Organizations and businesses can retrieve the free Excelsior Pass Scanner application from the Apple App Store or Google Play Store to scan and verify Excelsior Pass and Excelsior Pass *Plus* and more easily comply with State laws (e.g., vaccine requirements).

THE EXCELSIOR PASS SOLUTION ARCHITECTURE – PRODUCTS AND FEATURES

New York State continues to expand and evolve the Excelsior Pass platform to meet the needs of New Yorkers and organizations through an ever-changing pandemic. It has added multiple features for individuals and businesses alike and will continue to enhance the platform to support New Yorkers getting back to the people and places they love.

Following the success of Excelsior Pass, and to create an interoperable, digital, records-based solution, New York State launched Excelsior Pass *Plus*. Shortly after, the State worked to evolve the Excelsior Pass Scanner application for organizations with expanded functionality. The Scanner application is the first in the United States able to validate credentials issued by other U.S. States and entities based on federal and State COVID-19 clinical guidance and adherence to [SMART Health Card Framework](#) and specifications.

THE EXCELSIOR PASS SOLUTION ARCHITECTURE – PRODUCTS AND FEATURES (CONTINUED)



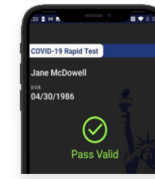
Excelsior Pass: Secure, digital proof of COVID-19 vaccination or negative test results for use in New York State

- ✓ Provides proof of COVID-19 vaccination
- ✓ Available for in-State COVID-19 vaccinations and New York residents who were vaccinated in New Jersey or Vermont (at time of publishing)
- ✓ Available for fully vaccinated New York residents who were vaccinated outside of New York State with an FDA-approved or authorized vaccine who present their COVID-19 vaccination information to a New York State healthcare provider to enter into the secure New York State and/or New York City immunization databases
- ✓ Provides proof of negative COVID-19 test results
- ✓ Available in printable, hard-copy format for non-smartphone users
- ✓ Scannable for verification via the Excelsior Pass Scanner application
- ✓ Contains no health information on the Pass for users interested in a limited information visible option



Excelsior Pass Plus: Secure, digital copy of an individual's COVID-19 vaccination record or negative test results for use in and outside of New York State where [SMART Health Cards](#) are accepted

- ✓ Digital equivalent of a paper CDC Vaccination Card
- ✓ Available for in-State COVID-19 vaccinations and for New York residents who were vaccinated in New Jersey or Vermont (at time of publishing)
- ✓ Available for fully vaccinated New York residents who were vaccinated outside of New York State with an FDA-approved or authorized vaccine who present their COVID-19 vaccination information to a New York State healthcare provider to enter into the secure New York State and/or New York City immunization databases
- ✓ Provides digital copy of negative COVID-19 test results
- ✓ Available in printable, hard-copy format for non-smartphone users
- ✓ Uses SMART Health Card Framework and specifications, developed in partnership with [Vaccine Credential Initiative \(VCI\)](#)
- ✓ Scannable via the Excelsior Pass Scanner application and other VCI compliant scanners



Excelsior Pass Scanner Application: Mobile application that validates other SMART Health Card credentials that adhere to New York State's [Trusted Issuers](#) framework, based on federal and State COVID-19 clinical guidance, in addition to Excelsior Pass and Excelsior Pass Plus

- ✓ Verifies vaccination and negative test results status via Excelsior Pass, Excelsior Pass Plus
- ✓ Validates vaccination status of SMART Health Cards issued by other U.S. States and entities based on federal and State COVID-19 clinical guidance and New York State's Trusted Issuers framework

If a user chooses to use the Excelsior Wallet application to store their Excelsior Pass, the only personal identification information visible on the Excelsior Pass is user's first name, last name, and date of birth. Users may delete or retrieve an Excelsior Pass or Excelsior Pass Plus at any time.

PART

2

THE DRIVE TOWARD
INTEROPERABILITY

The more widely a digital health credential is accepted, the greater its value to users and organizations. Interoperability—a feature that allows products and systems to work together safely and openly—is key to achieving widespread acceptance and adoption of digital health credentials.

Interoperability lets everyone (the issuer, verifier, and holder) validate and trust that digital health credentials are authentic and secure while being shared. This in turn enables individuals to use their credential(s) in a variety of locations, and businesses to accept more credentials issued outside state borders. There are two things needed to create an interoperable credential:

1. **Open Standards:** Maintain interoperability by allowing solutions to speak the same language so external entities can accept each other's credentials.
2. **Trusted Issuers:** Provide credentials to eligible individuals based on adherence to the same clinical policies and technical commitments. Individuals and entities share a harmonized set of standards that meet the same requirements.

It is significant to note that interoperable solutions that can speak to each other—for the purposes of issuance and acceptance—does not mean that data is exchanged, stored, or shared. It simply enables the validation for safe, secure acceptance between entities.

A Trusted Network of Issuers Enables Interoperability

The **ISSUER** will assert the holder's identity and digitally create a credential.



Verifiable claim
ISSUING PROTOCOL



The **HOLDER** manages their credential and chooses who to share it with and when.

Verifiable claim
VERIFYING PROTOCOL

The **VERIFIER** checks the credential for validity and authenticity, confirming that it belongs to the holder. Verifiers may validate the credential against a system of record.



TRUST MECHANISM



“The adoption of SMART Health Cards and open standards in Excelsior Pass *Plus* is a tremendous step forward in the availability of trustworthy health information for all people. And as a New Yorker, I’m grateful to be able to demonstrate my health status reliably wherever I go, without sacrificing my privacy. This is one more critical step towards the safe reopening and recovery of our fair state.”

JP Pollak

*The Commons Project Co-Founder
and Cornell University Senior Researcher*

“It’s been more than a year since New York State’s first case of COVID-19, and our students, faculty, and staff—and the communities we serve—have done so much to help battle this virus. As we all remain diligent to protect one another, the innovative Excelsior Pass and other tools will help us safely resume more in-person events, which will help accelerate the return of our economy and to more normal times again.”

Beth Berlin

SUNY Chief Operating Officer

“We feel privileged at Daon to be part of the team in New York State that is helping people resume the experiences we all love -- whether it’s catching a flight for a much-needed family vacation or attending a show or concert. More than a million people around the world have already trusted VeriFLY on their life journeys and we look forward to assisting New Yorkers on theirs.”

Tom Grissen

CEO at Daon

EXCELSIOR PASS *PLUS*

New York State initially released Excelsior Pass as a product for New Yorkers, by New Yorkers. Excelsior Pass has and continues to meet the needs of New Yorkers and New York organizations. As our economic reopening accelerated, we sought to build on the solution's success through advancing an interoperable option that supports the State's travel, commerce, and tourism industries through the establishment of Excelsior Pass *Plus*. Excelsior Pass *Plus*:

1. Provides a Pass option for New Yorkers for usage outside of New York State, making interstate and international travel and commerce experiences safer, contact-less, and more seamless.
2. Delivers a Pass option that serves as a digital copy of an individual's vaccination record, verified by the State of New York.
3. Holds the same level of information and validity as a CDC Vaccination Card, with greater security than a physical card which can be misplaced or stolen.



“New York State’s adoption of SMART Health Card and update to their Scanner application is a great example of what’s possible when public, private, and community organizations work together to respond to crisis and solve problems. The need to respond urgently to COVID-19 is what inspired VCI members to connect across boundaries and borders in a true expression of open collaboration, developing a standard that puts people first. I am heartened to see individuals, businesses, and innovators in public service like New York State deploying the use of SMART Health Cards in a way that continues to support this work.”



Lila Tretikov

Corporate Vice President & Deputy CTO, Microsoft



“We applaud the State of New York for committing to an open framework for digitally verifying vaccination records. This release is an important step forward for a national, interoperable system that makes the verification of vaccination information easier for residents and businesses alike.”



Rick Klau

Chief Technology Innovation Officer of California Department of Technology



**EXCELSIOR
PASS**



**EXCELSIOR
PASS PLUS**

ADVANCING THE EXCELSIOR PASS SCANNER APPLICATION

Ultimately, expanding on our commitment to provide every tool for businesses to reopen and keep open their businesses, New York State became the first-in-the-nation to update its Excelsior Pass Scanner application to accept SMART Health Cards issued by other entities that adhered to the State's Trusted Issuers framework — based on federal and State COVID-19 clinical guidance. The Excelsior Pass Scanner application:

1. Establishes the first rules engine in the United States based on federal and State COVID-19 clinical guidance.
2. Enables the immediate validation of other SMART Health Cards by other U.S. States.
3. Cements a standard of issuance for digital COVID-19 health credentials for entities nationwide.
4. Demonstrates the power of a harmonized, open set of standards — enabling interstate use without extensive back-end data-sharing.
5. Provides organizations and businesses nationwide with a free validator application available in more than ten languages.



“Over the last year, New York State mobilized a cross-disciplinary team of policy, IT, and public health professionals to achieve interoperability across U.S. States and beyond. Our proactive approach to establishing partnerships across state lines and borders will ensure meaningful benefit for New York State’s residents and businesses – supporting economic development efforts and getting individuals back to the people and places they’ve missed – safely and securely.”

