Country Adoption Playbook

DIVOC

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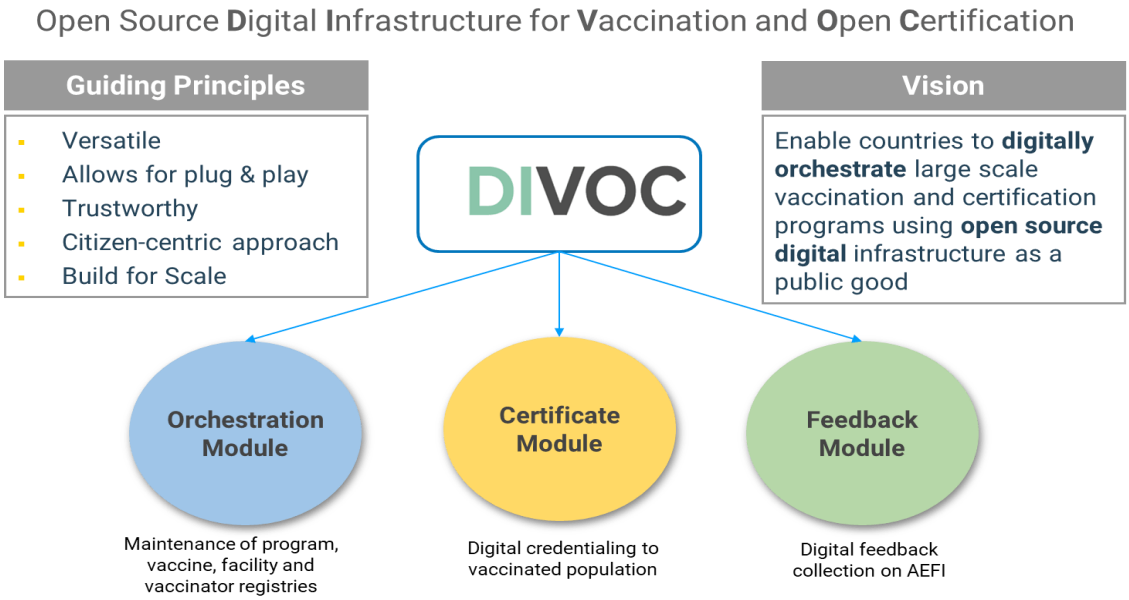
Chapter 1: About DIVOC

DIVOC stands for **D**igital **I**nfrastructure for **V**accination and **O**pen **C**ertification, it is an **open source platform** for facilitating the last mile delivery of **COVID-19 vaccination**

It includes the following:

- Digital orchestration of rollout
- Certificate issuance
- Post-vaccination feedback



1.1 Background

DIVOC is a community-effort led by eGovernments Foundation ("eGov", a not-for-profit organization that has developed DIVOC as an open-source, flexible and extensible software, designed to facilitate orchestration and certification of large-scale vaccination including but not limited to scope listed in the document below using open-sources technologies and a scalable, data driven architecture), 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). DIVOC is a part of eGov's "DIGIT" open-source digital infrastructure provisioned for Governments to streamline public governance and administration.

Ability to **vaccinate and certify** the entire population at **speed and scale** in a controlled manner.

To manage the entire vaccination process by **leveraging existing ecosystems** and source of funds in a unified manner

To **control and manage** the approved medicine, its supply, facilities, operators, geographies of operation and the daily vaccination rate as per the supply of vaccines and the country's priorities.

To facilitate the above using a **digital backbone** in a seamless, efficient, auditable and a trustable manner, keeping choice, privacy and security in mind.

Issue a portable **digitally verifiable certificate** to citizens so that they can get back to work.

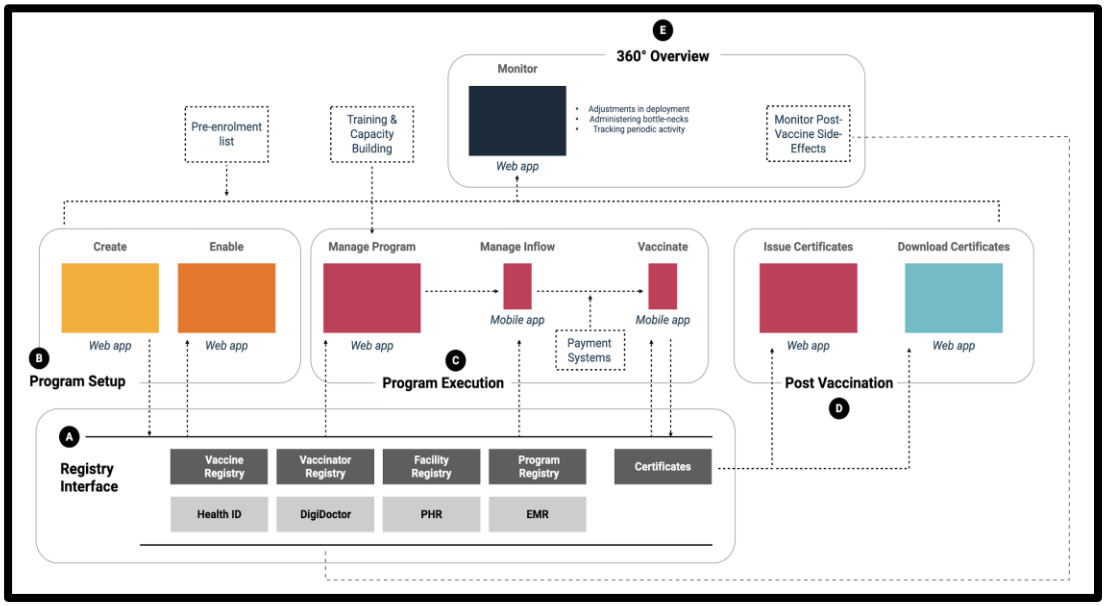
Obtain operational and **post vaccination feedback** in self-service and assisted modes

1.2 What DIVOC offers

As explained earlier, DIVOC offers three key modules;

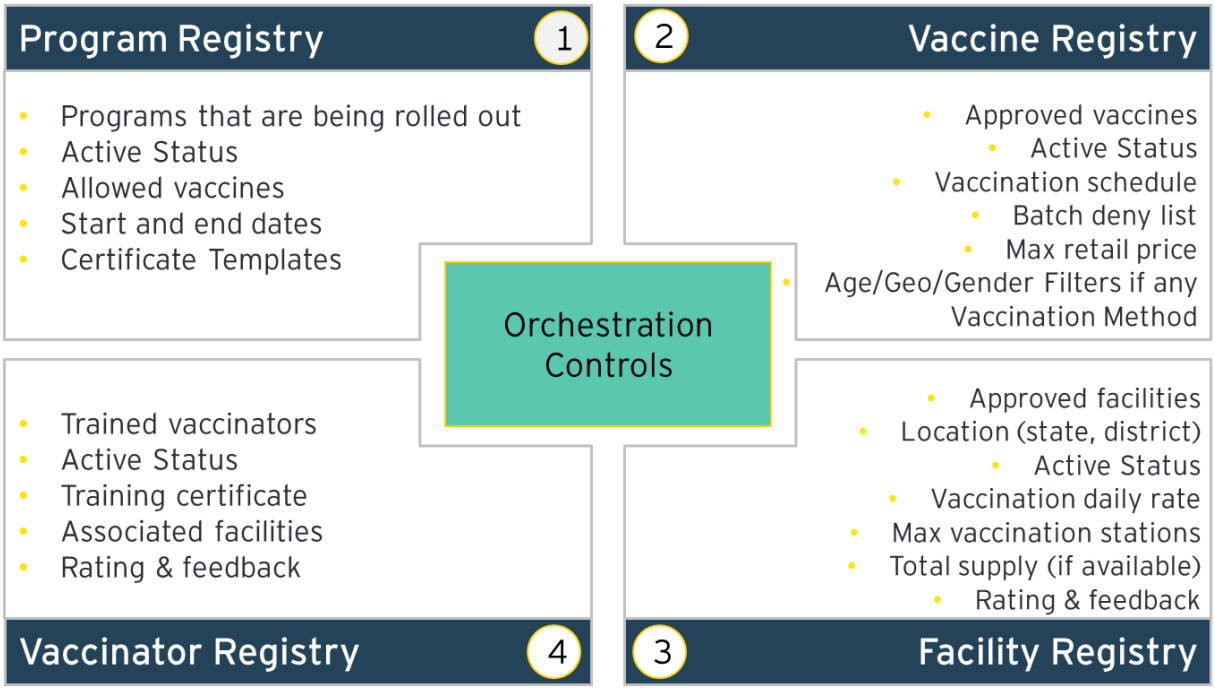
- A "Certificate" module – which has the ability to generate WHO and W3C-compliant digital vaccination certificates, for every resident after successful inoculation. This certificate will be a simple QR code that can be easily accessed/scanned from an individual's mobile phone, and which can be used by country authorities to independently verify the individual's current COVID-vaccination status. The DIVOC team is also actively working with WHO presently, to define the technology specifications for this global digital vaccination certificate standard, which will then be proposed for adoption in all WHO member states.
- A "Feedback" module – which 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.
- An "Orchestration" module – which covers the registration and setup of the administrative functions necessary for a country, before initiating the vaccine rollout program. That is, this module allows a country's vaccine administration taskforce to set up the facilities, the vaccinator profiles, the targeted resident list, and so forth. This module can also support interfaces to integrate with a country's foundational/functional ID systems (e.g. National ID system, Civil registry system, Voter registry system) for validating each resident before he/she is put through the inoculation process.

