

End User Guide

DIVOC

Contents

Chapter 1: What is DIVOC?	3
1.1 Background	3
1.2 Purpose	3
1.3 Value proposition	4
2.1 Registration and appointment Module	11
a. Features	11
b. Users	11
c. User Journey	11
2.2 Certificate Module	12
a. Features	12
b. Users	12
c. User Journey	12
Workflow	18
2.3 Feedback Module	19
a. Features	19
b. Users	19
c. User Journey	19
2.4 Dashboard	22
a. Features	22
b. Users	22
c. User Journey	22

Version Control

Version	Date of Revision	Description for Change	Author	Reviewer	Approved By
1.0	Feb 10, 2021	End User Guide	DIVOC Program Management Unit	Sahaj and eGov Foundation	Dr Pramod Varma
2.0	March 1, 2021	Addition of registration and appointment module	DIVOC Program Management Unit	Sahaj and eGov Foundation	Dr Pramod Varma
3.0	3 rd April 2021	Certificate Verification component	DIVOC Program Management Unit	Sahaj and eGov Foundation	Dr Pramod Varma
3.0	June 14 th 2021	Certificate Update feature	DIVOC Program Management Unit	Sahaj and eGov Foundation	Dr Pramod Varma
3.0	June 14 th 2021	Revocation feature	DIVOC Program Management Unit	Sahaj and eGov Foundation	Dr Pramod Varma

Chapter 1: What is DIVOC?

1.1 Background

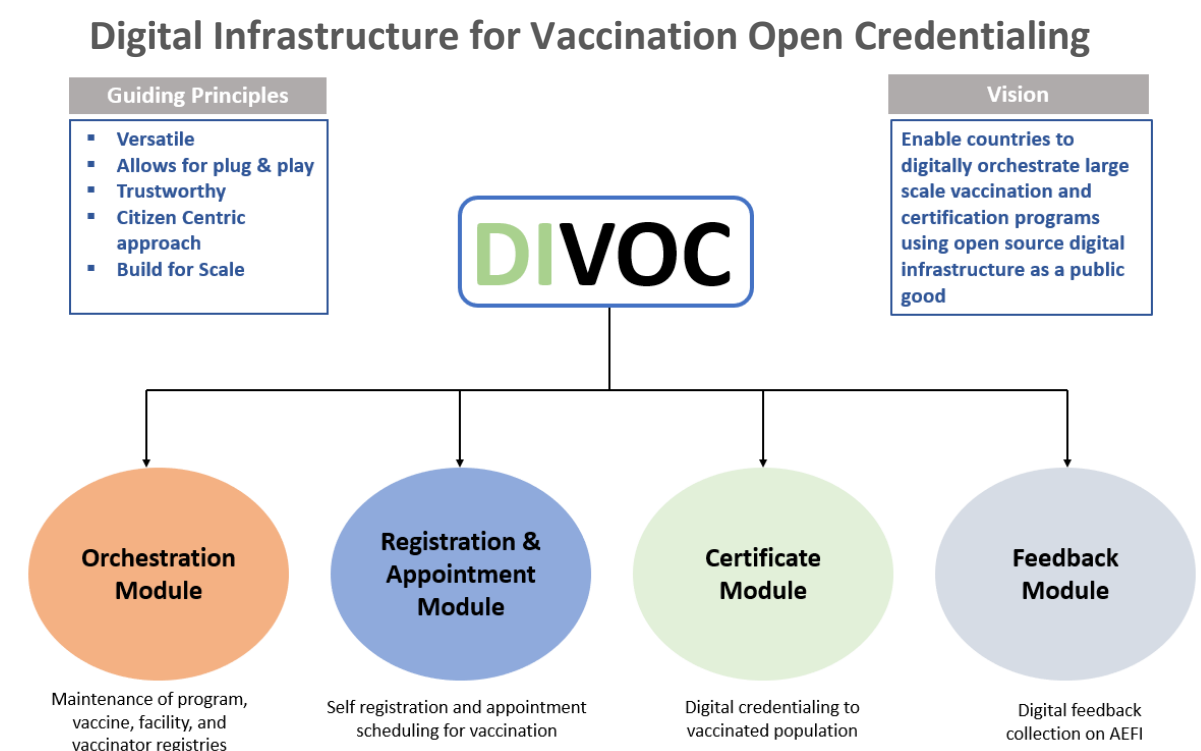
DIVOC stands for “Digital Infrastructure for Vaccination Open Credentialing”. It is a flexible and extendable open source software that helps countries to digitally orchestrate large scale vaccination efforts – through configuration of facilities, workers, vaccines etc. – as well as generate a digitally verifiable certificate. In order to drive global participation for adoption and usage, DIVOC uses open source technologies and a scalable, data driven architecture to be able to deal with diverse vaccination country-specific scenarios.

1.2 Purpose

DIVOC is a community-effort led by a team working under the guidance of Mr. Nandan Nilekani (former chairman of UIDAI) and Co-founder of Infosys, and Dr Pramod Varma (former Chief Architect of UIDAI, India).

The DIVOC initiative aims to support countries in achieving the following goals;

- i. Ability to vaccinate and certify citizens at speed and scale starting from prioritized personnel (frontline workers) to the whole country in a controlled manner.
- ii. Ability to manage the entire vaccination and certification process in a dynamic manner using near real time data.
- iii. Ability to control and manage the approved vaccine, facilities, daily rates, and vaccinators in a systematic manner across various geographies as per the availability of vaccines and other country priorities.
- iv. Issue a portable digitally verifiable certificate as per international standard to people in both digital and physical form so that they can get back to work.
- v. Ability to integrate and leverage with other systems such as vaccine supply, hospital management, ID systems, payment systems, etc.



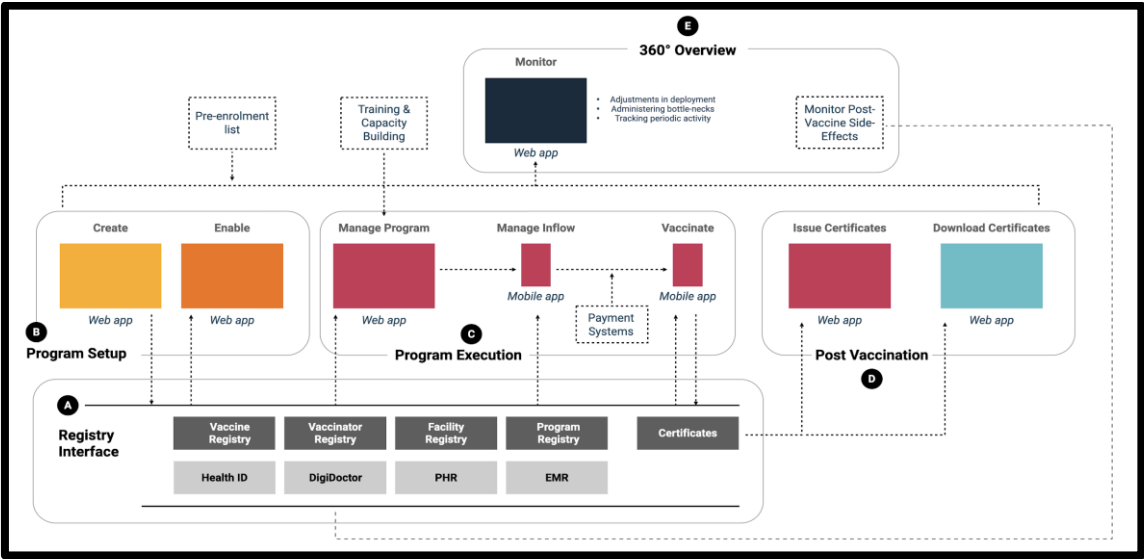
1.3 Value proposition

The key highlights of the DIVOC software are:

- i. Designed to cater to the diversity of use cases in terms of choice of facility (Government to private facilities) at various geographies within the country, choice of payment (Govt is paying, employers and other funds paying, and individuals paying), choice of IDs (digital IDs, mobile numbers, no IDs), etc.
- ii. Provides plug and play with various valid ID and payment systems and be flexible to configure the flows.
- iii. Provides individuals with a portable and verifiable digital certificate (verifiable credential based on W3C open specification and can easily be aligned to IHR standards) that they can use online and offline.
- iv. DIVOC also supports WHO's Smart Vaccination Certificate (SVC) FHIR content model that DIVOC can offer interoperability and portability for FHIR based verifier, travel pass applications. DIVOC has also enabled a transformation utility to enable FHIR based ingestion and verification of already issued W3C certificates with beneficiary authentication.
- v. Designed to plug and play with various certificate distribution schemes (printed with QR code, digital using smartphones, sms/email attachments, digital lockers, blockchain based apps, etc).
- vi. Provides high trust by design and ensure security and privacy aspects. It provides non-repudiable audits and ensures various potential frauds are eliminated by design.
- vii. Fully built as a set of microservices exposed via APIs allowing easy integration with existing systems.
- viii. Can be used fully or specific microservices (such as certificate microservice or feedback microservice) can be deployed and used independently.
- ix. Designed to work at a scale of 10 million vaccinations a day with an event driven telemetry model allowing agencies running DIVOC software to observe the entire rollout using data to make dynamic policy and operational adjustments.
- x. Highly "configurable" (vaccines, vaccination frequency, approved facilities, trained vaccinators, certificate template, authentication mechanisms, etc.) and also "extensible" (there are many parts of software that can be extended, replaced with country specific components without having to customize (allows easy upgradability).
- xi. Entire DIVOC software is made available as open source as digital public goods for any country to adopt, extend, customize, and use the way they need.

The DIVOC software has been designed to accommodate the various events occurring during the last-mile vaccine administration and certification lifecycle, as illustrated below;

DIVOC software architecture



- System Admin can perform a bulk-upload of vaccinator data, via CSV files. DIVOC provides predefined templates for Users to populate their vaccinator data, which can then be uploaded (in bulk-mode).
- DIVOC can integrate with a country's existing eHealth systems or registries (if available) via APIs, to source the facility data available in the country.
- System Admin can Activate or Deactivate Vaccinator from the system.
- Error Files in the process of Bulk Upload of data can be downloaded by the users. In case of any errors in the template, the system throws an error which can be easily identified and rectified.
- DIVOC also displays the total number of records for the record count on the vaccinator registry.
- The software sends Email / SMS triggers to the vaccinator to add associated facilities / modify any personal details / add certificates etc.

DIVOC bulk upload screen for vaccinators registry

The screenshot displays the DIVOC bulk upload interface. At the top, there's a navigation bar with tabs: Facilities, Vaccinators (active), Vaccine Programs, Vaccines, and Pre-Enrollment. A 'DOWNLOAD TEMPLATE' button is visible. The main content area is titled 'BULK UPLOAD SCREEN' and contains two sections:

1 Records in the DIVOC Vaccinator Registry

All Vaccinators

National ID	NAME	UPLOADED ON
3333333337	ram	
VAC45	Dr Vaccinator45	
87634562	sam	
7311990788	Bb4	
4365469609	BRR	
6051330355	RR	
3733879826	BRR2	
111222333	ANM-123	
234	Rashid	
87533564646	Dr Anjali Gupta P	

Rows per page: 10 1-10 of 10

Uploads History

FILE NAME	DATE	TIME	SUCCESS	ERRORS
t_vaccinator.csv	03-Feb-2021	18:45	1	0
t_vaccinator.csv	03-Feb-2021	18:44	0	1

Rows per page: 10 1-2 of 2

Facility Admin can perform the following actions;

b. Facility Admin functions

- It will be the responsibility of the Facility Admin to add/remove vaccinator details. If the country has a national registry for medical professionals, details like name, gender, age, qualifications, signatures etc can be fetched using those IDs. Admin can also add new vaccinators, provide approval to them, activate/deactivate, and manually add/edit details. Manual Add / Edit Vaccinator details with certificate
- Facility Admin can provide approval to vaccinators who will be engaged in the particular facility for vaccination.
- Facility Admin can also Search & Activate / Deactivate Vaccinator from the system.
- DIVOC Vaccinator Registry can be integrated with LMS for verification of training/certificates of the vaccinators.
- Facility Admin will be responsible for setting up the roles for each staff member in the facility. There would be front office staff, clinical staff and non-clinical staff in the facility and each of those will need to be registered by the Facility Admin and assigned specific roles in the facility. Details of staff name, role type, mobile number and employee ID will be saved in the portal.

Activation/Approval of Vaccinators in the facility by Facility Admin

VACCINATOR LIST

OPERATOR NAME	PROGRAM TRAINED FOR	CERTIFIED	SIGNATURE	STATUS	ACTIONS
sagar	-			Inactive	Make Active Edit Profile
Test User	c19			Inactive	Make Active Edit Profile

Add/Edit feature for Vaccinator Details by Facility admin*

Vaccinator Details

SAVE BACK

Personal Details

Name *
sagar

Email *
sagar@gmailcom

Mobile *
+91 8788622517

Aadhaar *
234243242324

Licence Number *
7867868687

Signature

Training & Certification

Certification (if any)
Please select Program

Certified ☐

ADD/EDIT VACCINATOR DETAILS

*Input screen

Setting up of roles in the facility by Facility Admin

ROLE SETUP

Role Type	Name	Mobile Number	Employee ID	Status	Actions
facility staff	rol1		r1	Enabled	SAVE SET RATE DELETE
facility printing staff	rol2		r2	Enabled	SAVE SET RATE DELETE

4. Create a Vaccine Program Registry

The DIVOC software offers the flexibility of accommodating any vaccine program like COVID-19, measles, influenza etc. The system admin just needs to register details of the vaccine program. The following details are to be fed in the system to add a vaccine program to the registry:

- Programs that are being rolled out – The software is not limited merely to COVID-19 vaccination programs and the user may add other vaccination programs on the portal.
- Active Status – Status for each of the programs can be set as active/inactive based on their running status.
- Allowed vaccines – User needs to add details of Vaccines approved for the vaccination program.
- Start and end dates – Start date and end date for each of the vaccine programs need to be mentioned by the user.

System Admin can perform the following actions;

- Create a New Vaccine/Immunisation Program by adding details like name, description of the program, adding a program logo, setting start and end date and adding approved vaccines.
- View and have the option of Editing Program Details which have already been added to the system in cases of any changes to the programs.
- Activate or Deactivate Vaccination Programs by changing their status while editing program details.

Setting up of Vaccination Programs by System Admin

The screenshot displays the DIVOC web interface for managing vaccine programs. The top navigation bar includes 'Facilities', 'Vaccinators', 'Vaccine Programs' (selected), 'Vaccines', and 'Pre-Enrollment'. A 'LOGOUT' link is in the top right corner. The main content area is divided into two panels. The left panel, titled 'Register New Vaccine Program', contains a form with the following fields: 'Program Name*' (text input), 'Program Description*' (text input), 'Program Logo' (image upload area), and 'Vaccine' (dropdown menu). The right panel, titled 'List of Registered Vaccine Programs', shows two active programs: 'c19' and 'sars-1'. Each program card includes a 'C-19 PROGRAM' icon with a green checkmark and a 'More Details ->' link. A red rectangular box highlights the entire content area, and the text 'SETUP VACCINE PROGRAMS' is written in red at the bottom right of the box.