Lauren Merkel

Vice President of International Affairs, Empire State Development



“The SMART Health Cards Framework underscores VCI’s commitment to trust and transparency. Built on free and open standards, this framework provides a secure way to request, save, and share health information. We are proud to contribute to New York State’s efforts to secure their residents’ well-being and foster a safe reopening.”

Dr. Josh Mandel

Chief Architect at Microsoft and a Co-Leader of VCI

THE NATION'S FIRST VALIDATOR APPLICATION AND RULES ENGINE BASED ON FEDERAL AND STATE COVID-19 CLINICAL GUIDANCE

WHAT IS A TRUSTED ISSUER?

The Excelsior Pass Scanner application validates credentials from trusted SMART Health Card issuers nationwide who meet New York State's standards of issuance, based on federal and State COVID-19 clinical guidance. Trusted issuers are providing credentials to eligible individuals based on clinical policies and technical standards New York State accepts.

New York State through the Excelsior Pass Scanner application is not responsible for the underlying data on credentials issued outside of New York State. The Scanner application validates each credential's adherence to our trusted issuers framework of shared policies, standards, and values.

THE POWER OF THE APPLICATION'S RULES ENGINE

Trusted issuers are entities that provision digital COVID-19 health credentials to individuals that meet New York State's standards of issuance. This includes issuing a credentials that meets federal and State COVID-19 clinical guidance as well as SMART Health Card specifications.

The New York State Excelsior Pass Scanner application is built based on a rules engine that will *automatically* enforce New York State's standards of issuance. When the Scanner application scans a valid credential, the Scanner application will display "Pass Valid. If the Scanner application scans a credential that does not meet the State's standards of issuance, the Scanner application will display "Pass Not Valid."

As of October 5, 2021, other U.S. States including California, Louisiana, Hawaii, and Virginia—and soon, Washington State—are all trusted SMART Health Card issuers that meet New York State's standards of issuance.

According to VCI, as of October 5, 2021, more than 150 million United States residents nationwide have access to a SMART Health Card.

THE NATION'S FIRST VALIDATOR APPLICATION AND RULES ENGINE BASED ON FEDERAL AND STATE COVID-19 CLINICAL GUIDANCE (CONTINUED)

HOW DOES IT WORK?

Through the Excelsior Pass Scanner application rules engine, a credential will be validated if it meets the State's standards of issuance. As of October 2021, this includes:

- Vaccine type based on federal and State COVID-19 clinical guidance, which includes both CDC and World Health Organization-approved COVID-19 vaccines for these purposes*
- The definition of fully vaccinated, based on federal and State COVID-19 clinical guidance. This means an individual is at least two weeks past their second dose in a two-shot series (e.g., the Pfizer-BioNTech or Moderna COVID-19 vaccines), or two weeks past a single-dose vaccine (e.g., the Johnson & Johnson (J&J)/Janssen COVID-19 vaccine)
- Adherence to SMART Health Card Framework and specifications, developed by VCI. This includes using open, interoperable standards; a commitment to accessibility through print and digital options; and the protection of individuals' health data. VCI has a Steering Group composed of the founding members of the coalition that are actively supporting and overseeing the implementation, guiding the development process, and ensuring that members of VCI faithfully implement the standard and adhere to the guiding principles of VCI

ADDITIONAL RESOURCES

- [SMART Health Card Technical Specifications](#)
- [HL7 FHIR Standards Overview](#)
- [W3C Standards Overview](#)
- [About the Vaccine Credential Initiative](#)



*As stated on [CDC's Interim Public Health Recommendations for Fully Vaccinated People](#): This guidance applies to COVID-19 vaccines authorized at the time of publication for emergency use by the United States Food and Drug Administration: Pfizer-BioNTech, Moderna, and Johnson & Johnson (J&J)/Janssen COVID-19 vaccines. This guidance can also be applied to COVID-19 vaccines that have been authorized for emergency use by the World Health Organization (e.g., AstraZeneca/Oxford).

PART

3

IMPLEMENTATION
AND ADVANCEMENT

The State of New York focused on key principles to foster trust and adoption of the Excelsior Wallet among users, organizations, and businesses statewide.

The following sections outline each of these efforts in detail, including strategies and best practices the State deployed.



- 01 Privacy and Security Strategy**
Place privacy and security at the center, protecting personal identification and health data before launch.
- 02 Data Management Strategy**
Inventory, understand, and manage large amounts of vaccination and test result data to enable digital health credential retrieval.
- 03 Digital Health Credential Management and Development**
Develop and refine business requirements to inform a product roadmap that is consistent with goals and direction.
- 04 Customer Support Strategy**
Create multi-channel customer support to increase user adoption and respond to challenges.
- 05 Public Information and Engagement Strategy**
Implement a comprehensive public information strategy to increase awareness and reach.
- 06 Strategic Partnership Strategy to Support New York State's Organizations and Businesses**
Engage public and private entities to advance use for the purpose of fast-tracking their reopening efforts while supporting broad-based adoption.

A Cross-Agency, Multidisciplinary State Team

New York State built a cross-agency, multidisciplinary team of experts across public health, economic development, information technology services, and public information to create, manage, and continually build the Excelsior Pass platform. In the following sections, the New York State team shares the work that underpinned their development efforts. The work of Excelsior Pass spans countless public service and State departments, including:

- New York State’s Executive Chamber
- New York State’s Division of the Budget
- New York State’s Department of Health
- New York State’s Department of Information and Technology Services
- New York State’s Empire State Development



“Since March, a collaborative team across New York State has worked day and night to develop the nation’s first COVID-19 vaccination and negative test Pass solution. The Excelsior Pass solution architecture that exists today has expanded capabilities for maximum reach – both for individuals as well as organizations, businesses, and venues nationwide. As the first validation system and rules engine based on federal and State COVID-19 guidance, we are creating new, free, accessible digital infrastructure that brings us all closer together - and closer to the people and things we have missed for too long.”

“From the start, building innovative tools became paramount to New York State’s efforts to combat COVID-19 and build back our communities. Excelsior Pass was created by working collaboratively across agencies and departments. Today and beyond, this powerful technology serves as a tool that helps to protect the health of New Yorkers statewide, while supporting New York’s hardest hit industry sectors. Simultaneously, it empowers New Yorkers to maintain control of their health information – promoting public health education in an entirely new way.”



Rajiv Rao

Chief Technology Officer and Deputy Chief Information Officer of New York State



Danielle Greene

Chief of Staff, New York State Department of Health

01 PRIVACY AND SECURITY STRATEGY

NEW YORK STATE'S APPROACH TO PRIVACY AND SECURITY STRATEGY

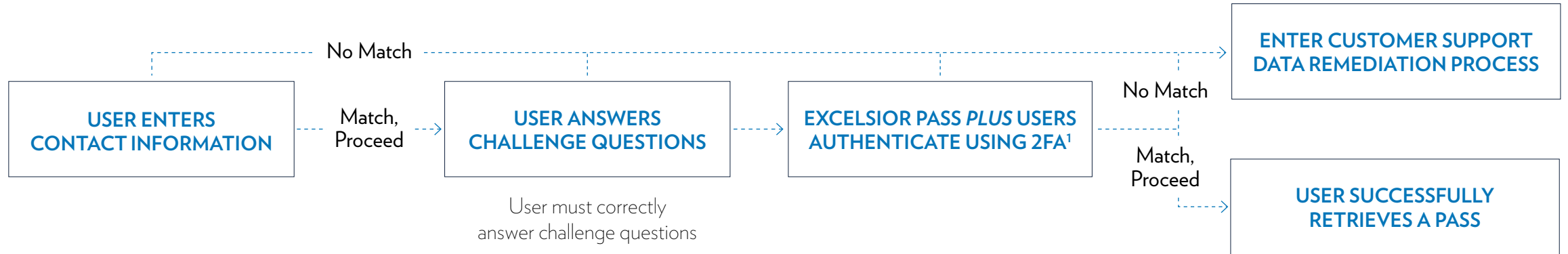
Personally identifiable information (PII) and protected health information (PHI) are a part of digital health credential products and processes and must be safeguarded at all times. Privacy and security are core to all aspects of the Excelsior Pass program. In an effort to protect both, the State:

1. Implemented special considerations to safeguard users' PII and PHI
2. Employed identity verification to secure sensitive health information
3. Provided security communications to increase user awareness and understanding
4. Built Excelsior Pass following [Fair Information Practice Principles \(FIPPs\)](#) and all relevant federal and State privacy laws

To enhance privacy and security across the Excelsior Pass program, New York State implemented the following two-part approach:

1. Safeguard the privacy of user personal information to maintain user trust and compliance with privacy laws and policies.
 - Define privacy policy, authorization to disclose, terms of use, and actions to comply with relevant privacy and security laws
 - Conduct ongoing privacy and security assessments and ongoing security monitoring
 - Provide user challenge questions to access records and help prevent exposing user PII
 - Address core privacy considerations for the collection of personal information, guided by FIPPs to include:
 - Purpose for the collection of personal data
 - Providing the opportunity for consent to collection
 - Articulating a limitation on use of data collected to purpose(s) specified
2. Implement robust security controls.
 - Integrate security mechanisms into the digital health credential process
 - Secure system development lifecycle from the onset
 - Implement encryption of PII/PHI data at rest and in transit
 - Execute digital health credential access control methods such as identity proofing
 - Implement public key infrastructure-based verification of trusted issuers during digital health credential scanning process
 - Mitigate against brute force and automated attacks by building in additional controls such as:
 - Two-factor authentication (2FA)
 - Account lockouts based on excessive failed digital health credential access attempts

01 PRIVACY AND SECURITY STRATEGY (CONTINUED)



First Name
Enter First Name

Last Name
Enter Last Name

Date of Birth (MM/DD/YYYY)
MM/DD/YYYY

Zip Code
Enter Zip Code

Phone Number (555-555-5555)
555-555-5555

CONTINUE

*Your data won't be stored.