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



Further details on the 3 core DIVOC modules are outlined below;

1) Orchestration Module

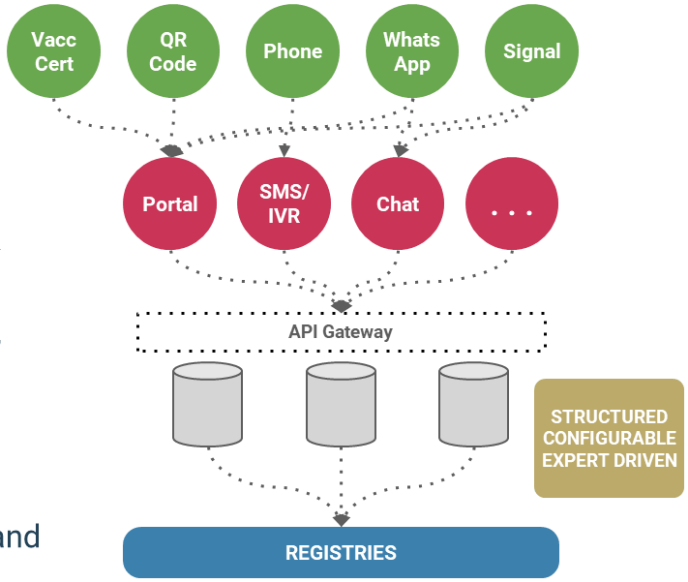


2) Certificate Module

- Conforming to WHO/IHR guidelines* based on W3C verifiable credential* specifications
- 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
- Integratable to health Lockers and certificate lockers
- Easy integration with immunization e-registry

3) Digital Feedback Module

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

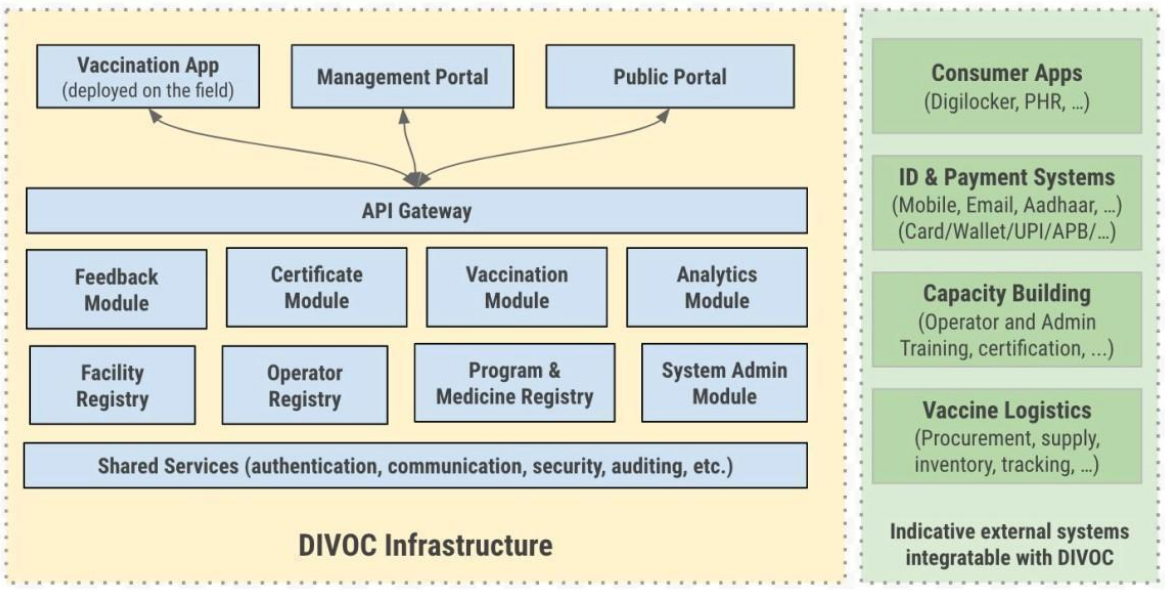


1.3 DIVOC Architecture

DIVOC is a flexible & extensible software allowing multiple parties/systems to plug in based on countries requirement. Following are the architectural principles of the platform:

1. Microservices and API based
2. Interoperable (with various ID, payment, and other systems)
3. Scalable
4. Flexible and configurable (for allowing medicines, vaccination frequency, facilities, operators, rules of certification, different authentication and flows, etc.)
5. Observable via telemetry
6. Resilient (failure resilience, automation, devops, testing, deployment, manageability, monitoring, etc)
7. Privacy and Security by design
8. Built on open source and open standards
9. Trustable (use of digital signature, registries, attestations, audits, etc.)
10. Internationalize (multi-lingual support and ability to adapt and use DIVOC OSS across the world)

The following diagram depicts the overall architecture of DIVOC.



The DIVOC architecture provides flexibility to add new components into solution, based on countries specific needs. Further module details are outlined under the "User Journey" section of this document.

The following technology stack is used primarily in the DIVOC open-source stack;

- Flutter (Gobile)
- Registry Opensaber
- API - goLang / Java Spring Boot
- Kafka queue for certification requests and Domain events
- Redis for caching

Chapter 2: How can countries adopt DIVOC?

The plug-n-play nature of DIVOC allows a country to choose either the complete package or any specific module(s), basis its need. For any country to adopt DIVOC, depending on the level of digitization and available infrastructure, the following pre-requisites should be met;

2.1 Technological Prerequisites

#	Availability of Systems	Scenarios	Pre-requisite	Adoption Approach
1.	Country wide Vaccine Supply Chain System with last mile connectivity	Not Available	1. Manual Entry of Stock: ● Facility wise availability of vaccine stock 2. Stock Entry via Import (Central/ State/ Facility level): ● Facility wise availability of stock in provided	● DIVOC can be customised to provide feature for manual entry of available stock to System/Facility Admin ● DIVOC can be customised to provide import functionality for entry of available stock to System/Facility Admin

			standard format (Excel/CSV)	
		Connectivity till Facility Level	1. Vaccine Supply Chain System should be API Integrable for exchanging stock consumption with (Type, Serial Number, Validity, etc)	● DIVOC forms two-way communication on stock availability and consumption with Supply chain system
		Available till Patient level	1. Vaccine Supply Chain System should be API Integrable 2. Vaccine Supply Chain System should share: ● Consumed Vaccine details ● Vaccinator ● Location (Facility) details ● Timestamp 3. Common Facility Registry in both systems 4. Common Vaccine Registry in both systems	● System captures details on Vaccination & Vaccinator for issuance of certificate
2.	Learning Management System (LMS) for Vaccinator	Available	1. LMS should be API Integrable 2. Unique Vaccinator Id in both systems	● Future versions of DIVOC will integrate with LMS for Verification of Vaccinator Certificates
		Not Available	1. Availability of Physical / Digital Copy of Vaccinator certificate	● Manual Verification of Vaccinator Certificates will be performed at Central / State/ Facility Level
3.	Drug Data Bank / Vaccine Registry	Available	1. Drug Bank / Vaccine Registry should be API Integrable 2. Vaccine Rate Card (for Paid Vaccination) should be available 3. In Case of Multiple Authentic Drug registry: Drug registry with most relevant	● DIVOC integrates with Vaccine Registry to fetch Vaccine details

			drug details to be selected for Integration	
		Not Available	1. Availability of Vaccine Details	• Manual creation of Vaccine details by System Admin
4.	e-Payment System	Available	1. API Details of Payment gateway 2. Registration on Payment gateway 3. Service & Vaccine Rate card	• Future version of DIVOC can be integrated with Payment Portal for Paid Vaccination
		Not Available	1. Service & Vaccine Rate card	• DIVOC provides flexibility to extend and capture vaccine and service rates.
5.	Digital Citizen Registry (EHR/ PHR/ HIS / National ID / National/Regional disease surveillance registries)	Available	1. Citizen Registry should be API integrable 2. Authorization to connect with Citizen Registry OR 3 Multiple Authentic Citizen registry but not covering 100% of Recipient 4 Selection of registry with maximum relevant entry	• DIVOC integrates with Recipient Registry to enrol for Vaccination (For ex BPL Recipients to be enrolled by Government Agency/Dept.) • DIVOC will perform Online verification of Recipient • Manual enrolment and verification of Recipient (Bulk/Single) which are eligible but not yet part of selected integrable registry
		Not Available	1. Availability of Physical document to verify Recipient	• Manual enrolment and verification of Recipient (Bulk/Single) in DIVOC • Manual verification of any identified documents for Recipient
6.	Health Platform (Facility/ Vaccinator Registry)	Available	1. Health Registry should be API Integrable 2. Availability of Facility Data 3. Availability of Vaccinator data mapped to Facility 4. In Case of Multiple Authentic Health registry: selection of	• DIVOC integrates with Health Registry to fetch required data of Recipient/Facility/Vaccinator

			Registry with most relevant data	
		Not Available	1. Availability of Facility and Vaccinator Details in required format	• Manual creation of Facility/Vaccinator details (Bulk/Single) in DIVOC
7.	Digital Signature	Available	1. API Integrable: e-Sign/Digital signature Platform	• Certificates will be Digitally signed
		Not Available	None	• Certificates will be manually signed & stamped by authorised signatory
8.	Health insurance (Public/Private) systems	Available	1. API Integrable – Insurance Platform	• DIVOC can be customised to capture Insurance Id • DIVOC can be customised to Fetch Insurance details for verification and avail benefits
		Not Available	None	NA
9.	Digital Document Vault (National / Regional)	Available	1. API Integrable – Document Vault	• DIVOC can be tweaked to push/store Certificates on Digital vault • Recipient can download certificates from Document Vault or DIVOC Platform
		Not Available	NA	• Certificates will be issued over Mail/ In Hard & Soft Copy / WhatsApp (if services are procured)
10.	Application Access for Facility Staff/Admin	• Mobile No./ Email availability **OR** • Mobile No./ Email Id linked to National Id/ Employee Id	None	• Mobile Number / Email & OTP based login
		National Id/ Employee Id and Mobile &	NA	• Manual User creation by System/Facility Admin and