5. Create a Vaccine Registry

In the vaccine registry, details of various vaccines which have been approved by the country's Government authority will be saved. The vaccine registry includes the following details:

- Approved vaccines – Details of only the approved vaccines that can be administered to the recipients will be added to the system.
- Status – User has to choose from the options of active/inactive/blocked status for each of the vaccines that they add to the system for a vaccination program.
- Vaccination Method – User has to choose from the list of vaccine administration methods. Vaccines may be administered in many ways including oral, nasal, muscular and the user should define that for each vaccine.
- Vaccination schedule – User should define the total number of doses and schedule for each subsequent dose in the system
- Max retail price – Price for each vaccine can also be defined on the system. This will help fetch data in case of on-spot registrations and payment made by the recipients in walk-in cases.

System Admin can perform the following actions;

- Add New Vaccine by adding details like name, manufacturer, administration method etc.

- View and have the option of Editing Vaccine Details which have already been added to the system.
- Activate or Deactivate vaccinates by changing their status while editing vaccine details.

Addition of approved Vaccines by System Admin

The screenshot shows the DIVOC web interface. At the top, there's a navigation bar with 'Facilities', 'Vaccinators', 'Vaccine Programs', 'Vaccines' (selected), and 'Pre-Enrollment'. A 'LOGOUT' link is in the top right. The main content area is divided into two panels. The left panel, titled 'Register New Vaccine', contains form fields for 'Name of Vaccine / Medicine*', 'Manufacturer*', 'Administration Type' (a dropdown menu currently showing 'muscular injection'), and 'Schedule Details' with a 'Repeat times' field. The right panel, titled 'List of Registered Medicines / Vaccines', displays two vaccine cards: 'cowin' (green background) and 'sars' (yellow background). Each card has a 'LOGO' placeholder, a green checkmark, and a 'More Details ->' link. A red rectangular box highlights the 'Register New Vaccine' form and the 'List of Registered Medicines / Vaccines' section. In the bottom right corner of this red box, the text 'ADD APPROVED VACCINES' is written in red.

5. Beneficiary Pre-enrolment

In order to carry out phase-wise vaccination within the country, if the Government has identified a group of priority beneficiaries for COVID 19 vaccination, such data of beneficiaries can be uploaded in the pre enrolment registry. This list will have the following details:

- Identified population group – Details of the pre-defined population group can be added by the user on the system. This helps in easy identification and enrolment of recipients for phase wise vaccination program, eg. data on front line workers, medical professionals etc.
- National ID – Users must add national identification proof of the recipients for authentication and verification at the time of vaccination.
- Secondary identifiers – Other identifiers like DOB, age, gender and phone number of the recipients are added in details for unique identification.

System Admin can perform the following actions:

- Bulk-upload of vaccinator data, via CSV files. DIVOC provides predefined templates
- Bulk-upload of citizen data, via CSV files. DIVOC provides predefined templates for System Admin to populate their citizen data, which can then be uploaded (in bulk-mode).
- Integrate with a country's existing eHealth systems or registries (if available) via APIs, to source the facility data available in the country.
- Add Citizens to the registry by manually entering their details on the system. The system also provides the feature of editing citizen details.
- Error Files in the process of Bulk Upload of data can be downloaded by the System Admin. In case of any errors in the template, the system throws an error which can be easily identified and rectified.
- Email / SMS trigger to the beneficiary - Once they are registered, an SMS can be sent to those pre-enrolled beneficiaries along with pre enrolment code, facility and vaccination details.

Bulk upload of pre-enrolment list by System Admin

The screenshot shows the DIVOC Pre-Enrollment Registry interface. At the top, there are navigation tabs: Facilities, Vaccinators, Vaccine Programs, Vaccines, and Pre-Enrollment (selected). A 'DOWNLOAD TEMPLATE' button is visible. Below the tabs, a red box highlights the '12 Records in the DIVOC Pre-Enrollment Registry' section. This section contains two tables: 'All Pre-Enrollments' and 'Uploads History'.

All Pre-Enrollments Table:

National ID	NAME	UPLOADED ON
234234234234	kiran	
234234234234	kiran	
234234234234	kiran	
234234234234	kiran	
234234234234	Rahul	
234234234234	Rahul	
121212121212	Meera K	
232323232323	Raj Dhingra	
234234234234	kiran	

Uploads History Table:

FILE NAME	DATE	TIME	SUCCESS	ERRORS
MyPreEnrollmentList.csv	03-Feb-2021	22:33	2	0
t_enrollments 2.csv	03-Feb-2021	18:49	1	0
t_enrollments.csv	03-Feb-2021	18:48	0	1
blr_enrollments.csv	03-Feb-2021	14:20	3	0
enrollments.csv	03-Feb-2021	11:57	3	0
enrollments.csv	02-Feb-2021	11:47	1	0
enrollments.csv	02-Feb-2021	11:04	1	0
enrollments.csv	02-Feb-2021	11:03	1	0

A red text label 'BULK UPLOAD' is overlaid on the 'Uploads History' table. At the bottom, there are pagination controls: 'Rows per page: 10' and '1-9 of 9'.

SMS notification sent to pre-enrolled recipients

The screenshot shows a mobile phone screen with an SMS notification from 'DIVOCNOT'. The notification text is as follows:

Vivek Singh, you have been registered to receive the C-19 vaccine. Please proceed to the nearest vaccination centre:

[Gwp0,7&lsg=AB86z5DQxxz](#)

Please show this Pre Enrolment Code: **12345** to the centre admin.

A red text label 'SMS TO PRE-ENROLLED RECIPIENTS' is overlaid on the bottom of the notification. The phone's status bar at the top shows the time as 10:29 and battery level at 39%.

2.1 Registration and appointment Module

a. Features

Registration and appointment module give the citizens of the country an option of registering themselves for the country's vaccination drive. Key features of the module are:

- Selection of vaccination program running in the country for which recipient wants to register for like COVID, Measles etc.
- Mobile number and OTP based registration
- Eligibility check based on the age group defined by the country for vaccination
- Citizen registration for self and 3 more members with a single mobile number
- Selection of co-morbidities, if any
- Feature for selecting nearest health facility using Pin code
- Feature for choosing date and time slot as per recipient's convenience and availability in the facility
- Feature to delete appointment

b. Users

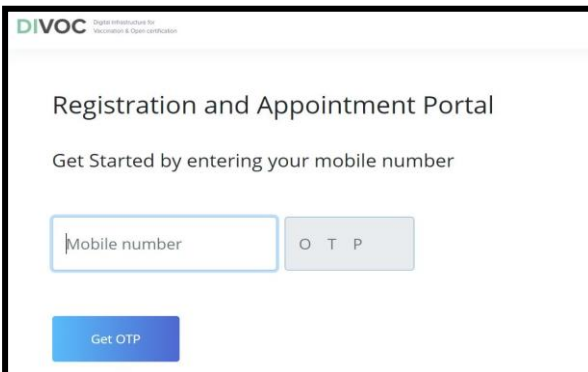
Registration and appointment module will be used by country's citizens eligible for vaccination. The Government may define age groups for phase wise vaccination and only citizens falling in the defined age group can register and seek appointment in that vaccination phase.

c. User Journey

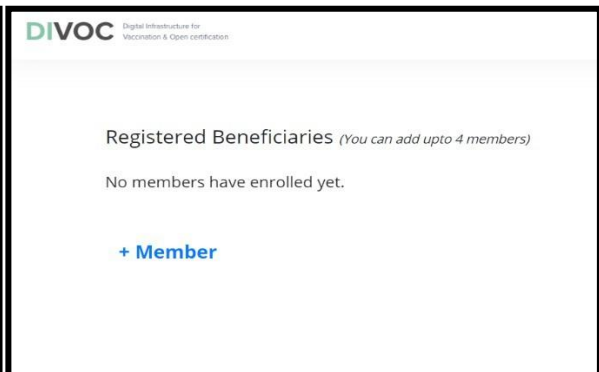
i. Registration

1. Citizens can log in to the registration portal by entering their mobile number and OTP received on the same mobile number. Citizens can add up to 4 members using the same registered mobile number.