Get Started **Verify Identity** Get Your Pass

Verify your identity.

Answer these quick questions so we can verify your identity and find your COVID-19 health records.

When did you get the final dose of your vaccination series?

If Pfizer or Moderna:
Date of your second dose
If Johnson & Johnson (Janssen):
Date of your single vaccine dose

Date (MM/DD/YYYY)
MM/DD/YYYY

Get Started **Verify Identity** Get Your Pass

Verify phone number or email.

To get your Excelsior Pass *Plus*, we need to send you a code as an added layer of security.

Send a text to (212) ***-4567
 Send a voice message to (212) ***-4567
 Send an email to j*****@gmail.com

SEND MY CODE

Not able to verify?

If you are not able to verify your phone number or email, please contact your vaccine

Get Started **Verify Identity** Get Your Pass

Hi Jane. You have multiple Excelsior Pass *Plus* Passes.

Your Excelsior Pass *Plus* Passes are now active based on any recent tests or vaccinations you have completed. Be sure to save them before you leave.

Active Passes (3)

HOW DO I START USING MY PASS *PLUS*? ▶

COVID-19 Vaccination Excelsior Pass Plus

Hi Jane.

You do not have an active Pass available. This could be because:

- It has been more than 3 days since you had a PCR Test
- It has been more than 6 hours since an Antigen test was done
- In the past 10 days, you had a positive screening test result
- It has been less than 15 days since you received the last dose of the COVID-19 vaccine.

If you are attempting to retrieve your Pass and your issue persists, you can use the following form to help us understand your situation so that we can assist: <https://forms.ny.gov/s3/Record-Review-Request>

¹only applies to users retrieving an Excelsior Pass *Plus*

01 PRIVACY AND SECURITY STRATEGY (CONTINUED)**PRIVACY AND SECURITY STRATEGY ACTIVITIES**

Privacy and security measures work together to ensure the confidentiality and integrity of PHI, such as vaccine record information. New York State ensured the following agreements were in place to protect data privacy before launching Excelsior Pass – this strategy can help new entities get started.

1. Application Developer Data Use Agreement (DUA)

- A DUA is required for vaccine credential third party application developers to obtain access to COVID-19 vaccination and test results data held by a health agency (“COVID-19 Data”)
- Security and privacy requirements for third party application developers should include:
 - o Implementing administrative, technical, and physical safeguards to protect the confidentiality and integrity of data provided under the DUA
 - o Compliance with applicable federal and/or state information security and privacy laws and policies

PRIVACY AND SECURITY TERMS OF USE

New York State put the following agreements in place to help protect privacy before verifiers can scan a digital health credential.

1. Scanner Application User Acceptance of Terms of Use*

- The Terms and Conditions should be clearly presented to prospective scanner application users and allow for acceptance prior to retrieval and use
- Health credential data should only be used for intended and limited purposes and no other purposes (e.g., marketing or sales)
- Prohibitions on permanent collection or storage of scanned data, unless as required by law, regulation, rule, or executive order, should be included in the Terms and Conditions

**Recommended for organizations, businesses, and venues scanning customers (e.g., local amusement park)*

2. Digital Health Credential User Authorization to Disclose**

- The Authorization to Disclose should be clearly presented to the user
- It should also allow for consent to disclose personal information necessary for retrieving and using the credential(s), and specify how and for what purpose(s) any user data will be used
- Note that only the minimum amount of data necessary to perform the aforementioned purpose(s) will be collected, and include a highly visible link to a governing Privacy Policy

***Recommended consent agreement for prospective health credential users to obtain access to organizations, businesses, and venues requiring proof of such credentials*

01 PRIVACY AND SECURITY STRATEGY (CONTINUED)

APPLY FAIR INFORMATION PRACTICE PRINCIPLES TO PRIVACY AND SECURITY GOALS

A digital health credential program should follow the FIPPs, an internationally accepted framework for privacy standards and policies. Excelsior Pass was developed based on core FIPPs principles and is consistent with applicable federal and state privacy laws.

Privacy and security managers should maintain a continual focus on preserving the security of users' personal information, including that such information remains encrypted. Governments should leverage existing identity and access management systems if sufficiently mature (e.g., strong identity assurance, two-factor authentication). Ongoing maintenance and monitoring will increase the strength and resiliency of information privacy and security controls.

02 DATA MANAGEMENT STRATEGY

NEW YORK STATE'S APPROACH TO DATA MANAGEMENT STRATEGY

New York State implemented a strong data management system and data remediation process to support users retrieving their Excelsior Pass or Excelsior Pass *Plus*. The State proactively worked to optimize data quality by working with health care providers and users to continuously enhance data quality.

New York State worked to ensure it had access to complete, accurate, and timely information from COVID-19 testing laboratories and vaccination administrators so New Yorkers who were eligible could retrieve their Passes. To date, the vast majority of Excelsior Pass users have had a seamless and successful experience generating their Pass. This is due to:

1. Advanced public information about how Passes are generated to provide education for New Yorkers and New York State providers to ensure general awareness for the process if a delay arose
2. Established clear guidance and communications with New York State vaccination and testing providers to ensure that they understood the requirements to upload complete, accurate, and timely information
3. Developed State-supported data remediation through a survey-based step-by-step guide for New Yorkers
4. Established feedback loops with Development and Customer Support teams

02 DATA MANAGEMENT STRATEGY *(CONTINUED)*

DATA MANAGEMENT STRATEGY ACTIVITIES

New York State reviewed systems and data sets, developed control processes, and executed outreach to enhance data quality critical for successful digital health credential retrieval:

- Review datasets during program stand-up and on an ongoing basis to assess strengths and limitations. Available and accurate test and vaccination record information is required to issue a digital health credential
- Confirm access to complete, accurate, and timely data
- Review the fields required in the vaccination record to retrieve a digital health credential that may be optional for administrators depending on existing policies. This may impact a user's ability to retrieve a credential
- Establish a mechanism to collect and update user data once vaccines have been administered to address data issues associated with digital health credential retrieval

A dedicated strategy to prioritize data elements that need to be updated and fields that will be required for product development and management can drive impact:

- Assess data quality and identify gaps and develop a plan to update data elements based on considerations for balancing needs of product development as well as correcting records to enable successful digital health credential retrieval
- Consider end data owner(s) and their limitations in correcting that data and identify policies governing the correction of data and who can fix identified issues
- Build a feedback loop for analysis of data quality and impact on potential product enhancements not considered as part of original development

03 DIGITAL HEALTH CREDENTIAL MANAGEMENT AND DEVELOPMENT

NEW YORK STATE'S APPROACH TO DIGITAL HEALTH CREDENTIAL MANAGEMENT AND DEVELOPMENT

New York State used agile principles to drive product management activities. Working in iterative three-week sprints and gathering feedback via user acceptance testing (UAT) allowed the Development Team to work quickly and efficiently:

1. Used and stood up a platform as the one source of truth for sprint scope, timelines, feature prioritization, and product goals. All key stakeholders were provided access to this platform (e.g., managers, designers, developers)
2. Considered building the product within the constraints of available data from State systems and providers
3. Ensured proper prioritization for each sprint
4. Considered a large sample size of different users on different platforms and versions of technology (e.g., iOS, Android, desktop)

New York State took a user-centric approach to designing, developing, and deploying its Excelsior Pass, Excelsior Pass *Plus*, and Excelsior Pass Scanner application. Lessons learned from the State's path can inform future efforts for digitization of state services:

1. Prioritized interoperability for all technical stacks to ensure each layer is compatible across different platforms
2. Selected the application programming interface (API) attributes based on the quality of data provided by its State Immunization System; these attributes may vary based on other entities' data sources

03 DIGITAL HEALTH CREDENTIAL MANAGEMENT AND DEVELOPMENT *(CONTINUED)*

DIGITAL HEALTH CREDENTIAL MANAGEMENT AND DEVELOPMENT ACTIVITIES

Initiate all agile in-sprint actions required to scope, design, build, and deploy technical products, such as:

- Stand up comprehensive agile sprint buildout (e.g., JIRA instance) to act as one source of truth between managers, designers, and developers
- Initiate product roadmap and review and revise on an agreed-upon cadence
- Support a private and secure customer experience through security and ethics expertise concerning digital identity solutions