		Email are not available for Staff/Admin		login by provided Id / Password
11.	Application Access for Recipient	• Mobile/ Email availability **OR** • Mobile No./ Email Id linked to selected Recipient registry	None	• Mobile Number / Email & OTP based login & Access to issued Certificate/Appointment Details
		No Mobile No./Email available with Recipient	Availability of Physical copy of any ID Proof	• Manual Enrolment & Verification of Document • Provisioning printed copy of Certificate

Pre-requisites on Availability of National ID(s)/National Health ID(s)/EHR/PHR/Scheme Registry

Countries implementing DIVOC can have following approaches (based on the availability of National ID(s) in Digital / Physical format);

1. Availability of National ID(s) in **Digital** format which is secure and API Integrable or with Export feature with **100% coverage**
   - Recipient/Vaccinators Identification /Enrolment / Verification:
     a. DIVOC provides feature to integrate with National Id registry for online Identification and Verification of Recipients
     b. In case registry of National Id/Health Id also provides, citizen categories (such as lower economical class/below poverty levels/scheme enrolments), DIVOC can be extended to fetch pre-enrolled list of Recipients
     c. Online Identification and Verification of Vaccinator
2. Availability of National ID(s) system(s) in **Digital** format which is (are) secure and API Integrable or with Export feature with **< 100% coverage**
   a. Selection of Registry with maximum coverage of relevant entries
   b. Manual enrolment and verification of Recipients, which are eligible but not yet part of selected integratable registry
   c. Manual verification of Vaccinator, which are eligible but not yet part of selected integratable registry
3. Availability of National Id(s) in **Physical** format
   a. Manual enrolment and verification of Recipients, which are eligible but not yet part of selected integratable registry
   b. Manual verification of Vaccinator, which are eligible but not yet part of selected integratable registry

2.2 Digital Infrastructure Prerequisites

1) Hosting Infrastructure

#	Component	Scenarios	Pre-requisite	Specifications
1.	Server	Physical Server	1. Internet Connectivity 2. Storage and Computing power as per platforms hosting requirement	• Containerized deployment using docker-compose or kubernetes • Exact specifications will depend on various factors such as rollout span, population planned and usage scenarios for certificate access • To start with Medium instance nodes with ~4 core and 16 GB ram. For Redundancy and failover adding nodes horizontally would be needed.

		Cloud Deployment	1. Storage and Computing power as per platforms hosting requirement	● Containerized deployment using docker-compose or kubernetes

2) Facility Level Infrastructure

#	Device	Scenarios	Pre-requisite	Specifications
1.	Biometric Authentication Devices	Available	1. Availability of registry with Vaccinator / Recipient biometric data 2. Availability of API Integrable registry to connect with Biometric device	● Vaccinator / Recipient Verification to be performed using Biometric Device
		Not Available	None	● Physical verification of Vaccinator / Recipient documents
2.	Facility level Operating Devices	Computer / Laptop	1. Internet connectivity 2. Web Browser	● Application accessed on Web browser
		Tablet / Mobile	1. Internet connectivity 2. Web Browser	● Application is Responsive and can make use of Web browser ● Mobile App will be used for accessing application

2.3 Operational Pre-requisites

In addition to the technical pre-requisites, the following operational pre-requisites are also key determinants for assessing a country's readiness to accommodate DIVOC, as part of its COVID vaccination program;

1. Readiness on vaccination strategy
    a. Identification, approval and procurement of vaccines
        i. Identification of approved vaccines for administration to the population
        ii. Procurement mechanism for large scale vaccination roll out in the country through international alliances or national manufacturing processes
    b. Distribution mechanism
        i. Distribution of vaccines at State, District and facility levels
        ii. Prioritization of states based on vaccine availability
        iii. Availability of vaccines to each vaccination centre
    c. Logistics management
        i. Supply of medicines to vaccination centres
        ii. Maintenance of optimal temperature for vaccines
        iii. Leveraging existing supply chain logistics for vaccines in the country
        iv. Identification of medical store depots for last mile delivery
    d. Coverage under Government Schemes
        i. Identification of government schemes to cover beneficiaries for vaccination
        ii. Identification of priority groups covered under health schemes in the country for state sponsored vaccination
    e. Last mile administration and monitoring
        i. Availability of vaccines to each citizen in the country
        ii. Monitoring of vaccine availability, administration and feedback
2. Capacity building
    a. Identification of vaccinators
        i. Identifying human resource for large scale vaccination roll out
        ii. Maintenance of national vaccinator registries for monitoring
    b. Training on vaccine administration
        i. Training of identified vaccinators for vaccine administration
        ii. Classroom cum e-learning training modules for capacity building
3. Infrastructure
    a. Availability of vaccine centres
        i. Identification of existing health facilities in the country that can be converted to vaccine centres
        ii. Setting up of makeshift vaccine booths for COVID-19 vaccination
    b. Availability of digital infrastructure to facilitate large scale vaccination roll out
        i. Computers/Laptop at each vaccination centre
        ii. Tablet/Mobile phones with the vaccinators and facility staff
        iii. Biometric authentication devices for identification of vaccine recipients
        iv. Servers
        v. Connectivity

4. Government protocols
    a. Criteria for beneficiaries
        i. Establishing identification parameters for phase wise vaccination
        ii. Identification of frontline workers and vulnerable population
    b. Vaccine administration
        i. Standard treatment protocols for administration of vaccine
        ii. Medical protocols to be followed by each vaccinator with proper training
    c. AEFI and post-event monitoring protocols
        i. Establishing protocols for feedback collection from vaccine recipients to identify adverse effects of the vaccine post administration
        ii. Feedback collection to be based on approved guidelines as per WHO
        iii. Monitoring mechanism for AEFI for future policy and dynamic decision

2.4 Implementation Guidelines

How do you configure DIVOC to suit your country needs?

DIVOC is cloud-agnostic platform and can be deployed either in a containerized fashion or in bare-metal fashion. DIVOC requires the following modifications to suit a specific out-of-the-box implementation;

- Template for certificate format to match the schema
- Set up of keys to sign the certificate and safestore the private keys
- Providing the appropriate logos and the tagline
- Configuration service to select local language mapping
- Schema and properties of the registry
    - Facility json schema
    - Vaccinator schema

      Medicine schema
    - Certificate schema
- Adapters (standards-driven: for e.g. eHealth standards for message syntax) for integration with
    - Notification services
    - Digital identity system, if any
    - Other eHealth systems
- Plugin for integration with any country specific digital infrastructure

How do you Integrate DIVOC with other systems?

The platform provides various APIs to integrate with various system partners in a country's COVID vaccination program. The following (below) are key services provided by DIVOC;

- Login: Token based login
- Fetch Configuration details
    - Application Flow
    - Vaccination Program
    - Vaccinators Mapped to Facility for the operator / facility.
- Get Vaccination Details
    - User Information
    - Pre enrolment information
    - All pre enrolments applicable to assigned facility
- Certification
    - Certify the one or more vaccination: Certification happens asynchronously, this requires vaccinator authorization and the vaccinator should be trained for the vaccination that is being certified.
    - Upload certification csv for bulk ingestion: Certify all the data in uploaded csv
- Identity: Validate identity if the person
- Default:
    - Get certificate json
    - Send events for monitoring / tracking purpose.
    - Server heartbeat operation: his operation shows how to override the global security defined above, as we want to open it up for all users.
- Side Effects: Get Side Effects Metadata
- Report Side Effects: Create reported side effects
- Digital Vaccination certification verification API
    - Verify digitally signed vaccination certificate accepts signed certificate and verifies the claim.
- Admin API
    - get facilities
    - Upload facility csv for bulk ingestion
    - Update facility
    - get enrolments
    - Upload facility csv for bulk ingestion of pre enrolment
    - Get vaccinators
    - Upload facility csv for bulk ingestion
    - Get & Create Program List
    - Get & Create medicines
    - Get & Create Facility Users
    - Get Analytics Query

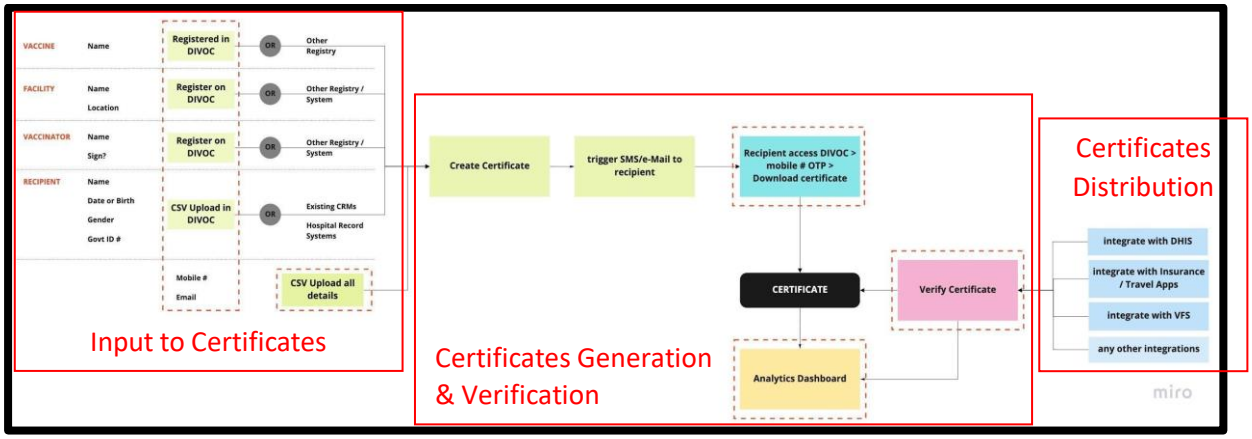
For more information on the various APIs enabled through DIVOC, please refer the table below;