Login page



Add up to 4 members



2. Citizens can check the eligibility for vaccination by entering their year of birth. If the country's Government chooses to define age groups for vaccination during a particular phase, the system can configure these requirements and allow registration only for the defined age group.

2.2 Certificate Module

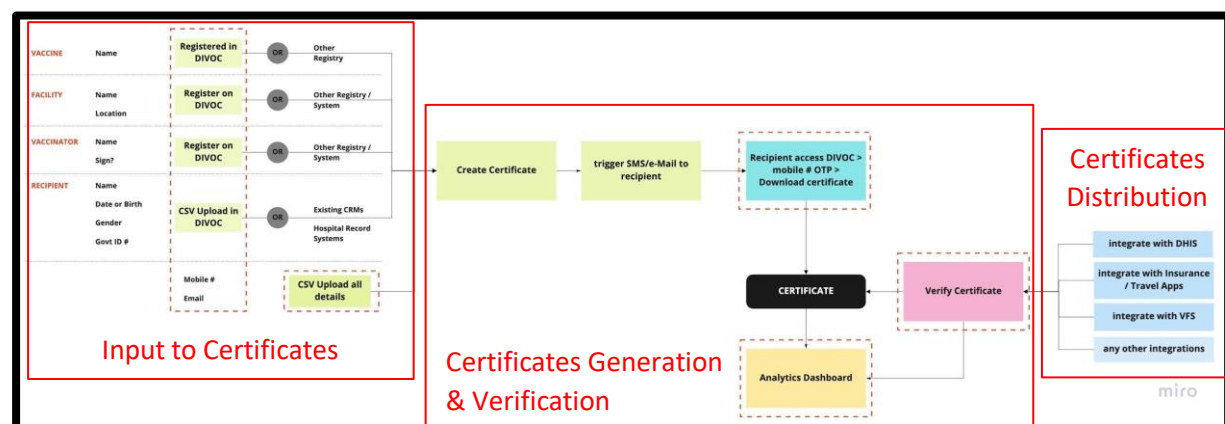
a. Features

DIVOC certificate module has the ability to generate WHO's FHIR SVC and W3C verifiable credentials compliant digital vaccination certificates, for every resident after successful inoculation. This certificate will be a simple QR code that can be easily accessed/scanned from an individual's mobile phone, and which can be used by country authorities to independently verify the individual's current COVID-vaccination status.

Features of the digital vaccination certificate are:

- Conforming to WHO/IHR guidelines based on W3C verifiable credential specifications
- Conforming to WHO's FHIR SVC specification for global portability and interoperability
- Accommodates syntax and semantic codifications
- Authenticity verifiable via digitally signed QR code
- Available digitally on smartphone with QR code
- Printable for non-smartphone users
- Multilingual templates (for data and layout)
- Ability for users to download/print after vaccination either at facility or from home in self/assisted modes
- Integrable to health Lockers and certificate lockers
- Easy integration with immunization e-registry

Credential Module Overview



b. Users

Following users can access the DIVOC certificate module:

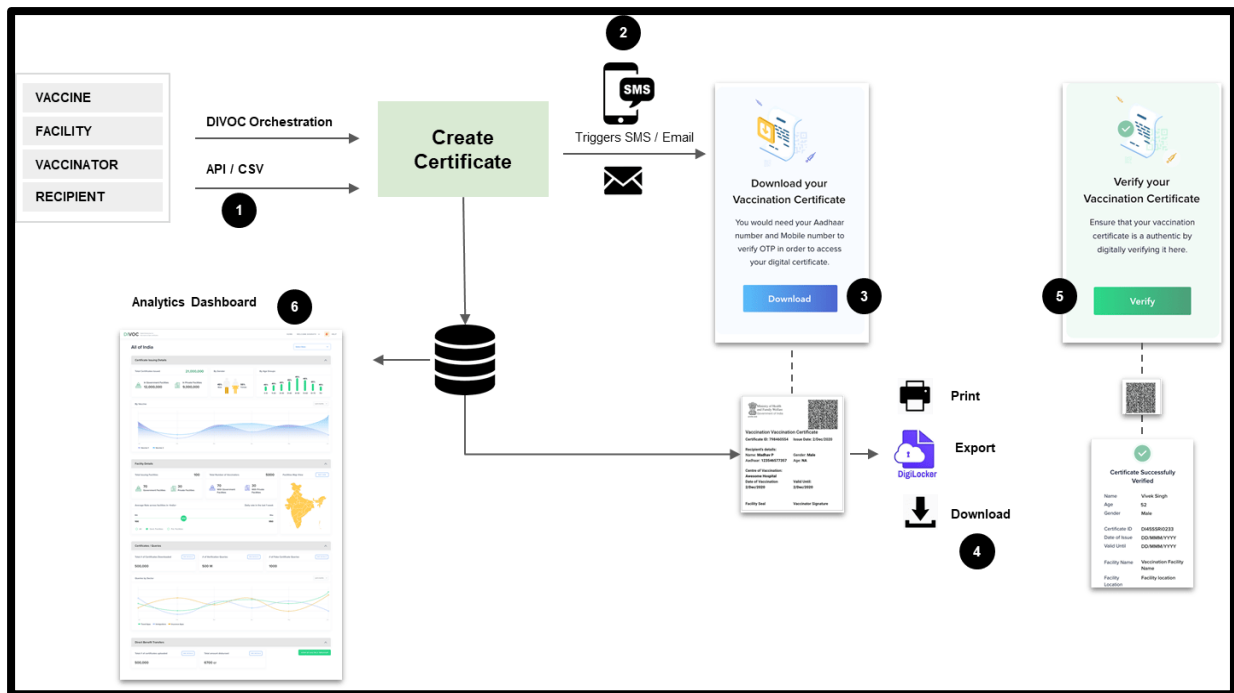
- Facility Print Staff can access the Certificate module to generate certificate post vaccination.
- Vaccinated recipients can access the certificate module through DIVOC public portal for download and verification of digital certificate issued post vaccination.

c. User Journey

System Flow

This section covers following user flow of Credential module:

Certificate Input and Generation by Facility Staff



Facility Print Staff can perform the following actions:

1. Login

Facility Print Staff can log into the DIVOC certificate module, via a simple mobile-based authentication process. The Staff can provide his/her mobile number, upon which a one-time password (OTP) will be generated and sent to his/her mobile. The Staff can enter this OTP to successfully log into the DIVOC Facility application.

Certificate module login page

2. Certificate Input

i. Input for the certificate can be provided in four separate methods:

- Fetching data from DIVOC Orchestration Module once the vaccination has been completed
- Using API Call from any other parallel application
- Manual CSV upload of beneficiary data who have been administered the vaccine
- Manual Form Entry of each beneficiary who have received vaccination

ii. The Certificates templates are configurable (logo, language etc.)

iii. Following are the Sample Inputs for Certificate generation

- Recipient Details (Name, Gender, Age, Aadhaar (or any National ID))
- Centre of Vaccination with Facility Seal
- Vaccinator Details with Signature
- Date of Vaccination
- Validity of Certificate

3. Generate certificate

On generation of Certificate based on provided inputs, facility staff can access the list of vaccinated recipients and print certificate

List of vaccinated recipients and certificates issued

Enrolment ID	Name	Gender	Print receipt	Print certificate
1-4370f6c9-350a-4287-afed-9a1c57479d8c	Aditi Musunur	Female	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1-e41597a4-43bb-4de3-b1d0-55faf4c65849	Savitri Morar	Female	<input type="checkbox"/>	<input type="checkbox"/>
1-06380349-819b-468e-816a-e7994c6dad98	Sonam Sankaran	Female	<input type="checkbox"/>	<input type="checkbox"/>
1-5d012f81-122a-4271-ba32-f23b7edd204b	Bdya Mitra	Male	<input type="checkbox"/>	<input type="checkbox"/>
1-b8cd331d-239d-4fbc-bba0-6595cbda7c33	Chaya Mitra	Female	<input type="checkbox"/>	<input type="checkbox"/>
1-9381e683-45bb-424c-a5d9-26cb2bbbc0cc	Ravi Murthy	Male	<input type="checkbox"/>	<input type="checkbox"/>
1-463abb24-1c63-4cc3-b18e-f23c7b9efd13	Jaya P	Female	<input type="checkbox"/>	<input type="checkbox"/>

