



# JumpaDokter: Simplifying the Electronic Medical Record with DHIS2 Engine

HISP Indonesia



# Outlines

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- About JumpaDokter
- JumpaDokter Ecosystem
- JumpaDokter Mobile
- JumpaDokter Doctor Platform
- JumpaDokter DHIS2 to SATUSEHAT

# JumpaDokter

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**JumpaDokter** is an ecosystem of systems for Electronic Medical Record management, such as Health Service, Diagnosis, and Medicines

The big vision of JumpaDokter is to help any private health facilities that doesn't have any EMR application, to use JumpaDokter as EMR application in compliance with the Indonesian MOH regulation that imposes any Health Facilities must use Electronic Medical Record on 2024.



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**JumpaDokter** uses DHIS2 engine as a core application that very helpfully to build EMR metadata, and integrate with any custom application.



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**JumpaDokter** currently in development for integration with SATUSEHAT to support the Indonesian Health Government interoperability for health information.



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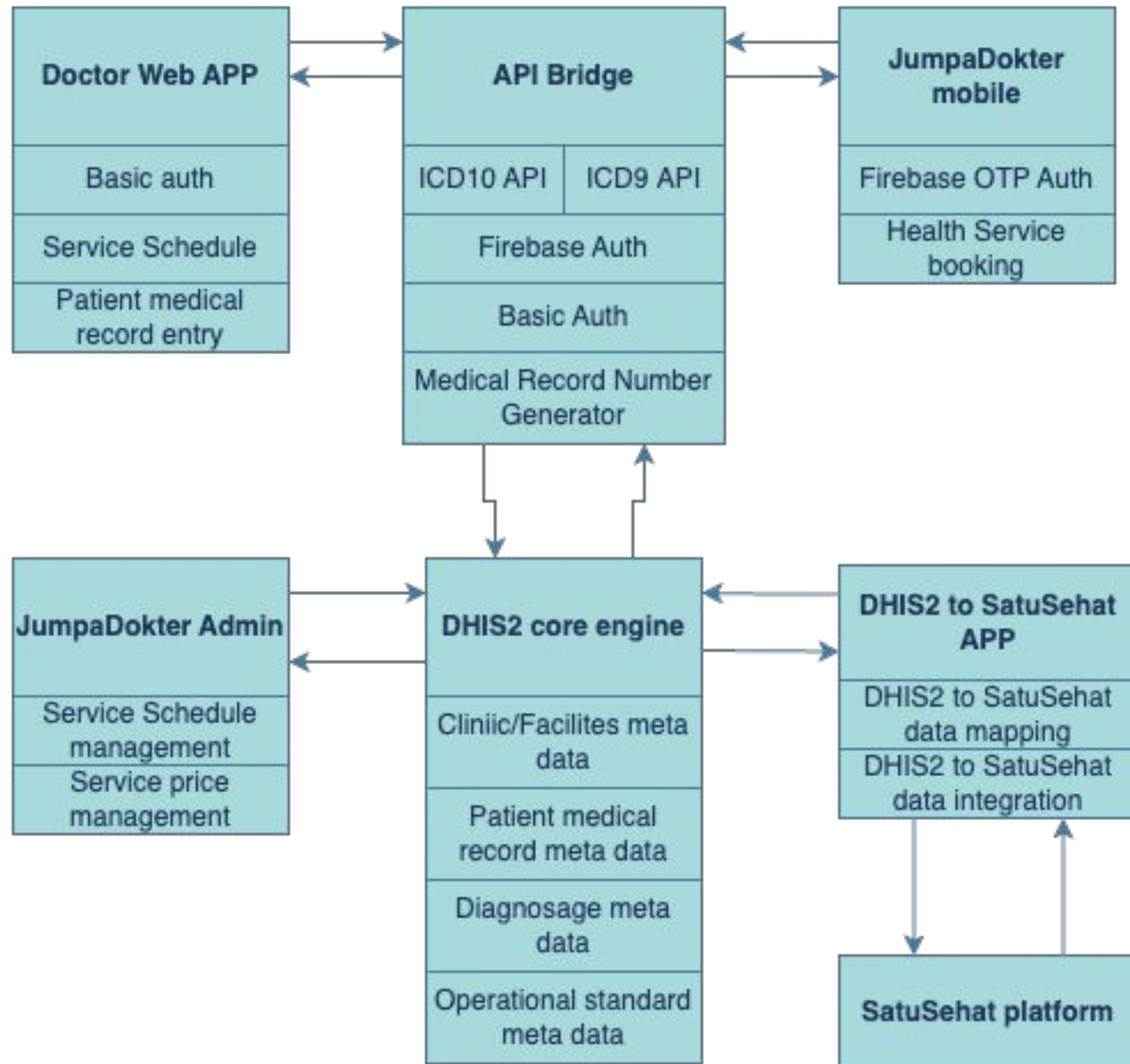
**JumpaDokter** will help facilities to manage health service and patient medical record.