#	API Calls	Link
1	Certify one or more Vaccinations	https://github.com/egovernments/DIVOC/developer-docs/api/admin-api.html#/vaccination-api.yaml
2	Verification API	https://github.com/egovernments/DIVOC/developer-docs/api/admin-api.html#/divoc-verification.yaml
2	Admin API	https://github.com/egovernments/DIVOC/developer-docs/api/admin-api.html#/

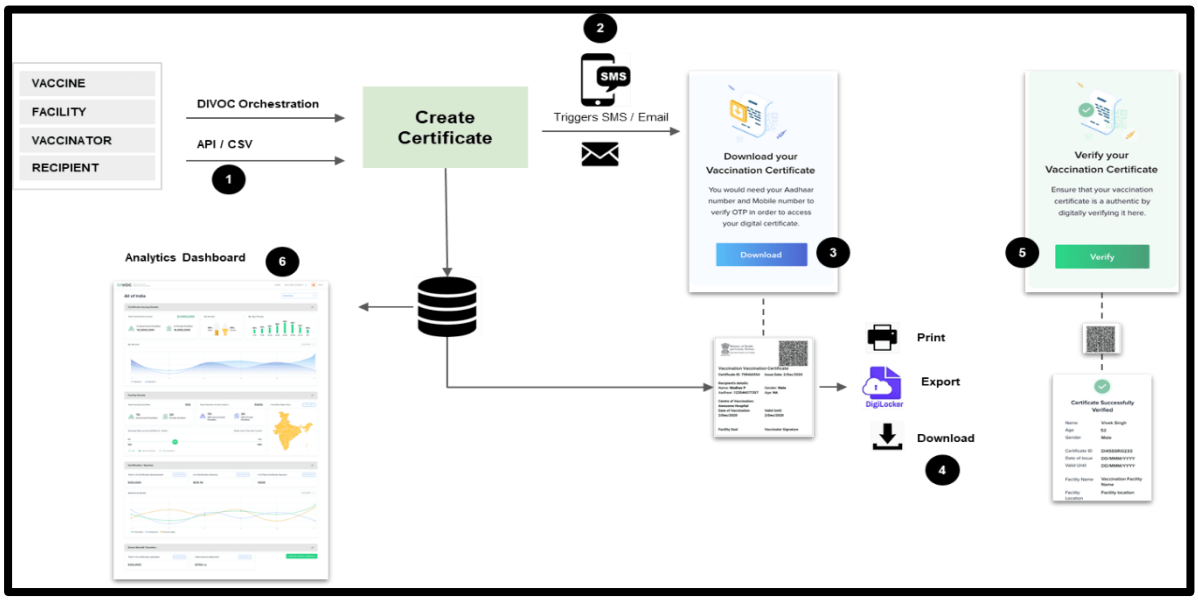
Chapter 3: User Journey

3.1 "Digital Certification' Module Overview

The Certification module in DIVOC has been developed on the principle of Plug & Play with microservice and API based architecture. This allows the module to work Independently and can integrate with other modules of DIVOC or any external application/portal/system.



System Flow: Certificate Input and Generation by Facility Staff



Certificate Input:

1. Input for the certificate can be provided in four separate methods:
   - From DIVOC Orchestration Module
   - Using API Call from any other parallel application
   - Manual CSV upload
   - Manual Form Entry
2. The Certificates templates are configurable
3. 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

Input Process:

- **Certificate Input using CSV Upload**
    1. User Click on Certificate Entry tab
    2. User Click on "Upload CSV" option on screen
    3. Select the File and Upload
        - File content should be in provided templatized format
        - On successful import, data will get added in portal and shown in of Table
        - On failure, list of failed records will be shown. The error logs are also available for downloading

- **Certificate Input via Manual Form Entry**
    1. Click on Certificate Entry tab
    2. Click on "Enter Certificate Details"
    3. Enter Following Details
        a. Recipient Details (Name, Gender, Age, Aadhaar (or any National ID))
        b. Centre of Vaccination with Facility Seal
        c. Vaccinator Details with Signature
        d. Date of Vaccination
        e. Validity of Certificate
    4. Click on Save

- **Certificate Input via API call from Orchestration module of DIVOC or Other Parallel Application**
    1. Service call will be made from application backend with Manual, Automated or Scheduled Trigger
    2. Please refer Annexure A for details on API Calls

Certificate Generation Process:

- On generation of Certificate based on provided inputs, system will trigger and send Email/SMS to recipient for user to Print / Export / Download it
- The Generated certificate will have Bar/QR code for its verification and confirmation
    1. Open URL: *<<the production URL will have to be provided by the country>>*
    2. Click on Download Certificate

3.2 Orchestration Module Overview

The Orchestration module in DIVOC has also been developed on the principle of Plug and Play allowing it to work Independently and can integrate with other modules or any external application/portal/system.

Main functions of the orchestration module are:

1. Ingest/upload bulk data
2. Setting up the program

3. Setting control parameters (activation & throttling)

LOGIN

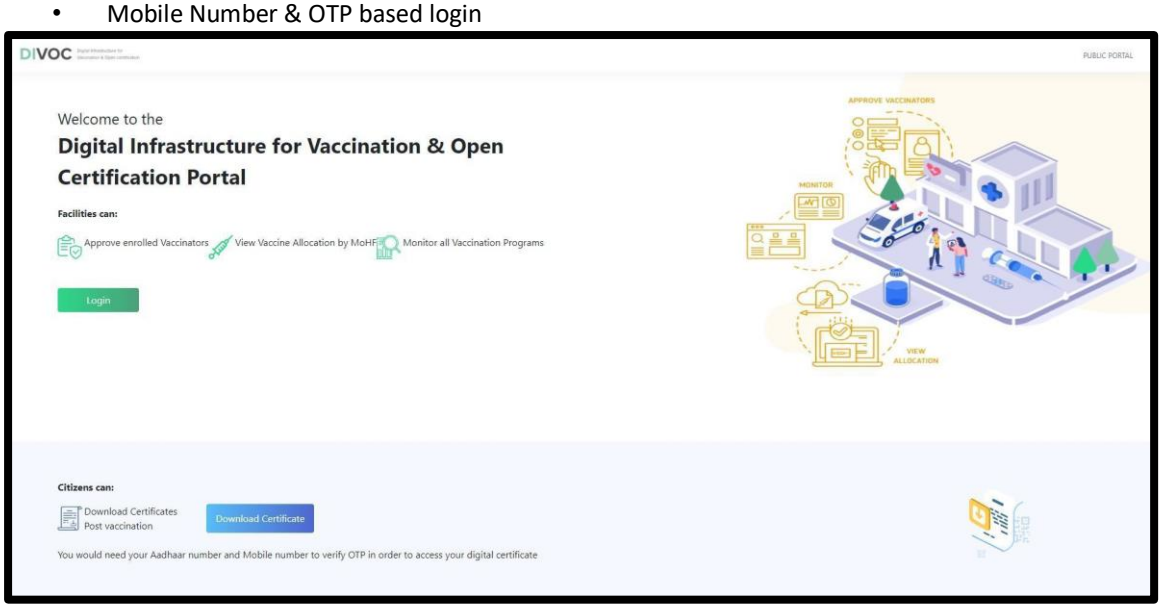
Public portal: *<<the production URL will have to be provided by the country>>*

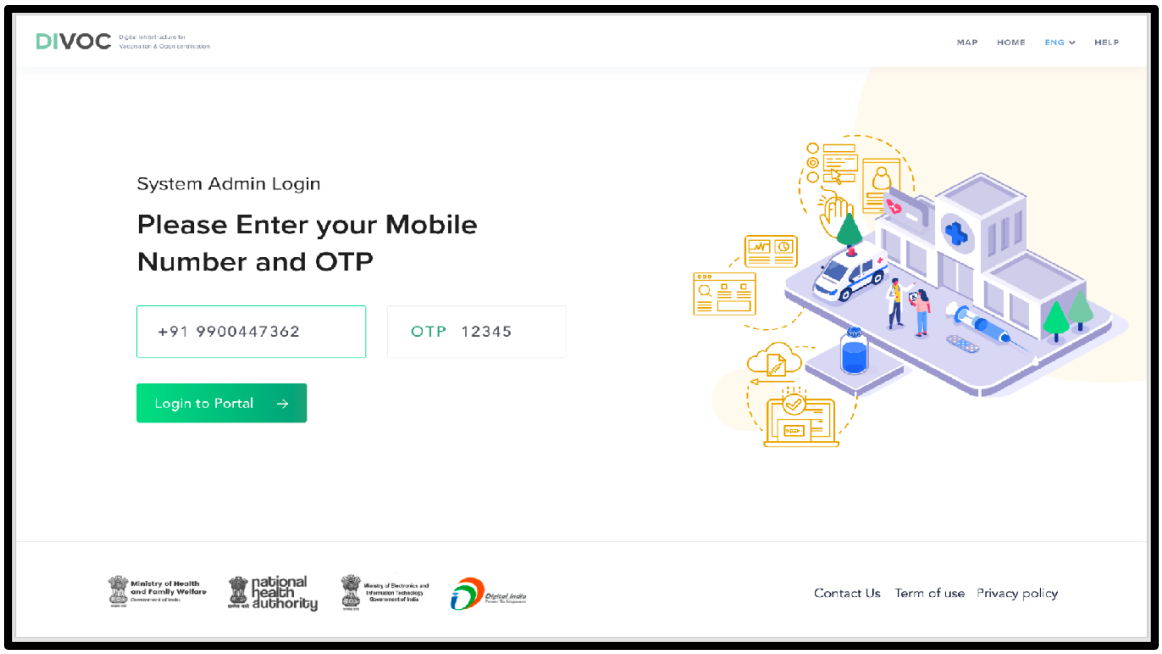
Citizen:

- Link to Download Vaccination Certificates
- Get Latest updates on Platform
- Platform Documentations

System Users

- Mobile Number & OTP based login



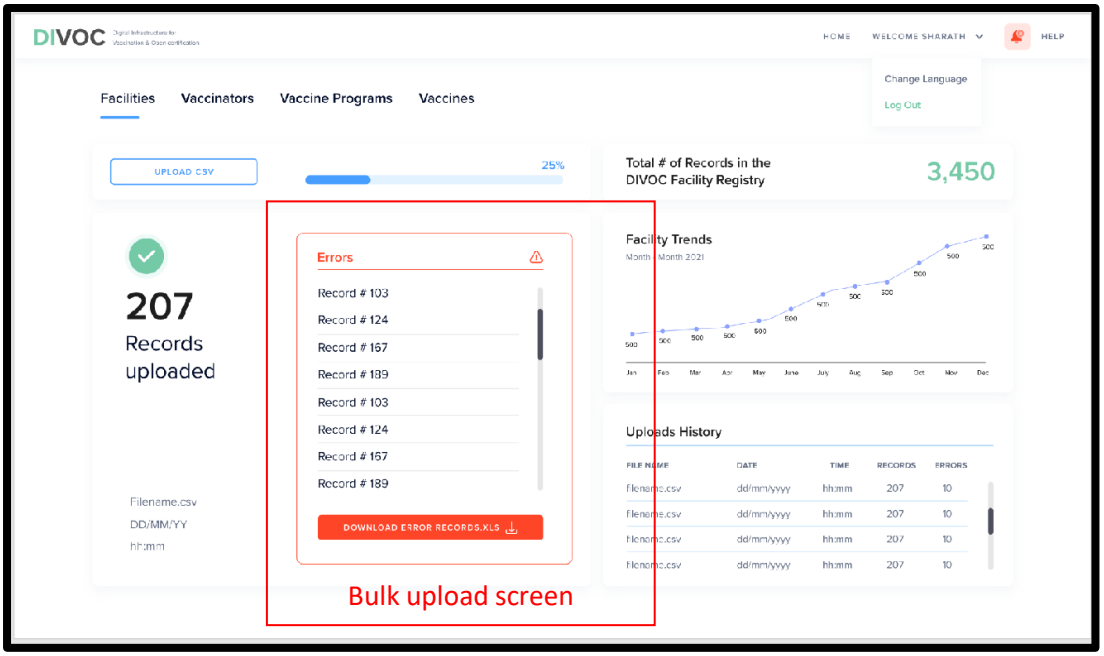


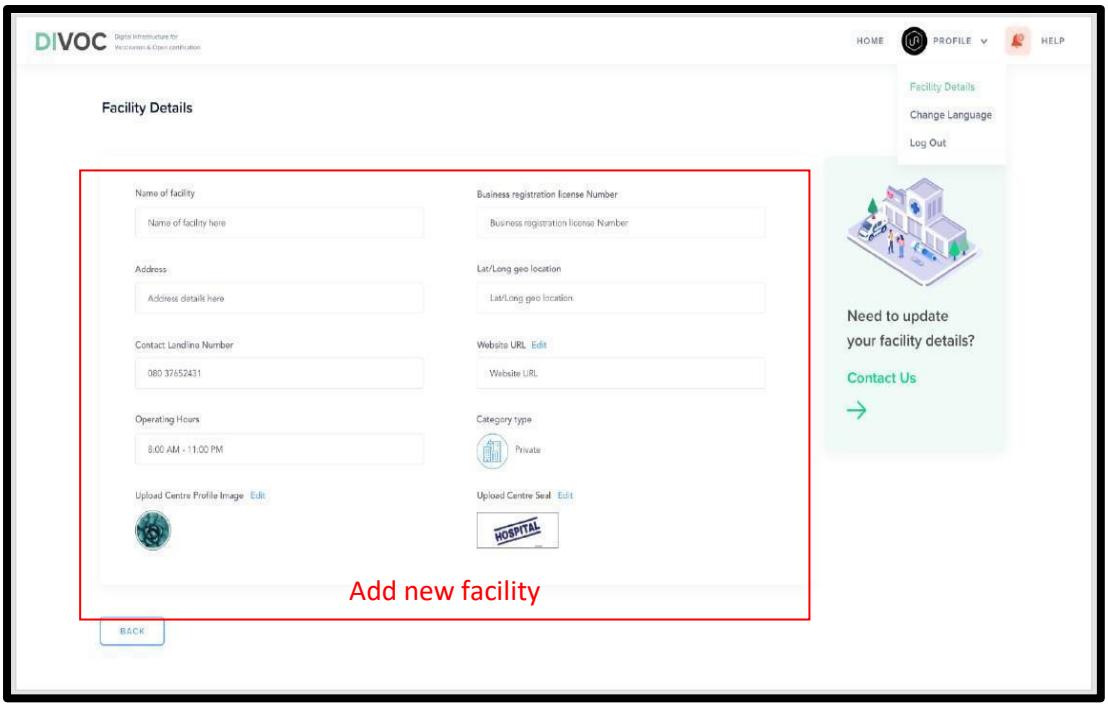
MANAGEMENT PORTAL

1. **Facility Registry**
   a. **System Admin functions**

- Bulk Upload of Facility Data
- Download Error Files in Bulk Upload

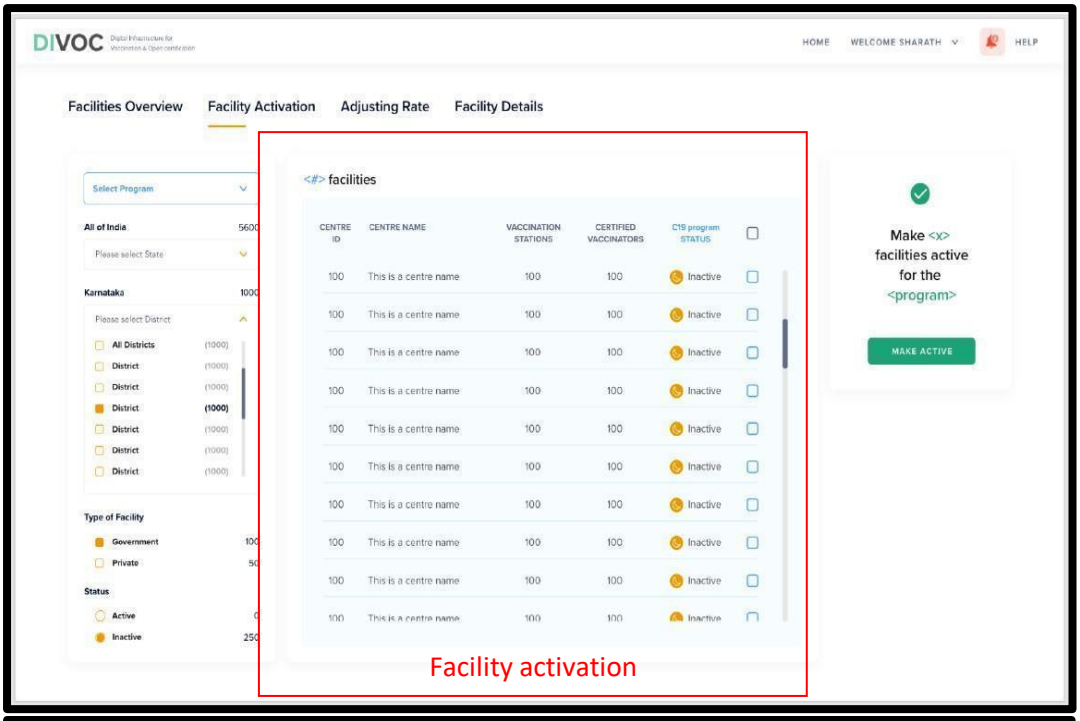
- Trend line of record counts
- API Integrable with external already available facility registries
- Manual Add / Edit Facility

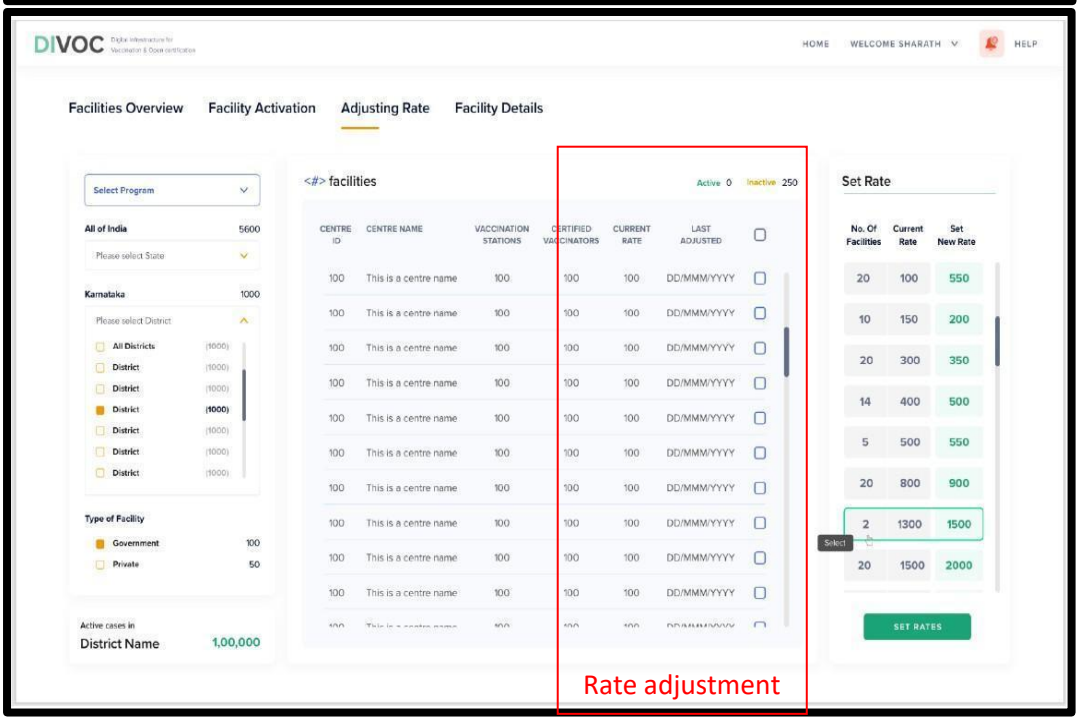




b. Management user functions

- Filter Type/Region and Activate/Deactivate Facility
- Set/Edit Vaccination Rate
- Email / SMS trigger to the Facility Admin
- Audit Log