Certificate Count
Certificates Issued: 8
[Print Certificate](#)

CERTIFICATE PRINTING

Recipient can perform the following actions:

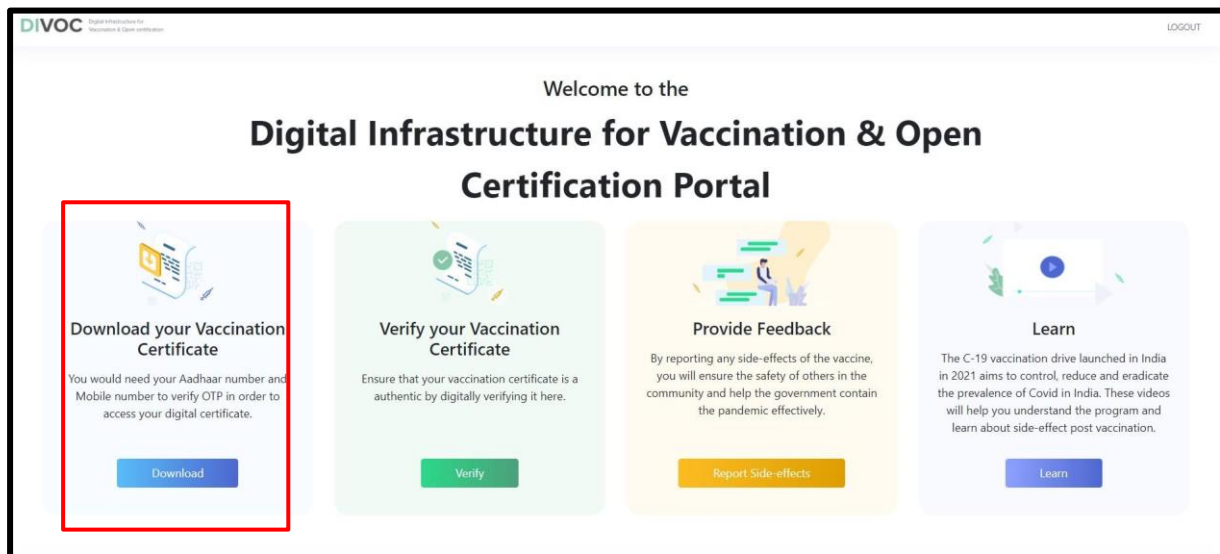
i. Download Vaccination Certificate

DIVOC provides a public portal that allows vaccination recipients to view and download their certificate. Recipients can access the DIVOC public portal and download vaccination certificates in image, SVG and verifiable certificate formats. The certificate can also be exported to platforms like national document repositories or personal health records for hassle free travelling. The recipients also have an option of printing the certificate.

Following is the user flow for recipients to access their digital vaccination certificate:

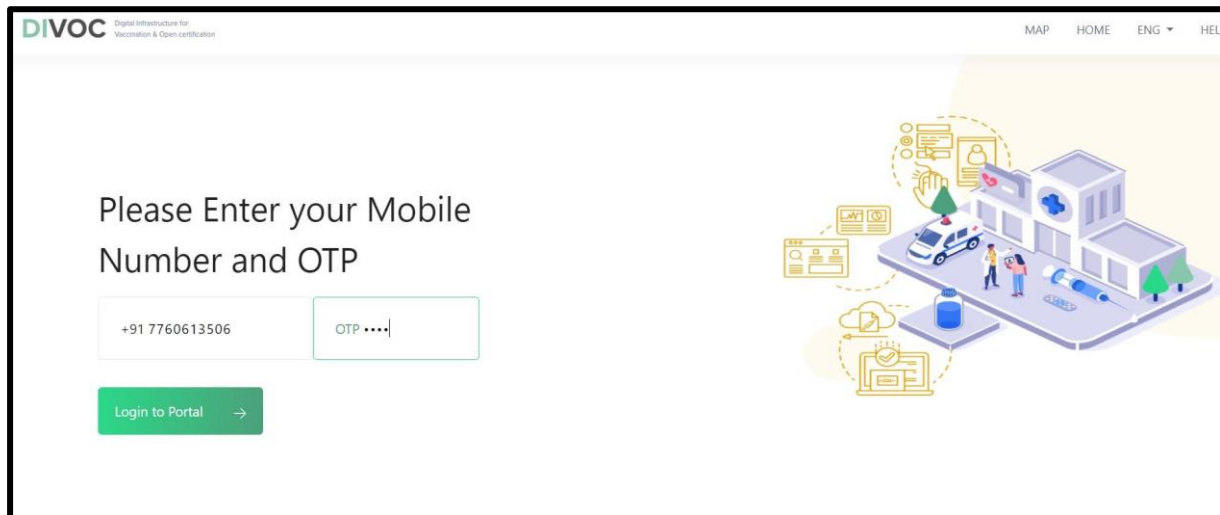
- On generation of Certificate based on provided inputs, system will trigger and send Email/SMS to recipient to Print / Export / Download it
- The Generated certificate will have QR code for its verification and confirmation
 1. Recipients can access DIVOC public portal
 2. Click on Download Certificate

Public portal landing page for certificate download




3. Enter Mobile Number and OTP

Mobile number login page for vaccinated recipients accessing vaccination certificate



4. Click on Print or Download Certificate
5. On Click, Certificate will be available to Download/ Upload to Document repository/Print

Sample Covid-19 vaccination certificate

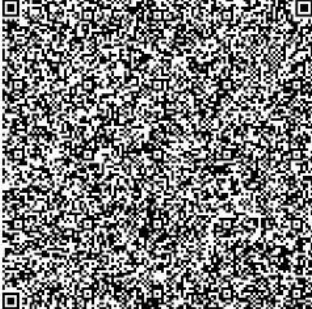


COUNTRY
LOGO

Provisional Certificate

for COVID-19 Vaccination

(1 st Dose)



Beneficiary Details

Beneficiary Name / लाभार्थी का नाम

Anjali

Age / उम्र

33

Gender / लिंग

Female

ID Verified / पहचान पत्र सत्यापित

Beneficiary Reference ID

1612783368663

Residing at / पता

Delhi, Delhi

Delhi

Vaccination Details

Vaccine Name / वैक्सीन का नाम

covin

Date of Dose / खुराक की तारीख

08 Feb 2021 (Batch no. 12345)

Next Due Date / अगली नियत तिथि

after 28 days

Vaccinated by / टीका लगाने वाले का नाम

Test Vaccinator one

Vaccination at / टीकाकरण का स्थान

Delhi Hospital 1, Delhi

Delhi

PROGRAM
LOGO

Lorem ipsum dolor sit amet, consectetur adipiscing elit. sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
Call Helpline Number 0000

भारत सरकार द्वारा एनोटेड, सॉल्यूटेड एडमिनिस्ट्रेशन एजेंसी, सेवा प्रदाताओं और जीवन शक्ति, तमिल नाडु और द्रुम, कुछ महत्वपूर्ण चीजों के संसाधन को।
हेल्पलाइन नंबर 0000 पर कॉल करें