Scope requirements that align with product vision may include:

- Develop functional requirements
- Collaborate with stakeholders to prioritize functionality from product backlog based on data/security considerations
- Collaborate with designers and technical architects to understand user flow and technical level-of-effort

Hand off to Development Team for technical buildout to:

- Draft and design user journeys/user experience flows
- Compose user stories to meet functional requirements
- Estimate level of effort to develop requirements
- Gather technical requirements with key stakeholders and identify where various systems will work together to establish a comprehensive solution
- Establish infrastructure layers and support application preferences

Build interoperable solutions based on open standards to:

- Establish trusted relationships between issuers, users, and verifiers, allowing data sharing through secure means
- Develop, integrate, and test end-to-end digital identity and digital credential solutions in a live environment

Test applications prior to public release to ensure key functionality is working as designed, avoiding technical “bugs” or glitches, including:

- Apply a UAT lifecycle
 - Initiate UAT testing by defining approach
 - Design UAT tests
 - Execute UAT tests
 - Close UAT testing with synthesized insights and recommendations

Iterate and build upon minimum viable product to improve application performance and usability, including:

- Ensure technical architecture is in line with agreed-upon health standards
- Ensure technical architecture maintains high performance
- Ensure technical architecture supports usability and interoperability

03 DIGITAL HEALTH CREDENTIAL MANAGEMENT AND DEVELOPMENT (CONTINUED)**INITIATING AGILE SPRINT EVENTS KICKS OFF REQUIREMENTS GATHERING**

EVENT	PURPOSE	OTHER ATTENDEES	DURATION	WEEK
Product Backlog Grooming	Validate and prioritize user stories for upcoming sprint	Functional team	1 hour	Week 0
Sprint Estimation	Estimate the development complexity of user stories for upcoming sprints	Functional team, Technical team	1 hour	Week 0
Sprint Planning	Scope, prioritize, plan the user stories, and develop tasks from user stories for the upcoming sprint	Product owner, Scrum team	2 hours	Week 0
Approve Sprint Backlog	Sign-off upcoming sprint requirements	Product owner	N/A	Week 0
Daily Standup	Align within scrum (development) team on daily activities	Scrum team	15 min	Week 1 / 2
Biweekly Scrum of Scrums	Align across scrum team	Scrum team leads	15 min	Week 1 / 2
Prepare for Product Owner Meeting	Align ahead of product owner meeting	Scrum team leads	30 min	Week 1 / 2
Sprint Retrospective	Reflect on the most recent sprint to improve on future sprints	Scrum team	30 min	Week 1 (for previous sprint)
Product Owners Meeting	Review progress and address any blockers / risks	Product owner, Scrum team leads	30 min	Week 1 / 2
Solution Architecture Review	Review solution architecture and address any concerns or requirements raised by new user stories	Scrum team leads	2 hours	Week 1 / 2
Integrated Workstream Committee	Coordinate with non-technical workstreams on technical development and functional requirements	Product owner, leads from other workstreams	1 hour	Week 2
User Acceptance Testing	Test new user stories to ensure they meet requirements for real-world scenarios and security/privacy concerns are addressed	UAT team	N/A (multi-day activity)	Week 3
Security Testing	Conduct security testing as needed	Security team	N/A (activity as needed)	Week 3
Sprint Review	Demonstrate product increments from the sprint and collect feedback from all participants to load in the backlog	Product owners, Scrum team, Functional SMEs	2 hours	Week 3

03 DIGITAL HEALTH CREDENTIAL MANAGEMENT AND DEVELOPMENT *(CONTINUED)*

RELEASE AND SCRUM MANAGEMENT ACTIVITIES

Release and scrum management—a structured framework for product development that is frequently used by agile software development teams—involve multi-step processes that ensure relevant features are built, developed, and deployed within each product release.

The steps below illustrate sequential key activities that should occur within each sprint:

1. Gather business requirements
2. Break requirements into user stories
3. Break down user stories into technical requirements/acceptance criteria
4. Out-of-cycle requirement changes
5. Develop product
6. Perform System Integration Testing
7. Perform UAT
8. Verify translation copy
9. Receive proper Go-Live approval
10. Go-Live

NEW YORK STATE'S APPROACH TO TECHNICAL STACK STRATEGY

New York State used four distinct technology layers to build, implement, and deploy the Excelsior Pass. New York State does not endorse any specific technical products or companies. The solutions provided below are only examples of technologies that could be used to support each of the recommended technology layers.

1. Application Layer

The application layer hosts digital health credential applications and allows them to run on PCs, tablets, and smartphones. Swift, Angular, and Kotlin are front-end development languages utilized for iOS, Portal, and Android respectively.

2. Services Layer

Three distinct types of products support the digital health credential service layer: Node.JS, a technology used to build back-end APIs and is used for a runtime environment; IBM's PostgreSQL Database, a system that holds valuable user data; and a communications API used for 2FA texts.

3. Infrastructure Layer

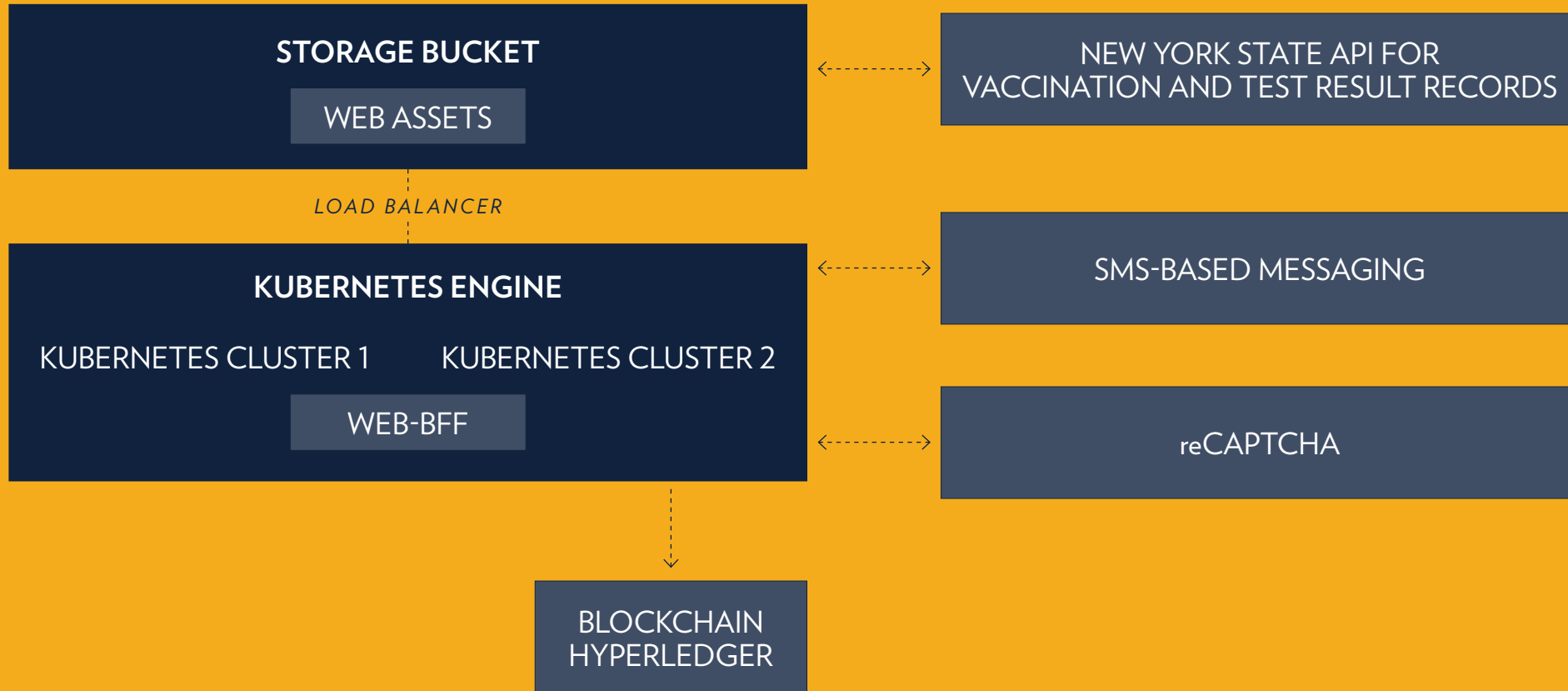
All digital health credential applications must have a cloud infrastructure layer for storage, computing power, and hosting. Excelsior Pass and Excelsior Pass *Plus* run on the IBM Cloud. However, any cloud provider (e.g., Google Cloud, AWS, Azure) can be used.

4. Deployment Layer

The deployment layer runs on Kubernetes, which is used for management of containerized docker workloads, services, and deployment.