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**JumpaDokter** was developed by using several renowned technology for creating Web and Mobile applications like nodejs, React, and Flutter.

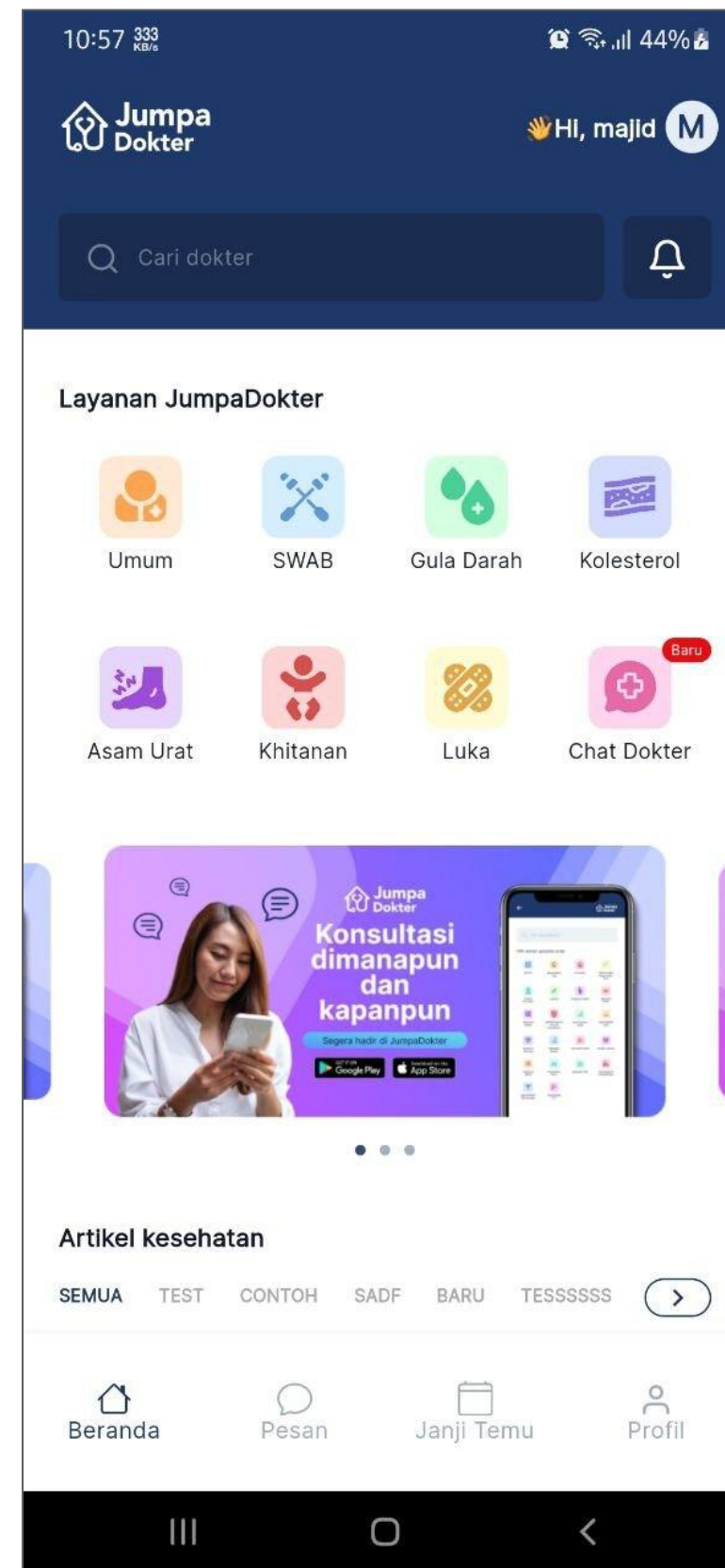