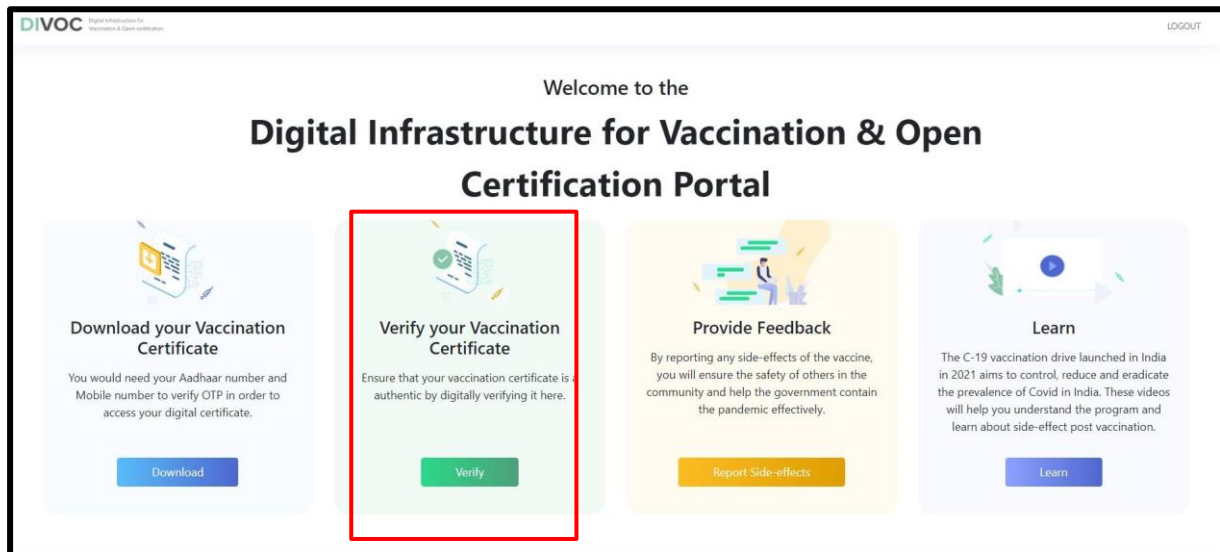
ii. Verification of Vaccination Certificate

Recipients with no mobile number can provide feedback to the nearest facility where the staff would verify the recipient's identity using the verify feature and scanning the QR code provided on the certificate. On successful verification, recipient details will be displayed on the screen and in case of unsuccessful verification, a message will be shown as “Certificate invalid”.

Recipients can verify downloaded/printed certificate using QR code on the certificate by performing the following actions:

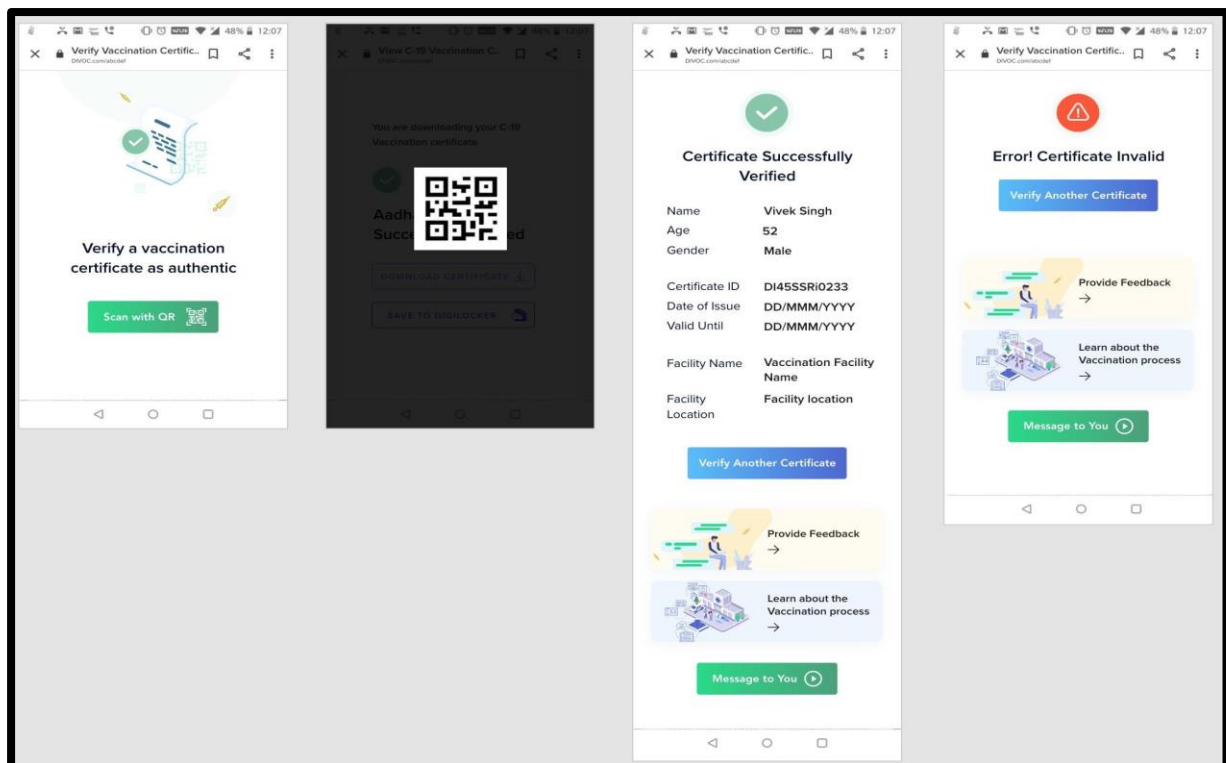
- Recipient can access DIVOC public portal
- Click on Verify Certificate

Public portal landing page for certificate verification



- Scan the QR Code
- On Successful verification, Certificate details will be shown on screen
- On Un successful verification, message will be shown as “Certificate Invalid”

Certificate Verification process followed by vaccinated recipients



- Verification of the Certificate can be done by other 3rd party systems, by consuming the Verification API.

iii. Certificate Correction Feature

The certificate correction feature has been developed to help beneficiaries make changes in the certificate, if any information was captured wrongly during the registration process. A beneficiary with proper mobile OTP authentication can make corrections in their Name, Date of Year/Birth, gender, photo ID number). Country can configure the required workflow and fields enabled for updation as per their policy. For example: For Indian implementation a beneficiary can update any of the two parameters with valid documentation proof.

A country can enable a self-service portal or a call centre based approach for enabling certificate correction requests. Once the certificate is edited a updated certificate with new unique certificate ID is issued that can be printed or stored digitally by the beneficiary.

Workflow:

1. Citizen can visit DIVOC portal as published by the Government and clicks on “Sign in yourself”
2. Citizen enters the mobile number used for registration and enters OTP received on the same mobile number
3. Citizen can view the details of members added to the registration portal and clicks on “Update Certificate” tab in front of the member’s details
4. The request for updation of details in the certificate will be initiated with an OTP authentication for each update request as a gatekeeping mechanism
5. Once the OTP is verified, the screen will display the certificate fields with an “Update” icon in front of name, age, gender and beneficiary ID number
6. Citizen will update the required change.
7. As per the country’s policy on updation citizen can provide supporting documents for requested change.
8. Country can setup an auto approval updation for certain fields or even can implement a verification and update workflow that can be handled by an authorized party.
9. Once the request is submitted & approved, new certificate will be generated, and an SMS notification will be sent to the registered mobile number about the updated change.

iv. Certificate Revocation Feature

“Revocation” by definition means an act of official cancellation or recall of a decree, promise, decision or a document. In this case it is an official cancellation of a vaccination certificate that was issued by Government’s vaccination (CoWIN) platform as a digitised proof of a vaccination event for a citizen.

The revocation service will help vaccination program stakeholders to manage the revocation workflow and revoked certificates within the immunization registry. This service will also help in notifying the verifiers about the revoked certificates, as DIVOC/CoWIN will maintain a revocation list for verifiers to validate from.