03 DIGITAL HEALTH CREDENTIAL MANAGEMENT AND DEVELOPMENT (CONTINUED)

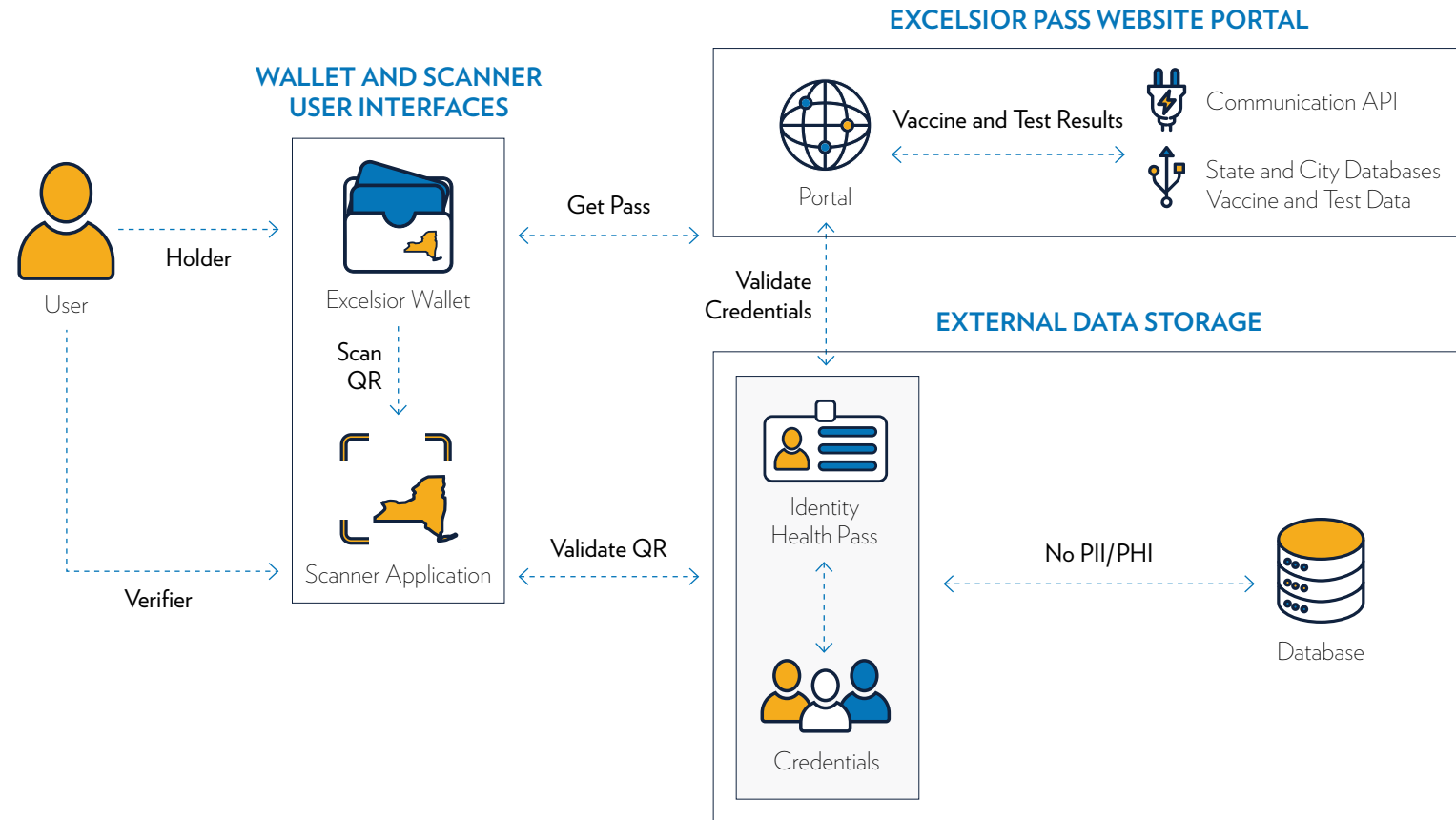
NEW YORK STATE'S APPROACH TO EXCELSIOR PASS PORTAL DEVELOPMENT COMPONENTS



03 DIGITAL HEALTH CREDENTIAL MANAGEMENT AND DEVELOPMENT (CONTINUED)

HIGH LEVEL EXCELSIOR PASS PORTAL BACK-END ARCHITECTURE ACTIVITIES

The Excelsior Pass platform consists of the following components — Wallet, Scanner, Portal, and data storage. The architecture below outlines how the logic around these components work together.



BACK-END ARCHITECTURE COMPONENTS

- The Wallet holds all of the Passes that are generated in the application, and the Scanner validates all of the generated Passes
- The Portal allows users to get their Pass and validates information the user provides
- The blockchain enabled data storage component stores and protects data in a decentralized, secure network

03 DIGITAL HEALTH CREDENTIAL MANAGEMENT AND DEVELOPMENT *(CONTINUED)*

BUILDING LOGIC RULES INTO THE PORTAL TO ISSUE A DIGITAL HEALTH CREDENTIAL

New York State uses the following seven rules to issue Excelsior Pass and Excelsior Pass *Plus*. These rules can be flexible based on verification needs and are built into the product. Logic reflects current clinical guidance issued by the CDC.

1. If the user has ANY positive test result in past 10 days – *Denied*
2. If the user's most recent test was PCR, negative, and performed less than 72 hours ago – *Approved* for PCR Pass for three days from time of collection and rounded up to the end of the third day
3. If a user obtains a negative Antigen test, which was done less than six hours ago – *Approved* for Antigen Pass for six hours from time of collection (not rounded to end-of-day)
4. For Excelsior Pass – If the user has completed a vaccine series and the last dose was more than 14 days ago – *Approved* for Vaccination Pass valid for 365 days from final dose date
5. For Excelsior Pass *Plus* – If the user has completed a vaccination series and the last dose was more than 14 days ago – *Approved* for Vaccination Pass with no expiration date
6. User received any vaccination that does not comply with CDC and/or State approved vaccines – *Denied*
7. Any other condition – *Denied*

03 DIGITAL HEALTH CREDENTIAL MANAGEMENT AND DEVELOPMENT (CONTINUED)

VERIFY IDENTITY THROUGH THE EXCELSIOR PASS PORTAL

The Excelsior Pass Portal uses challenge questions to confirm a user’s identity and to determine whether a digital health credential should be issued. New York State selected the attributes below based on the quality of data provided by its Immunization Information System.

The accuracy of these attributes may vary based on the selected source database.

	EXCELSIOR PASS		EXCELSIOR PASS PLUS	
	VACCINE	TEST PASS (WHEN NO VACCINE RECORD)	VACCINE	TEST PASS (WHEN NO VACCINE RECORD)
QUESTIONS	<p><i>In which county were you vaccinated?</i></p> <p><i>When did you get the final dose of your vaccine?</i></p> <p><i>Which type of vaccine did you receive?</i></p>	<p><i>What was the date of your last COVID test?</i></p> <p><i>What are the last four digits of your phone number?</i></p>	<p><i>In which county were you vaccinated?</i></p> <p><i>When did you get the final dose of your vaccine?</i></p> <p><i>Which type of vaccine did you receive?</i></p>	<p><i>What was the date of your last COVID test?</i></p> <p><i>What are the last four digits of your phone number?</i></p>
MULTI-FACTOR AUTHENTICATION	No	No	Yes—phone or email required on record	Yes—phone or email required on record

03 DIGITAL HEALTH CREDENTIAL MANAGEMENT AND DEVELOPMENT *(CONTINUED)*

UAT PROCESS AND LIFECYCLE TO SUPPORT DEVELOPMENT

In alignment with testing activities, UAT is an important part of development and refining the product before it is released to the public.

UAT PROCESS OVERVIEW

1. Testing devices and tools

- **iOS** — Pair of iPhones and an iPad
- **Android** — Pair of Android phones and a Tablet
- **Desktop** — Desktop computer with supported internet browsers
- **Documents** — Bug and issue tracking tool (JIRA); Requirements Traceability Matrix
- **Application** — Beta testing application (TestFlight); Wallet; Scanner; Portal

2. Onboarding UAT Participants

- Confirm UAT participants information with UAT coordinator
- Send invitations to UAT participants for all testing tools
- Send UAT instruction documents to participants

3. Installing Tools

- Install and confirm UAT participants have access for all testing tools

4. Running Test Scripts

- Run test scenarios outlined in test scripts
- Use test personas from test data sheets
- Record bugs in respective UAT tools
- Conduct daily triage session to validate and prioritize challenges

UAT LIFECYCLE

1. Initiation

- Define UAT approach
- Identify business users to perform testing
- Adjudicate environmental needs
- Create test data requirements
- Define additional support needed from all other teams

2. Design

- Validate business users to perform testing
- Identify test data requirements
- Confirm additional support needs with other relevant teams

3. Execution

- Perform test execution of business scenarios
- Raise appropriate defects in the test management tool
- Conduct defect re-testing and regression testing

4. Closure Execution

- Validate user acceptance
- Execute on Go/No-Go decision and discuss recommendations