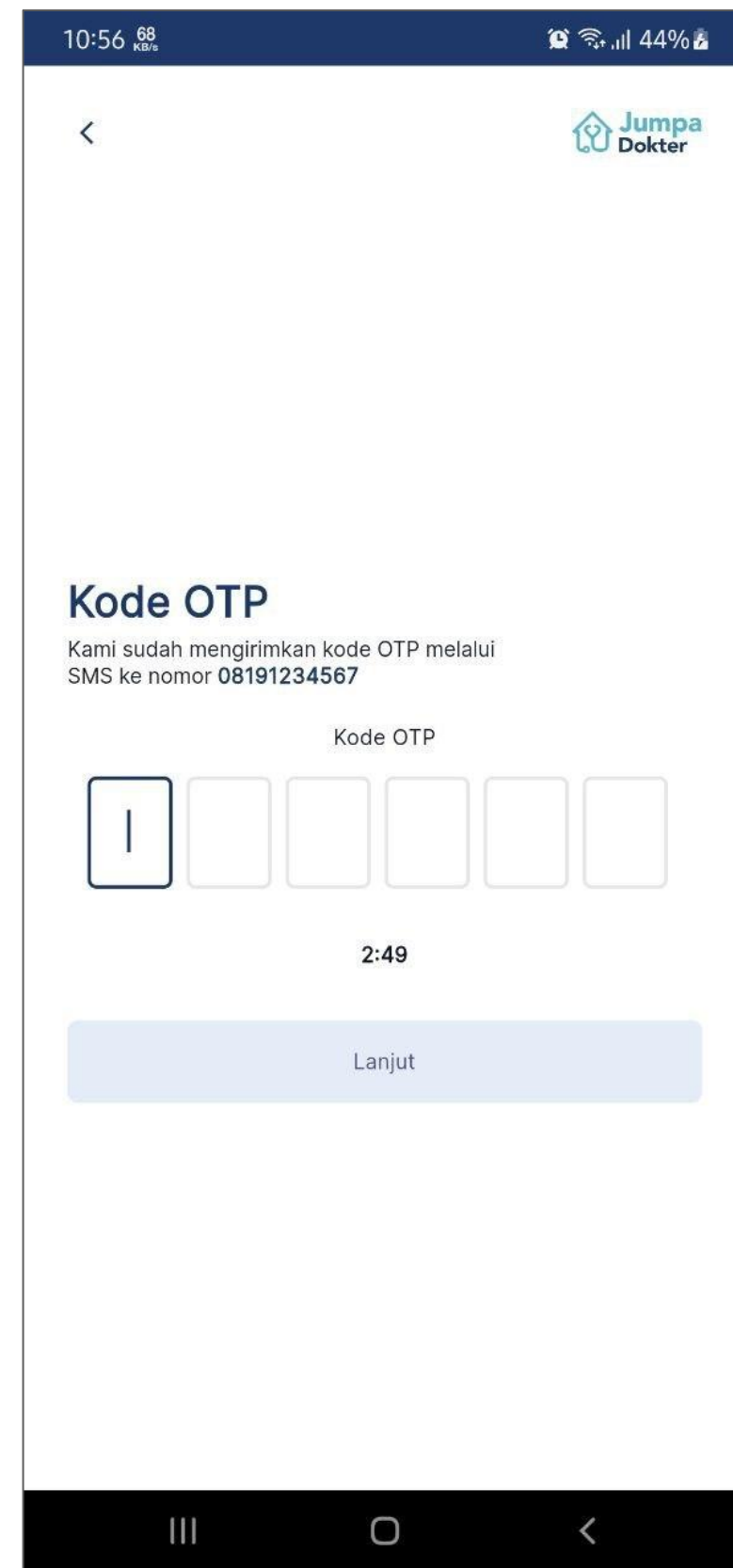
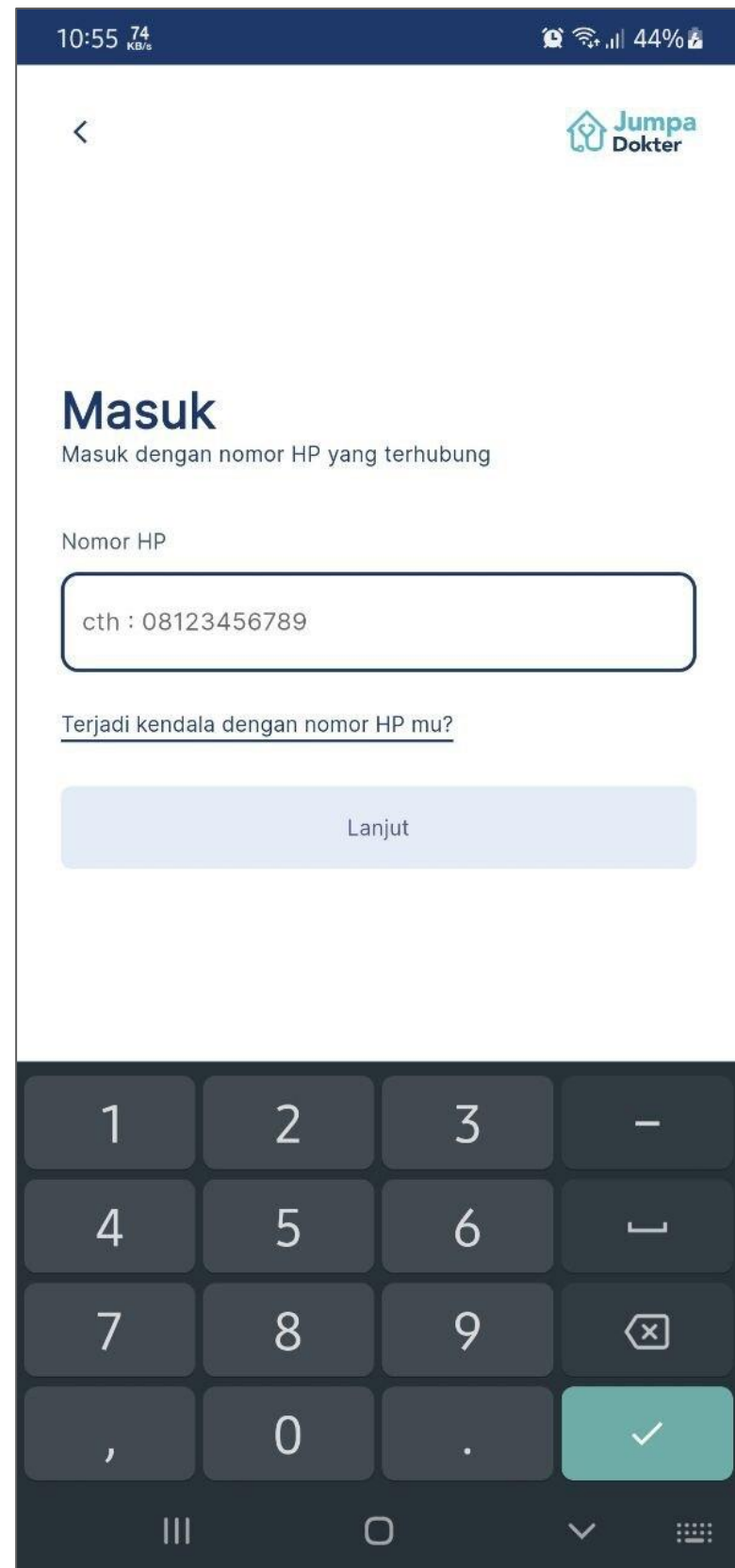
# JumpaDokter | Ecosystem