A digitally verifiable vaccine certificate can be revoked under multiple circumstances that may include-

1. Updation or correction of a vaccine certificate
2. Cancellation by the issuing authority for an administrative/quality reason (Example- A batch of vaccine with compromised quality)

Workflow

1. A revocation flow is triggered when a beneficiary gets his/her vaccine certificate updated via DIVOC’s correction service.
2. In this case when the details are updated for the beneficiary, the old certificate that was issued/downloaded will be revoked, which means will be no longer valid as a vaccination proof. Instead a new certificate will be issued with beneficiary’s updated credentials and new unique certificate ID linked to the beneficiary’s reference ID (Beneficiary registration ID).
3. The certificate module will maintain a list of all the revoked certificates.
4. The signed JSON of all revoked certificates will be maintained by DIVOC’s immunization certificate registry. The revoked JSONs then can be indexed in a chronological order against the respective unique certificate ID.

5. The revoked list will be regularly updated to support the verification flow by government approved verifiers.
6. On scanning a revoked certificate, the verifier app will call the APIs provided by the DIVOC's revocation service to query the immunization registry with the certificate ID and other time stamp details to check the current certificate status.
7. If the certificate was revoked, the same information will be provided to the verifier app in real time, so that on scanning the verifier app will identify it as an "invalid certificate".
8. Revocation list will support both offline and online verifications flows. But to ensure correctness of the certificate in an offline mode of verification, the entire revoked list will be required to be downloaded in the local system to query at the time of verification.

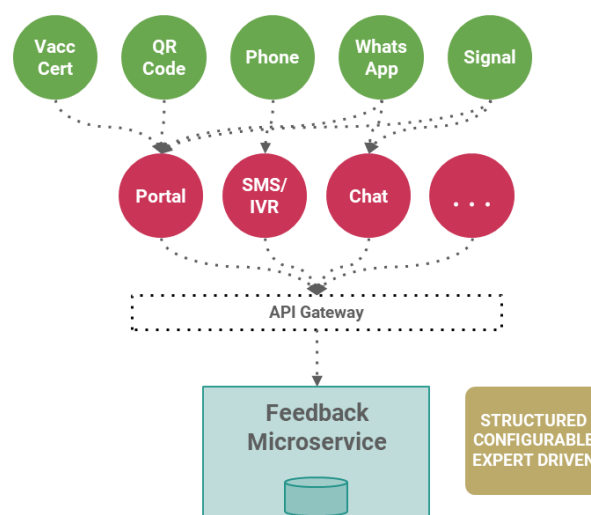
2.3 Feedback Module

a. Features

Feedback module offers a resident-reporting portal for a country's population to self-report feedback on the vaccination episode. This will entail choices for a resident to report feedback on the vaccinator who performed the inoculation, the facility where the inoculation was performed, whether there are any side effects from the vaccination, and so forth. In future, this module is also planned to be upgraded, to accommodate in-facility reporting of feedback by the vaccinator (i.e. whether there are any side effects on the resident when he/she is still in the facility). This module will also have open interfaces to integrate with a country's existing AEFI reporting systems.

Key features of the feedback module are:

- Structured feedback
 - Configurable and expert driven
- Feedback Types
 - Vaccination response feedback
 - Facility/Vaccinator rating & feedback
- Multi-channel and multi-lingual
 - Public portal, inbound SMS, IVR, WhatsApp, other apps via API
 - Multiple languages
- Self-service and assisted modes
- Integrable with AEFI systems and processes



b. Users

Feedback module can be accessed by recipients who have received vaccination. This will help health authorities in tracking the adverse reactions of the vaccine based on the feedback provided by vaccine recipients.

c. User Journey

The module works Independently and can integrate with other modules of DIVOC or any external application/portal/system.

Post vaccine administration, recipients might experience unforeseeable side effects from the vaccines. In order to monitor such cases, the feedback module can be used to track symptoms faced by recipients. They can choose amongst a list of commonly known symptoms configured in the system or add any additional ones and confirm the symptoms. Recipients can log in to the portal using mobile number and OTP and submit their details so that the nearest healthcare facility can be notified of the recipient's details for further steps. In case the recipient needs to contact the facility, such contact details can also be provided to the recipient on the same portal.

The steps to be followed by the vaccinated recipients while accessing the feedback module are as follow:

1. Log in

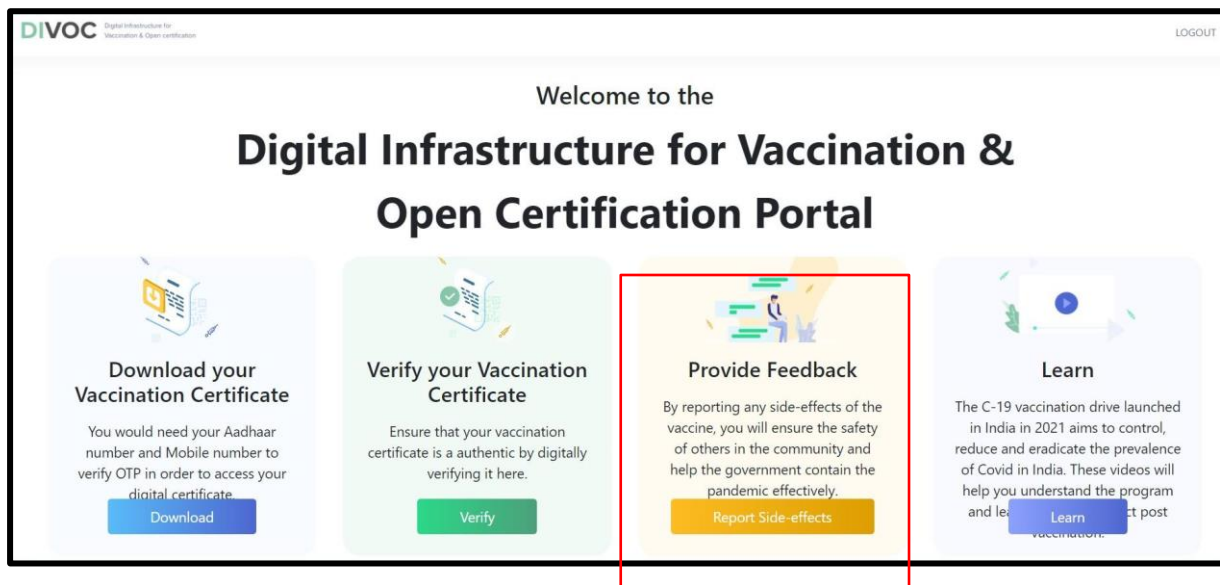
Recipients can log into the DIVOC feedback module, via a simple mobile-based authentication process. The recipient can provide their mobile number, upon which a one-time password (OTP) will be generated and sent to the mobile. The user can enter this OTP to successfully log into the DIVOC Facility application.

2. Provide feedback

In order to provide feedback on the vaccination experience, the Recipients can perform the following actions:

- Choose Provide feedback on DIVOC homepage
- Click on Report side effects
- A page will be displayed with a list of symptoms like fever, cough, fatigue etc. that users can choose from. Once the symptoms have been selected, press “confirm”

Public portal landing page for feedback on vaccination



Reporting of side-effects post vaccination by vaccinated recipients

Provide Feedback

By reporting any side-effects of the vaccine, you will ensure the safety of others in the community and help the government contain the pandemic effectively.