04 CUSTOMER SUPPORT STRATEGY

NEW YORK STATE'S APPROACH TO CUSTOMER SUPPORT STRATEGY

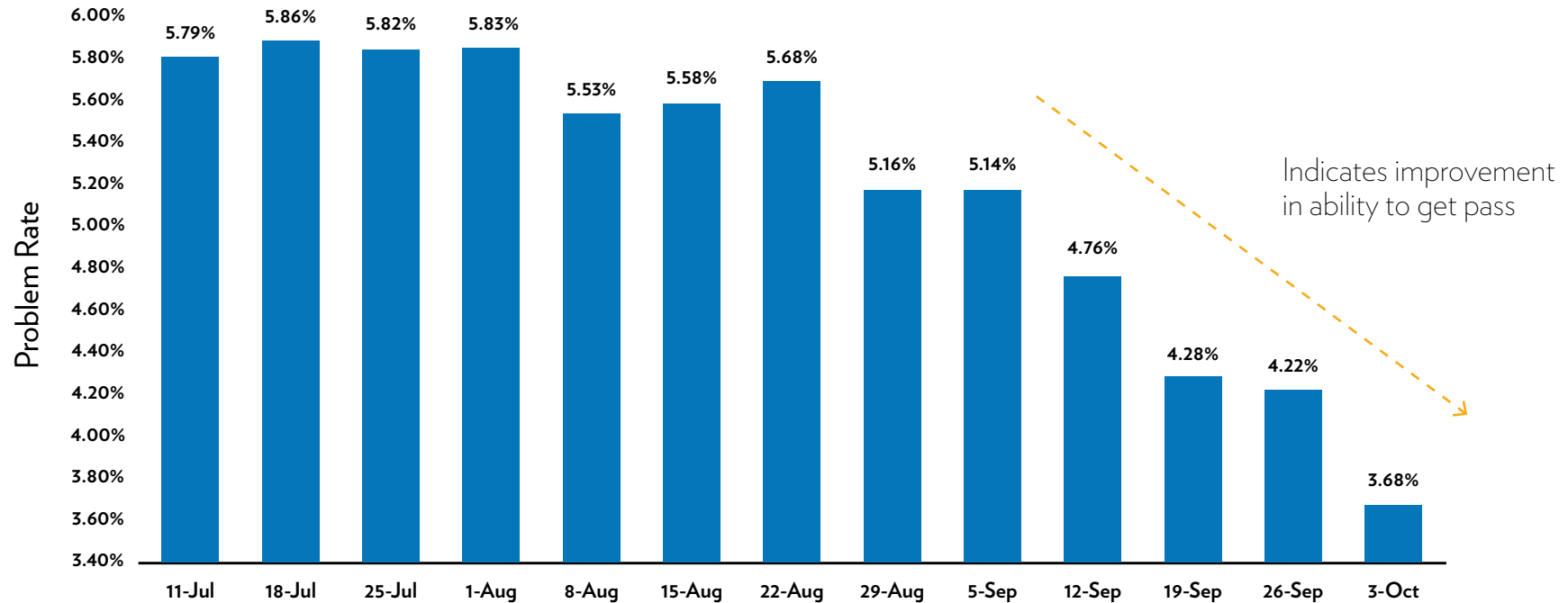
New York State implemented the strategies below to make its customer support function successful:

1. Optimized the customer experience by working to increase successful pass retrievals and prevent recurring issues
2. Established multi-channel options to support users (e.g., FAQs, email, call center)
3. Used existing customer support functionality where possible (e.g., existing call center, Help Desk support)
4. Used feedback from users to inform product management decisions and product features
5. Provided customer support in multiple languages and trained customer support employees in these languages

04 CUSTOMER SUPPORT STRATEGY (CONTINUED)

CUSTOMER SUPPORT REQUESTS RELATIVE TO PASSES RETRIEVED

New York's approach led to meaningful reductions in user support requests relative to the number of Excelsior Passes and Excelsior Passes *Plus* retrieved over time.



04 CUSTOMER SUPPORT STRATEGY *(CONTINUED)*

CUSTOMER SUPPORT STRATEGY ACTIVITIES

The activities below represent key steps that New York took to implement a customer support strategy.

Understanding the areas where customer support may be needed to identify a multi-channel approach for resolution:

- Consider areas where a user may have a question by using findings from data quality analysis
- Build support channels that can help users fix challenges and identify the resources needed to offer support
- Align on a strategy for resolution, such as self-service, interactive service, or administrator support

Creating mechanisms to respond to and resolve user inquiries:

- Self-Service: Easy-to-digest educational materials and push notifications can reduce customer support demands
- Interactive Support: Incorrect underlying data drives a need for interactive support. Determine the best way to capture users' questions or challenges (e.g., support forms, call center) and confirm with data management team to correct
- Provider Considerations: Incorrect data often comes to the health database from a third-party administrator. Refine education and engagement strategies in response to incoming user feedback

Reporting on key performance indicators and inform Development Team:

- Capture key metrics to measure effectiveness and drive decision making
- Provide recommendations to Development Team based on customer themes



05 PUBLIC INFORMATION AND ENGAGEMENT STRATEGY

NEW YORK STATE'S APPROACH TO PUBLIC INFORMATION AND ENGAGEMENT STRATEGY

New York State developed a comprehensive awareness, education, and public information strategy to establish trust, drive acceptance, and make real impact for people, organizations, and businesses.

New York State developed a unique brand with its digital COVID-19 health credential system, Excelsior Pass. To ensure a clear public information strategy through a politically charged and complicated media environment, the State established a strong brand with key messaging pillars. This informed 360-degree communications, ensuring the Excelsior Pass mission was constantly reinforced

For Excelsior Pass, this meant the following:

1. A free, voluntary platform
2. A safe, secure system
3. An accessible and equitable solution
4. A tool for New Yorkers
5. A tool for New York State organization, businesses, and venues

05 PUBLIC INFORMATION AND ENGAGEMENT STRATEGY (CONTINUED)

The following messages became critical to cement the Excelsior Pass brand’s pillars across all touchpoints:

BRAND PILLAR	A FREE, VOLUNTARY PLATFORM	A SAFE, SECURE SYSTEM	AN ACCESSIBLE AND EQUITABLE SOLUTION	A TOOL FOR NEW YORKERS	A TOOL FOR NEW YORK STATE ORGANIZATIONS, BUSINESSES, AND VENUES
KEY MESSAGES	<ul style="list-style-type: none"> Excelsior Pass is a free, voluntary platform for interested individuals Alternate forms of COVID-19 proof of vaccination and negative test results—such as a CDC Vaccination Card or paper test results—must also be accepted where applicable Empowers individuals, for the first time, with direct access to their health records in paper or digital form 	<ul style="list-style-type: none"> Passes are generated based on the safe, secure New York State and New York City immunization and testing databases Information is provided by New York State vaccine providers and testing administrators Interested individuals must enter their information accurately to generate their Pass Individual’s data is kept confidential and secure Individuals choose if, when, and how to present their Pass 	<ul style="list-style-type: none"> All Excelsior Pass solutions are free for individuals, organizations, and businesses Available in print or digital form Accessible through a computer to be printed for those who may not own smartphones or similar devices Accessible through the free New York State Excelsior Wallet Available in more than ten languages Accompanied by a Help Desk with extensive multi-language resources The Excelsior Pass Scanner application is also available in more than ten languages and available for free for organizations and businesses nationwide Robust accessibility testing to ensure it is easy to use for those who may have hearing or vision impairments 	<ul style="list-style-type: none"> Excelsior Pass helps New Yorkers get back to the things, people, and places they’ve missed – safely Over six million Excelsior Passes have been retrieved, representing organic demand Underpinning the State’s back to business, back to office, back to fun, and back to campus activities 	<ul style="list-style-type: none"> Excelsior Pass was built to support the State’s economic reopening Expands on the State’s commitment to provide organizations and businesses with every tool to reopen and stay open Fast-tracks the return of hard-hit industry sectors Provides New York organizations and businesses with a seamless and contactless tool to streamline their operations A diversity of big and small organizations and businesses statewide have and continue to leverage Excelsior Pass to support their reopening efforts

05 PUBLIC INFORMATION AND ENGAGEMENT STRATEGY *(CONTINUED)*

New York State established a clear and consistent brand strategy that was supported by a robust messaging platform and informed by New Yorkers' questions. This guided all communications touchpoints. Creating a distinct brand for the State's digital COVID-19 health credential enabled the State to position it as a product for people, organizations, and businesses — and to take the politics out.

In the case of Excelsior Pass, the State also defined what Excelsior Pass is *not*:

- A vaccine “passport”
- An individual “requirement”
- A business “mandate”
- Just an “application”

Confidence in vision, brand strategy, and consistency in messaging enabled the State to navigate a new product awareness effort during a difficult political and media environment. Being the first State to issue the solution meant educating the nation about why New York created Excelsior Pass and demonstrating its value.

To demonstrate the need for the State-at-large, it became critical to unearth tangible benefits for key stakeholder groups — particularly for end users, organizations, businesses, and venues. Additionally, sensitivity in messaging was required to navigate a difficult, uncharted landscape, including simultaneously ensuring that Excelsior Pass promotion did not dissuade hesitant New Yorkers from getting vaccinated. Rather, Excelsior Pass was there to aid New Yorkers and businesses in their own return to organizations and activities — for those who were interested in it.