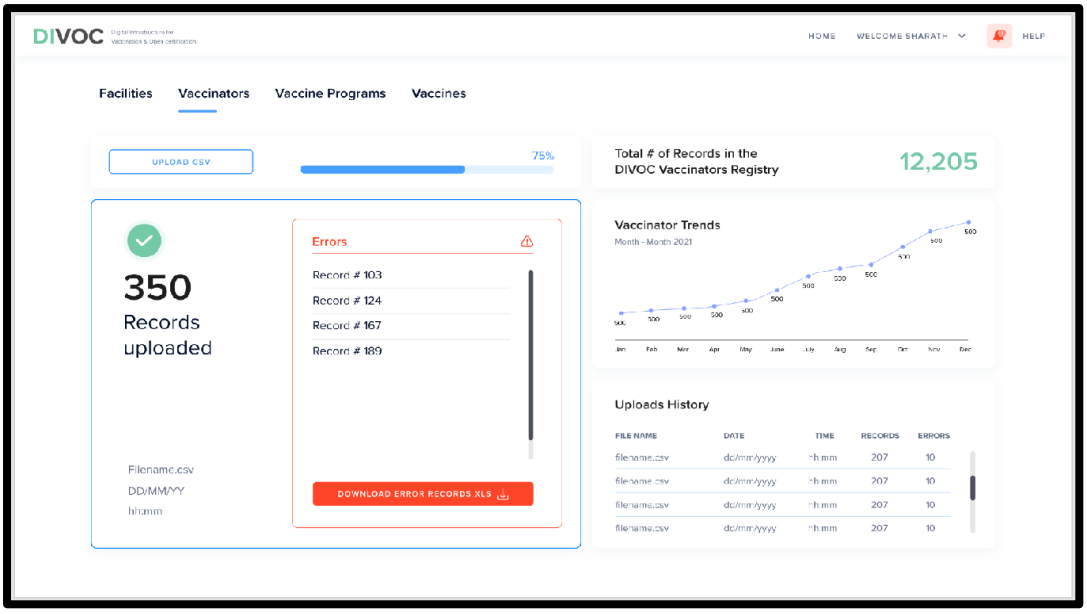




2. Vaccinator Registry

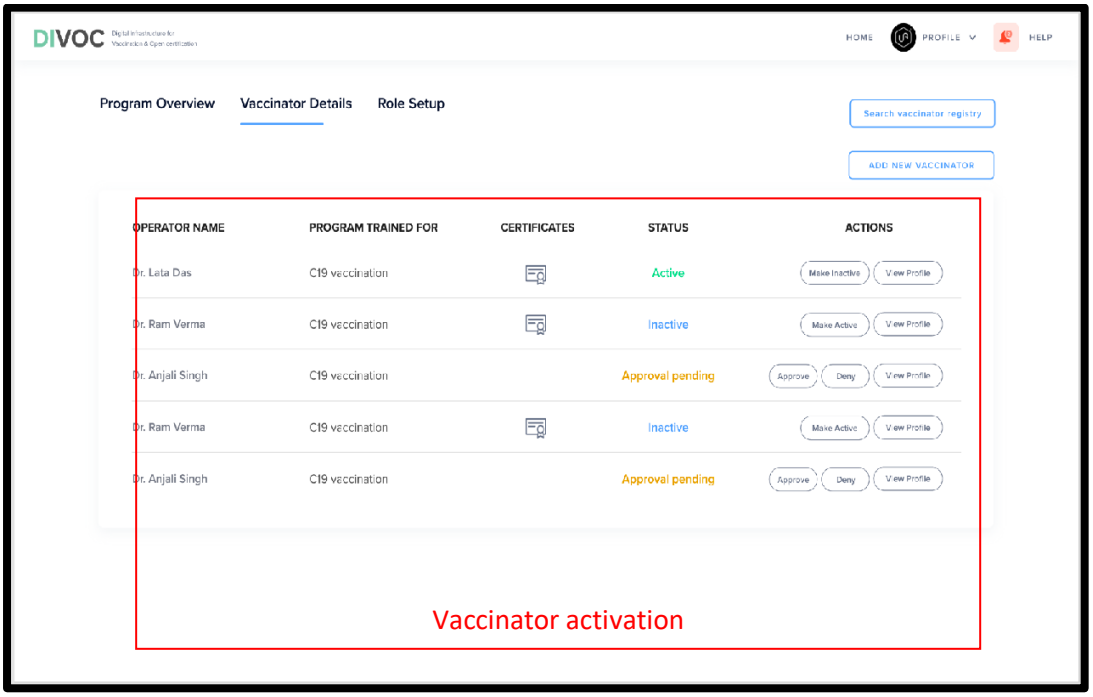
a. System Admin functions

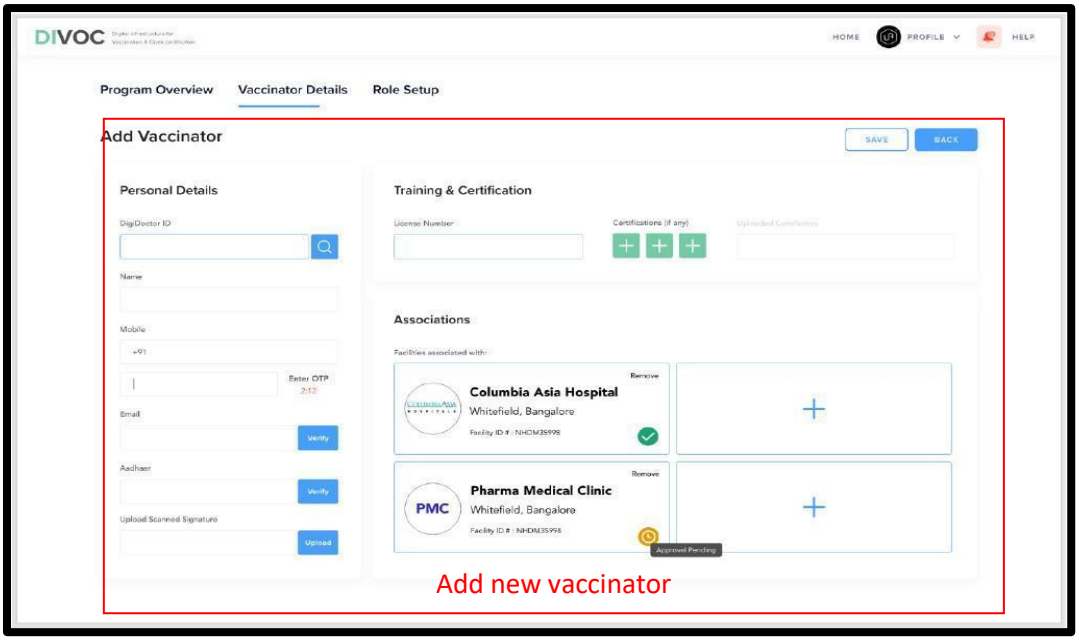
- Bulk Upload of Vaccinator Data
- Activate / Deactivate Vaccinator
- Download Error Files in Bulk Upload
- Audit History
- Trend line of record counts
- API Integrable with external already available Vaccinator registries
- Email / SMS trigger to the vaccinator to add associated facilities / modify any personal details / add certificates

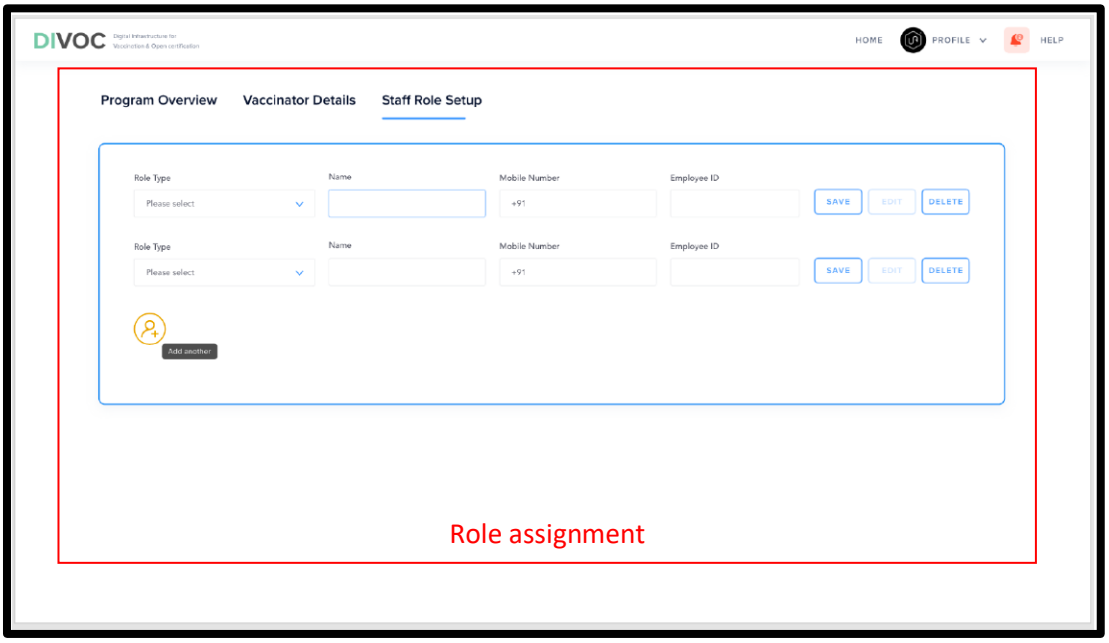


b. Facility Admin functions

- Approval of Vaccinator Details
- Search & Activate / Deactivate Vaccinator
- Manual Add / Edit Vaccinator details with certificate
- Integrable with LMS for verification of training & certificates
- Configurable role creation
- Configurable Role and Vaccinator/Other System User Mapping