Report Side-effects

Select Symptoms

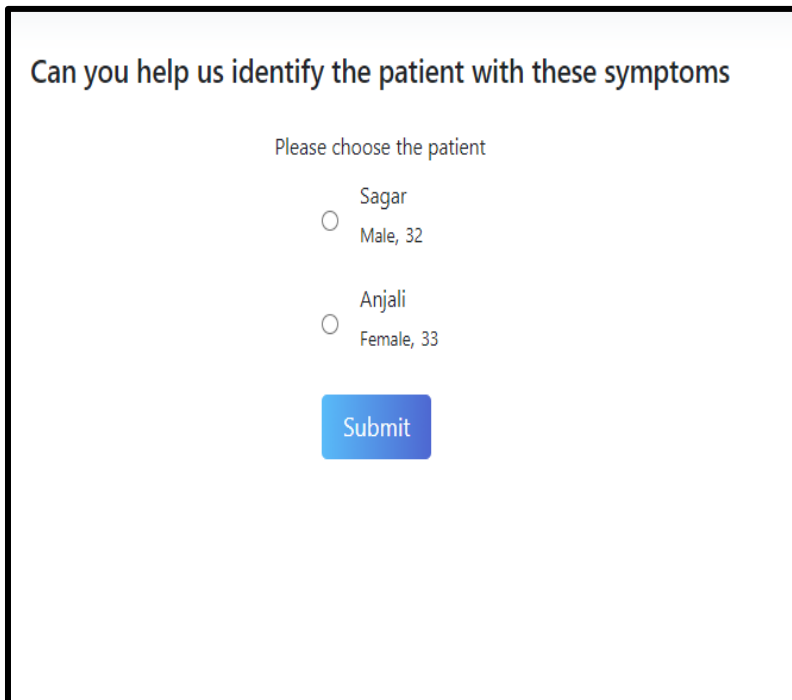
Temperature 90

90°F 108°F

Arm Soreness	<input type="checkbox"/> No
Chills	<input type="checkbox"/> No
Cough	<input type="checkbox"/> No
Fatigue	<input type="checkbox"/> No
Flu-like symptoms	<input type="checkbox"/> No
Headache	<input type="checkbox"/> No
Migraine	<input type="checkbox"/> No

- On confirmation of symptoms, a login page will be displayed where users can login using their mobile number and OTP.
- On successful login, a patient verification page will be displayed, and users can choose amongst list of patients and confirm submission after verifying details
- Once the patient has submitted the feedback, a notification to the healthcare facility where the patient was vaccinated will be sent. The screen displays details of the nearest health facility that the patient can visit in cases of emergency and extreme symptoms.

Patient identification on feedback module



Can you help us identify the patient with these symptoms

Please choose the patient

☐ Sagar
Male, 32

☐ Anjali
Female, 33

Can you help us identify the patient with these symptoms

Name	Anjali
Age	33
Gender	Female
Certificate ID	723903368
Date of Issue	2021-02-08
Valid Until	2021-03-08
Dose	1
Total Doses	2
Vaccination Facility	Delhi Hospital 1

☒ I confirm that this patient is having the identified symptoms

Confirm Patient

2.4 Dashboard

a. Features

DIVOC Dashboard is a performance monitoring dashboard giving details on day to day vaccination. The dashboard gives details at National level, State level and Facility level. The dashboard has the following features:

- Heat Map showing the number of vaccinations happening across the country with state and district-wise drill down features.
- Number of certificates generated on a daily basis
- Performance Monitoring through various reports on vaccination by state, gender and vaccine type
- Highlights Vaccination Rate based on each hour each day
- Feedback tracker with feedback received from the recipients

b. Users

Dashboard can be accessed by the Management users and Government authorities at various levels (National level, State level and Facility level) who can make decisions based on dashboard analysis.

Dashboard is also available to be viewed by citizens for information on vaccination numbers in the country.

c. User Journey

This module gives a dashboard on vaccination details which can be drilled down and based on user level dashboard will be visible to the users.

Users can log into the DIVOC dashboard using the management portal, via a simple mobile-based authentication process. The user can provide his/her mobile number, upon which a one-time password (OTP) will be generated and sent to his/her mobile. The user can enter this OTP to successfully log into the DIVOC Facility application.

Login page for DIVOC dashboard



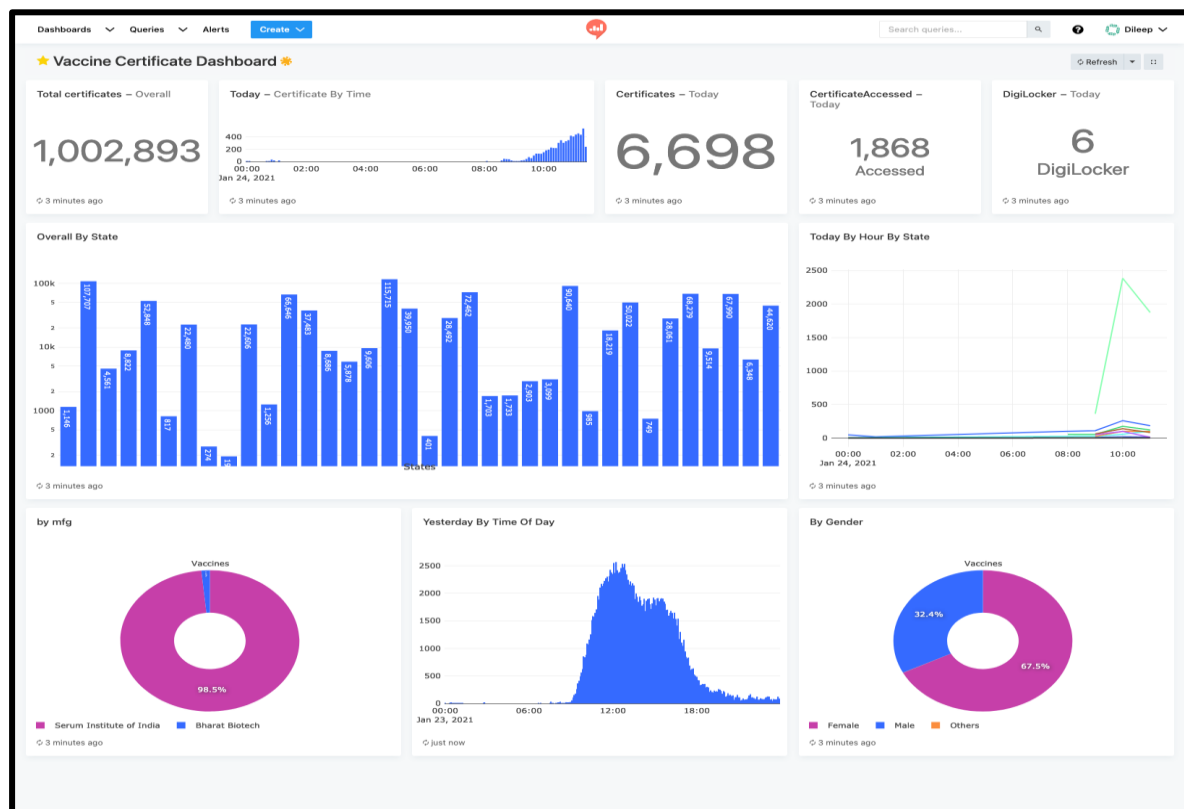
The login page for the DIVOC dashboard features a clean, white background with a light blue header. The header includes the DIVOC logo and navigation links for MAP, HOME, and ENG. The main content area is divided into two sections. On the left, there is a text prompt 'Please Enter your Mobile Number and OTP' followed by a text input field containing '+91 XXXXXXXXXX' and a green 'Get OTP' button. On the right, there is a colorful illustration of a medical facility with a building, a car, and people, surrounded by icons representing various services like a pharmacy, a clinic, and a hospital.

The dashboard gives reports on the following:

1. Certificate issuing details – gender, age group, date, region
2. Certificate download details – date-wise download, verification and invalid verification
3. Facility details – total issuing facilities, total number of vaccinators and average rate across facilities

It helps the authorities in Planning Immunisation Drive, determining fund utilisation and carrying out real time monitoring of Vaccines efficacy.

DIVOC dashboard



Analytical Dashboards on Generated Certificates:

- DIVOC provides details on Certificate generation and its distribution for further analysis on following indicators
 - a. Region (Geographical)
 - b. Gender / Age
 - c. Type of Facility
 - d. Fund Type
 - e. Other
- Users can Drill Down and based on User level dashboard will be visible for detailed analysis of certification generation across the country. An illustrated use case for India has been depicted below.

Illustrative geographic drill down feature on DIVOC dashboard