Tackling this, the State invested significant attention in continually optimizing public information across all touchpoints. This meant:

- Treating all messaging opportunities—including in-application language and error screens—as important public information touchpoints
- Establishing a new website to serve as a dedicated information hub
- Addressing user questions in real-time through a robust frequently asked questions page
- Creating a distinct website page for organizations, businesses, and venues with centralized, downloadable education and marketing materials
- Providing media with extensive public information resources in response to inquires
- Communicating proactively with New York State vaccine administrators and testing laboratories to eliminate data entry delays

After establishing the Excelsior Pass brand, the State worked to progress additional products forward, ultimately launching Excelsior Pass *Plus* and evolving the Excelsior Pass Scanner application. With trust, New York State earned the right to advance the solution architecture—building more sustainable digital solutions to meet New Yorkers' needs.

05 PUBLIC INFORMATION AND ENGAGEMENT STRATEGY *(CONTINUED)*

PUBLIC INFORMATION AND ENGAGEMENT STRATEGY ACTIVITIES

New York State’s approach to public engagement was to educate, engage, and enhance the Excelsior Pass concept, platform, and products – informing New Yorkers and New York organizations, businesses, and venues:

- *Why* the State invested in the solution
- *What* benefit it provides to individuals and organizations
- *How* individuals and organizations can benefit from its use
- *When* Excelsior Pass products can provide optimal value
- *Where* Excelsior Pass is accepted and used

DRIVING ACCEPTANCE AND ADOPTION THROUGH PUBLIC ENGAGEMENT

Through an easy-to-access product and a dedicated communications strategy, the State worked to drive acceptance, adoption, and ambassadorship through the following:

- Proactive communications about Excelsior Pass across all touchpoints including web, social, digital, media, press, and events
- A positive “drumbeat” through regular press releases and earned media amplification
- Proactive demonstration of the State’s metrics for success through sharing the number of Passes issued and new adoption across public and private New York State organizations, businesses, and venues
- Hands-on support for New York State’s adopters including organizations, businesses, and venues statewide – who in turn provided education to their New York patrons on-the-ground to fast-track reopening efforts

A PUBLIC INFORMATION AND ENGAGEMENT STRATEGY ACROSS ALL SYSTEM TOUCHPOINTS:

- In-product messaging
- Application messaging
- Error screen messaging
- E-mail based messaging
- Call center scripts
- Press releases and responses
- Social media presence
- Branding development
- Assets for organizations and businesses
- Frequently asked questions
- Storytelling opportunities
- Multimedia content, particularly video
- Paid marketing
- Strategic partners as an extension of your brand

A multi-layered public information and engagement strategy will generate awareness, increase adoption, and build trust to earn license to operate. For Excelsior Pass, this means:

1. A recognizable brand with core messaging and attributes that speak to a higher vision for citizens – including themes such as empowerment, accessibility, equity, safety, security, and individual control
2. A strong pulse on the opportunities and challenges facing stakeholders—including end users and organizations—to proactively address their questions, challenges, and ideas
3. Nurturing strategic partnerships with organizations who benefit from Excelsior Pass to drive increased adoption and expand the platform’s reach for public good and economic impact

05 PUBLIC INFORMATION AND ENGAGEMENT STRATEGY (CONTINUED)



"We are grateful the state is focused on doing everything possible to reopen businesses across our region safely and quickly. The Excelsior Pass will play an important role in allowing people to gather safely, which will be critical to New York's recovery. We were proud to be part of the Excelsior Pass pilot and look forward to participating in the program."

James Dolan

Executive Chairman, MSG Sports and Executive Chairman and CEO, MSG Entertainment

"As part of Marriott's Connect with Confidence initiative, which provides innovative meeting solutions and optional health protocols to meeting professionals, we are excited to make New York State's secure Excelsior Pass solutions available to our meeting planner customers."

Tammy Ruth

Senior Vice President, Global Sales Organization, Marriott International

06 STRATEGIC PARTNERSHIP STRATEGY TO SUPPORT NEW YORK STATE'S ORGANIZATIONS AND BUSINESSES

NEW YORK STATE'S APPROACH TO STRATEGIC PARTNERSHIP STRATEGY TO SUPPORT NEW YORK STATE'S ORGANIZATIONS AND BUSINESSES

To support New York State organizations, businesses, and venues, particularly those with proof of vaccination and/or negative test results requirements on a large scale, New York State worked with strategic partners statewide to fast-track their safe and smart reopening efforts.

Large-scale New York organizations, businesses, and venues quickly adopted Excelsior Pass into their reopening strategy—including Madison Square Garden and the Barclay's Center during the NBA playoffs and Yankee Stadium during its first post-COVID-19 in-person games—which also become important moments to demonstrate the platform's value in meaningful ways for New Yorkers and organizations alike. This includes a diverse set of big and small organizations and businesses statewide across hard-hit industry sectors, such as:

- Sports Venues
- Arts and Entertainment Venues
- Offices/Return to Work
- Conventions and Banquets
- Universities/Return to Campus
- Restaurants and bars
- Gyms and fitness centers
- Non-profit use cases and fundraising events
- Museums and cultural centers

06 STRATEGIC PARTNERSHIP STRATEGY TO SUPPORT NEW YORK STATE'S ORGANIZATIONS AND BUSINESSES (CONTINUED)

New York State was hands-on in working with Excelsior Pass adopters across the public and private sector to provide key materials and support, including:

1. Key messaging and public information
2. 'How-to' Business Guides
3. Expansive website content and resources
4. Education and marketing assets for patrons
5. Social media graphics and material

New York State supplied partners with materials to aid in the operational integration of Excelsior Pass and Excelsior Pass *Plus*.

PARTNERSHIP ACTIVITIES TO SUPPORT NEW YORK STATE'S ORGANIZATIONS AND BUSINESSES

Outreach Methods

- Engage directly with in-need public and private New York State entities, particularly across hard-hit industry sectors
- Meet with leaders of industry groups representing a multitude of big and small organizations and businesses
- Establish a dedicated website with organization-specific information and materials
- Communicate regularly and proactively across owned and press channels to reach organizations through earned media and direct outreach

Supporting Materials

- Excelsior Pass overview presentation
- User guides ([Excelsior Pass User Guide](#))
- Marketing materials ([Excelsior Pass Materials](#))
- Ready-made communication templates
- Social media toolkits
- Frequently asked questions
- Messaging scripts
- Compilation of positive news stories
- Custom graphics and marketing materials

06 STRATEGIC PARTNERSHIP STRATEGY TO SUPPORT NEW YORK STATE'S ORGANIZATIONS AND BUSINESSES *(CONTINUED)*

KEY PARTNERSHIPS DRIVING INTEROPERABILITY FORWARD

In addition to establishing partnerships statewide, New York State aligned with organizations that were committed to the State's core values—including advancing interoperability nationwide—and were working towards common practices to harmonize digital health credentials. In doing so, the State partnered with the Vaccine Credential Initiative—a coalition of more than 800 public and private organizations including The Mayo Clinic, Boston Children's Hospital, Microsoft, MITRE, and The Commons Project Foundations—to empower more individuals with access to a privacy-preserving copy of their COVID-19 vaccination record.

As a leading United States member of VCI, New York State has played a role in promoting alignment behind the SMART Health Card standards for states, countries, and other vaccine credential issuers.

BENEFITS OF ENGAGING

- Access to a network of expert and like-minded organizations, including several U.S. States, and key experts on the SMART Health Card Framework that support development and coalition-building activities
- Expertise from industry leaders, technical specialists, and other entities that have developed similar solutions
- Active participation in shaping the evolution and refinement of standards and implementation guidance

In order to participate in VCI, organizations must commit to the following:

- Test, refine, and implement the SMART Health Card Framework within their sphere of influence
- Provide vaccination records in their stewardship directly to individuals in accordance with the implementation guides
- Undergo formal [Application Process](#) and Technical Alignment
- Align to the VCI Code of Conduct and VCI Design Principles which include openness and interoperability, transparency, privacy by design, and flexibility and equity

VCI MEMBERS

- See a current list of the VCI members [here](#)

CONCLUSION

New York today is not the New York it was a year ago. Cities, states, and nations are all adapting to a new world. Together, we must innovate how clinical information and government services are delivered to people in cities and states in the United States and countries around the world.

We believe government's role in pioneering new infrastructure—a digital infrastructure—is critical to our collective reopening and recovery.

New York State is committed to supporting other entities through digital-first leadership, in this Blueprint and beyond. Through creative development and collaborative partnership, we will push further still. We will build more technological solutions that meet emerging needs.

Because of Excelsior Pass, New York State is better off. It gives us hope that new systems will drive us forward in a post-pandemic world – serving as a force for public betterment and good.

As we continue to navigate COVID-19, we must strive for a nation that is safer, healthier, and happier than ever before. Embracing technology will help chart this path forward.

And we stand ready to work with those who do.