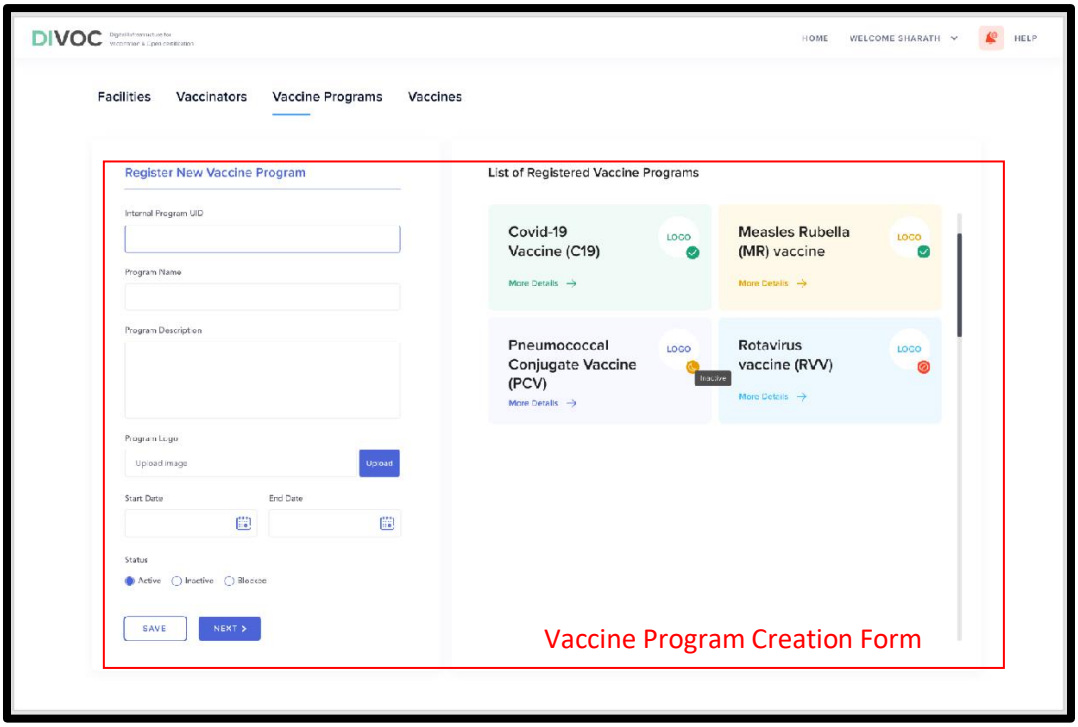






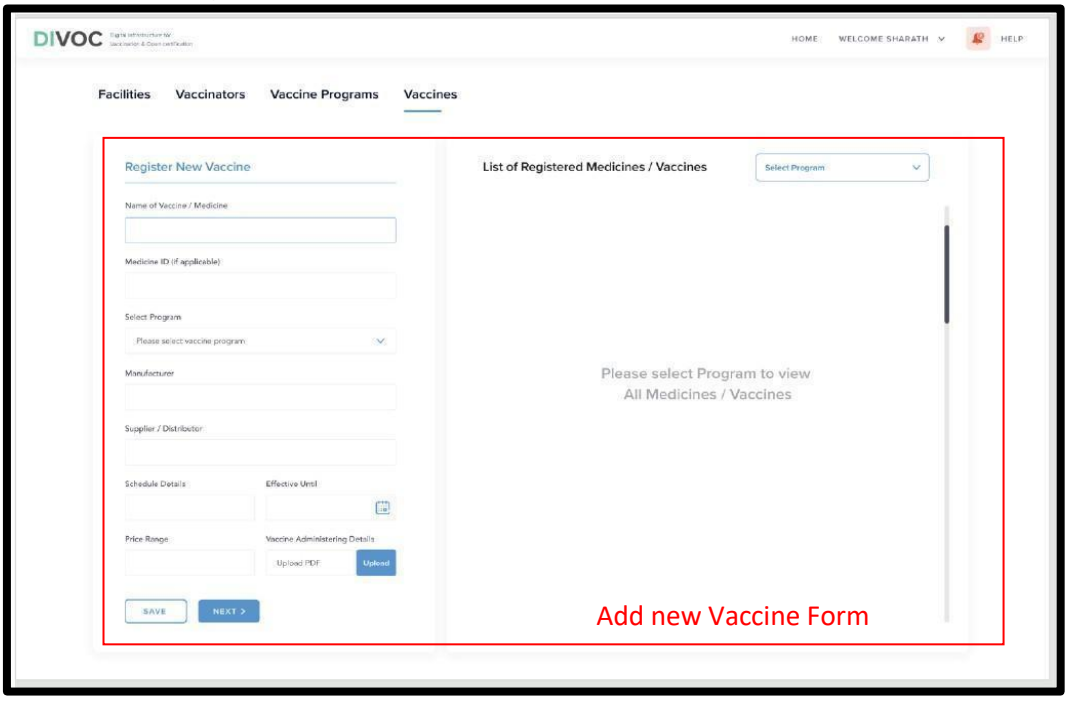
3. Vaccine Program Registry
System Admin functions

- Create New Vaccine/Immunisation Program
- View / Edit Program Details
- Activate / Deactivate Program
- Audit History



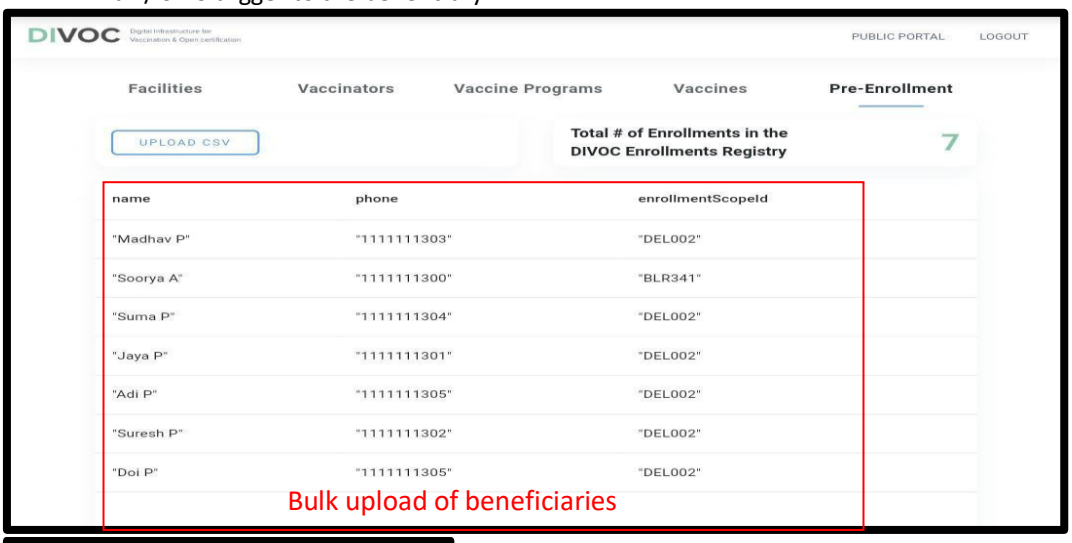
4. **Vaccine Registry**
   System Admin functions

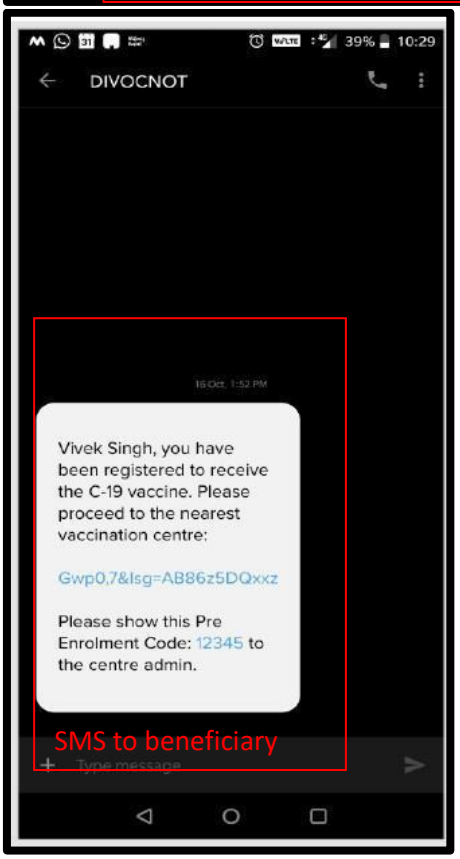
- Add New Vaccine in System
- View / Edit Vaccine Details
- Activate / Deactivate Program
- Audit History