THANK YOU



**EXCELSIOR
PASS**



**EXCELSIOR
PASS PLUS**

RESOURCES



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DIGITAL HEALTH CREDENTIAL STARTER KIT CHECKLIST

'IMPLEMENTATION AND ADVANCEMENT' SUB-SECTION	MOVE TO THE NEXT STEP WHEN YOU'VE:
01 Privacy and Security Strategy	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Defined the PII/PHI needed to create a digital health credential <input checked="" type="checkbox"/> Consulted industry best practices for handling sensitive data <input checked="" type="checkbox"/> Created privacy and security strategy <input checked="" type="checkbox"/> Developed and deployed safeguards to protect data and systems <input checked="" type="checkbox"/> Minimized system vulnerabilities and limited data access as applicable <input checked="" type="checkbox"/> Encrypted data <input checked="" type="checkbox"/> Written product terms of use and agreements <input checked="" type="checkbox"/> Determined how data privacy and security will be measured and tested on an ongoing basis
02 Data Management Strategy	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Inventoried and understood relevant immunization and testing databases and determined that they are verifiable sources of truth <input checked="" type="checkbox"/> Engaged owners of existing immunization and testing databases and established working agreements <input checked="" type="checkbox"/> Created data management and governance process <input checked="" type="checkbox"/> Complied with all relevant national, state, and local guidelines for handling clinical information <input checked="" type="checkbox"/> Assessed data quality to identify constraints and dependencies <input checked="" type="checkbox"/> Developed strategy to mitigate dependencies and constraints <input checked="" type="checkbox"/> Communicated data management practices with public (e.g., Department of Health) and private (e.g., health care provider) stakeholders
03 Digital Health Credential Management and Development	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Created a comprehensive product roadmap outlining future product enhancements <input checked="" type="checkbox"/> Determined and put in place necessary set of technical stacks to meet product development requirements <input checked="" type="checkbox"/> Kicked-off product development using agile sprint to drive efficient development timeline <input checked="" type="checkbox"/> Prioritized product requirements for each sprint of the product development timeline <input checked="" type="checkbox"/> Designed user interfaces and flows <input checked="" type="checkbox"/> Implemented data sharing agreements and built connections to trusted data sources (e.g., immunization systems) <input checked="" type="checkbox"/> Conducted UAT to ensure all software carries out the required tasks it was designed for <input checked="" type="checkbox"/> Launched digital health credential product to the public <input checked="" type="checkbox"/> Moved to product operation and maintenance

'IMPLEMENTATION AND ADVANCEMENT' SUB-SECTION	MOVE TO THE NEXT STEP WHEN YOU'VE:
04 Customer Support Strategy	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Established multiple channels to provide customer support <input checked="" type="checkbox"/> Developed processes to receive and respond to user inquiries <input checked="" type="checkbox"/> Trained customer support staff and developed customer support documentation <input checked="" type="checkbox"/> Specified key performance indicators and feedback mechanisms <input checked="" type="checkbox"/> Activated multi-channel support strategy and deployed customer support staff
05 Public Information and Engagement Strategy	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Defined target product audience and created public information strategy that includes desired channels, partners, and technologies <input checked="" type="checkbox"/> Discussed budget parameters for user outreach <input checked="" type="checkbox"/> Generated messaging and visual content such as FAQ documentation, marketing materials for organizations and businesses, press releases, and other relevant materials <input checked="" type="checkbox"/> Identified key performance indicators and methods to measure impact on marketing activities
06 Strategic Partnership Strategy to Support New York State's Organizations and Businesses	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Conduct market analysis to determine product reach and partnership considerations (e.g., equity, geography) <input checked="" type="checkbox"/> Determined the product's strategic partners <input checked="" type="checkbox"/> Aligned partnerships with interoperability goals <input checked="" type="checkbox"/> Communicated with partners and planned launch events <input checked="" type="checkbox"/> Aided partners in the operational integration of Excelsior Pass and Excelsior Pass <i>Plus</i> <input checked="" type="checkbox"/> Supported broad community adoption

DOCUMENT SOURCES

About the Vaccine Credential Initiative	https://vci.org/about
CDC's Interim Public Health Recommendations for Fully Vaccinated People	https://www.cdc.gov/coronavirus/2019-ncov/vaccines/fully-vaccinated-guidance.html#anchor_1619526549276
Citywide Immunization Registry	https://www1.nyc.gov/site/doh/providers/reporting-and-services/citywide-immunization-registry-cir.page
Electronic Clinical Laboratory Reporting System	https://www.health.ny.gov/professionals/reportable_diseases/eclrs/
Excelsior Pass and Excelsior Pass <i>Plus</i>	https://covid19vaccine.health.ny.gov/excelsior-pass-and-excelsior-pass-plus
Excelsior Pass Materials	https://forward.ny.gov/educational-assets
Excelsior Pass User Guide	https://forward.ny.gov/system/files/documents/2021/09/ep_how-to_guide_for_businesses.pdf
Fair Information Practice Principles	https://www.dhs.gov/publication/privacy-policy-guidance-memorandum-2008-01-fair-information-practice-principles
HL7 FHIR Standards Overview	http://www.hl7.org/fhir/summary.html
List of VCI Charter Members	https://vci.org/about#members
New York State Excelsior Pass Home Page	https://epass.ny.gov
New York State Excelsior Pass Scanner application	https://forward.ny.gov/excelsior-pass-and-excelsior-pass-plus-businesses-and-organizations
New York State Immunization Information System	https://www.health.ny.gov/prevention/immunization/information_system/
New York State Trusted Issuers	https://forward.ny.gov/new-york-state-trusted-issuers
SMART Health Card	https://smarthealth.cards/
SMART Health Card Framework	https://smarthealth.cards/
SMART Health Card Technical Specifications	https://spec.smarthealth.cards/
Vaccine Credential Initiative	https://vci.org/
VCI Application Process	https://docs.google.com/forms/d/e/1FAIpQLSe8rq9u_6vYNTvFZtGeOw6V2wv6UWax8hTrnFYP5Awp7_VBzmQ/viewform
W3C Standards Overview	https://www.w3.org/TR/vc-data-model/

DOCUMENT GLOSSARY

This list references acronyms and definitions referred to in this document.

2FA	Two factor authentication	A security layer that requires an additional login credential beyond a username and password to access an account, application, or device.
API	Application programming interface	A software intermediary that enables applications to communicate with each other.
CDC	Centers for Disease Control and Prevention	CDC increases the health security of our nation. As the nation's health protection agency, CDC saves lives and protects people from health threats.
CIR	Citywide Immunization Registry	Immunization records for all children and adults who live in New York City.
DUA	Data Use Agreement	A contract that governs the exchange of specific data between two parties.
ECLRS	Electronic Clinical Laboratory Reporting System	The Electronic Clinical Laboratory Reporting System provides laboratories that serve New York State with a single electronic system for secure and rapid transmission of reportable disease information to the New York State Department of Health, county health departments and the New York City Department of Health and Mental Hygiene.
FAQs	Frequently Asked Questions	A list of common user questions and answers relating to a specific subject.
FDA	Food and Drug Administration	A federal agency of the Department of Health and Human Services responsible for protecting and promoting public health.
FHIR	Fast Healthcare Interoperability Resources	A Health Level Seven International® (HL7®) standard for exchanging healthcare information electronically. It is the next generation exchange framework being adopted by the healthcare community to advance interoperability.
FIPPs	Fair Information Practice Principles	The Fair Information Practice Principles are the framework for privacy policy at the Department of Homeland Security. The "FIPPs" provide the foundational principles for privacy policy and guideposts for their implementation at DHS.

HIPAA	Health Insurance Portability and Accountability Act	Establishes national standards for the protection of certain health information. All health care plans (e.g., HMOs, insurers), health care clearinghouses (e.g., billing services, re-pricing companies), and health care providers that transmit health information in electronic form must comply with HIPAA regulations.
HITECH	Health Information Technology for Economic and Clinical Health Act	Creates incentives related to health care information technology, including incentives for the use of electronic health record systems among providers.
Holder	N/A	A holder is the owner of a credential. They manage the credential and choose when and with whom to share it.
Issuer	N/A	An issuer will create a credential and provide it to the holder. As part of issuance, the issuer will assert the holder's claim of an identity attribute.
NYSIIS	New York State Immunization Information System	Establishes a complete, accurate, secure, real-time immunization medical record that is easily accessible.
PHI	Protected Health Information	Any identifiable information that appears in medical records as well as conversations between health care staff (such as doctors and nurses) regarding a patient's treatment.
PII	Personally Identifiable Information	Any information that permits the identity of an individual to be directly or indirectly inferred, including any information that is linked or linkable to that individual, regardless of whether the individual is a United States citizen, lawful permanent resident, or visitor to the United States.
UAT	User Acceptance Testing	A type of testing performed by end users to accept software system updates before moving the application to a production environment.
VCI	Vaccine Credential Initiative	A coalition of public and private organizations committed to empowering individuals with access to a trustworthy and verifiable copy of their vaccination records in digital or paper form using open, interoperable standards.
Verifier	N/A	A verifier is the individual who checks a credential for validity and authenticity, confirming that it belongs to the holder. Verifiers may validate the credential against a health database.