5. **Beneficiary Pre-enrolment**
   System Admin features

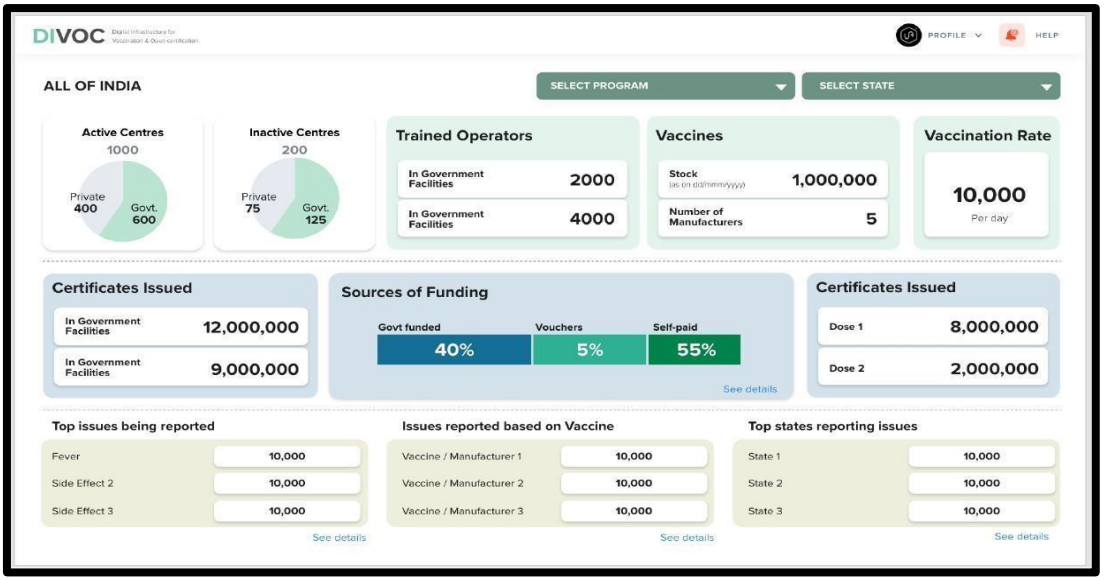
- Bulk Upload of Citizen Data
- Integrable with National ID/ Immunisation Registries
- Add/Delete Citizen
- Download Error Files in Bulk Upload
- Email / SMS trigger to the beneficiary





DASHBOARD FOR MANAGEMENT USER/DECISION MAKERS

- National/State/Facility Level Dashboard
- Heat Map
- Performance Monitoring
- Showcase Funding's distribution and its Utilisation
- Highlights Vaccination Rate
- Feedback tracker

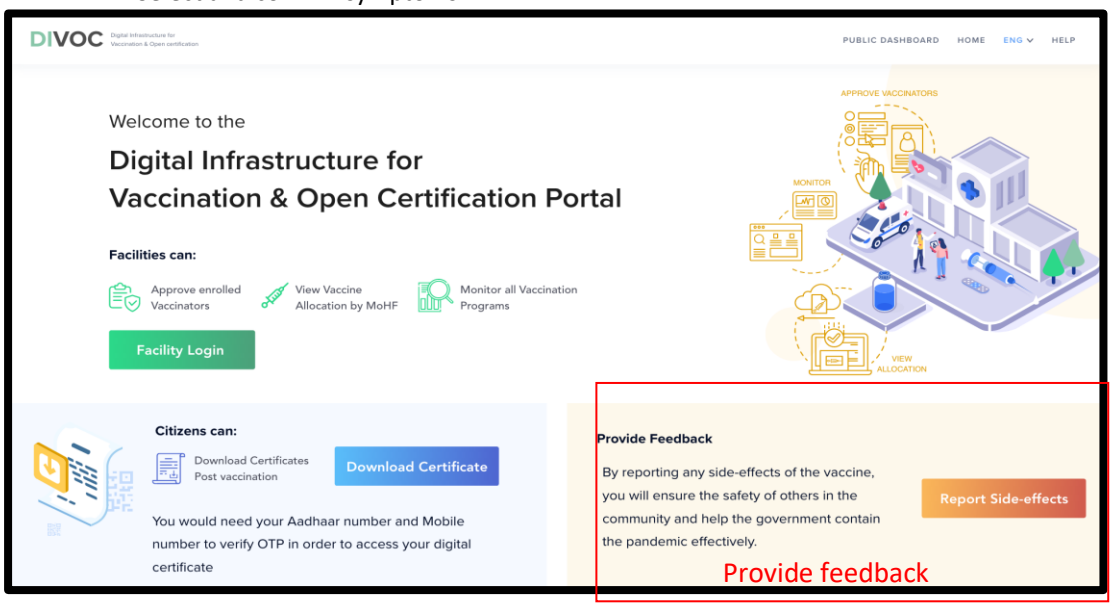


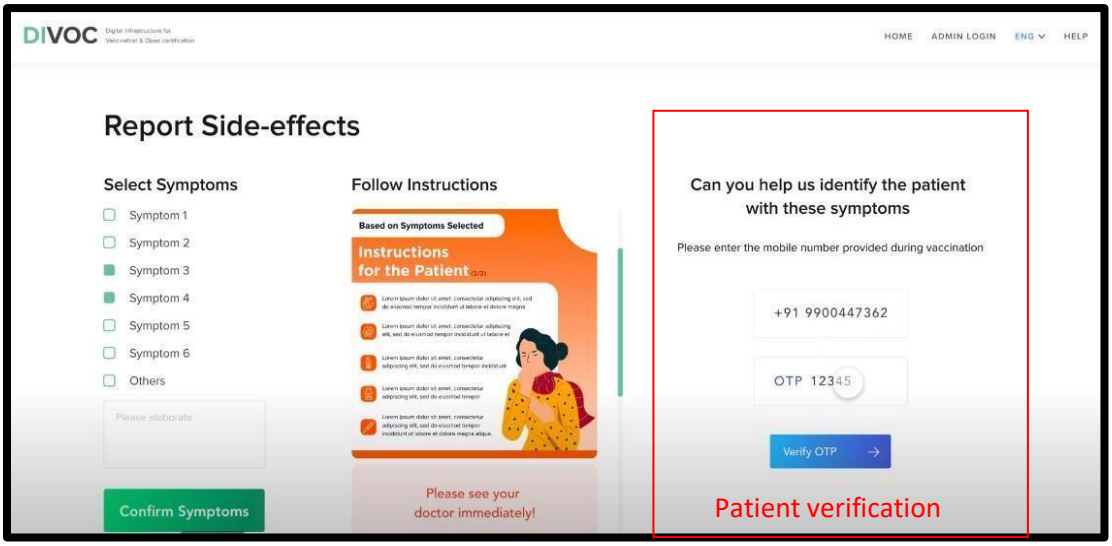
3.3 Feedback Module Overview

Like other DIVOC modules, Feedback module also has Plug and Play with Micro-Service and API based architecture. The module works Independently and can integrate with other modules of DIVOC or any external application/portal/system.

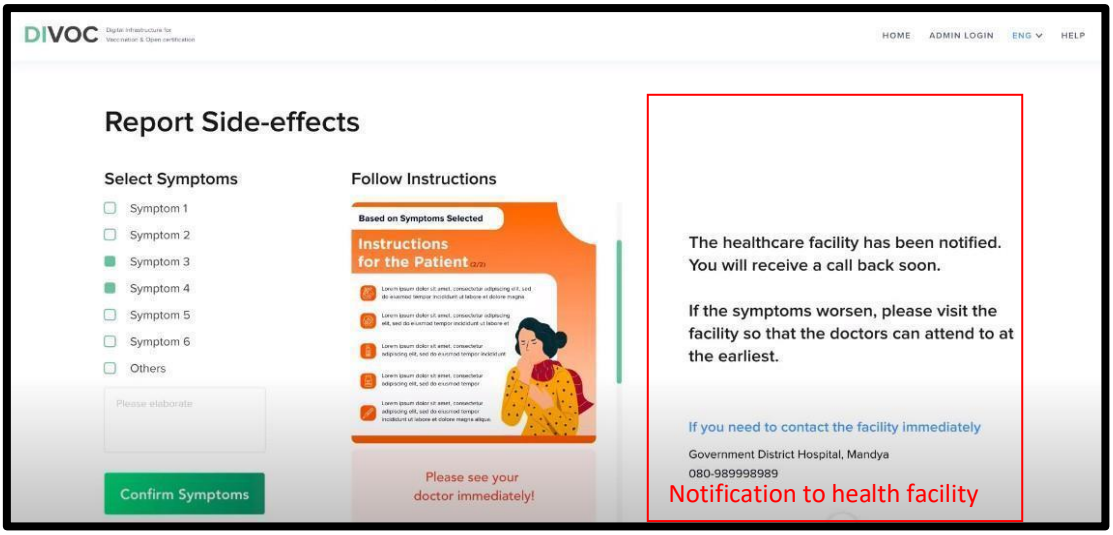
LOG IN: *<<the production URL will have to be provided by the country>>*

- Choose Provide feedback on DIVOC homepage
- Click on Report side effects
- Select and confirm symptoms





- Verify patient using mobile number login
- Choose amongst list of patients and confirm submission
- Notification to healthcare facility will be sent



Chapter 4: Effort Estimate Template

The table below summarizes a template for countries to estimate efforts for customising DIVOC for country-specific requirements, customisation/configurations and deployment. The table is only illustrative in nature, and the intent is to help country authorities make the necessary planning considerations, when customizing and deploying DIVOC for their vaccine programs.

Effort Estimation			Resource Type wise efforts				
S. No	**Activities**	**Effort (Man Months)**	**BA**	**Developer**	**Sr. Developer**	**Tester / QA**	**System Admin**
1	Requirement						
2	Design						
3	Customisation and Configuration of DIVOC						
4	System Integration Testing						
5	Security Testing						
6	Performance Testing						
7	User Acceptance Testing (UAT) & Bug Fixing						
8	Implementation & Rollout						
Total Customisation and Rollout Effort (Man-Months)							
9	Support and Maintenance of only Application for remaining 6 months						
10	Capacity Building						
Overall Efforts							