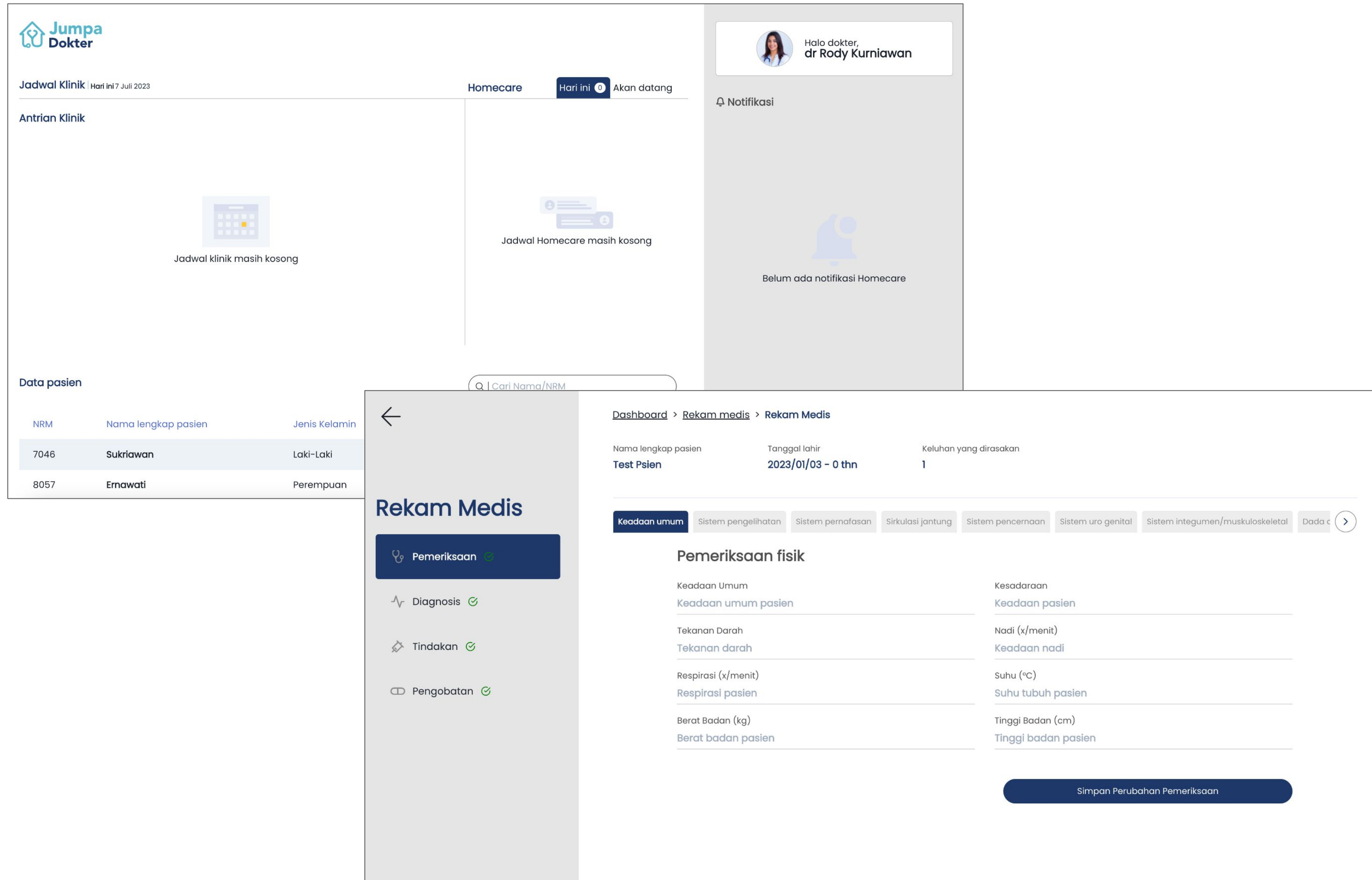
**JumpaDokter Ecosystem** contains several applications that integrate with each other by DHIS2 engine.

- **JumpaDokter mobile** for patient health service appointment.
- **Doctor Web App** for doctor to document the service given to the patient.
- **API Bridge** as a middleware between Doctor Web App, JumpaDoctor mobile with DHIS2 core engine. Also support for ICD10 API for diagnosis standard, and ICD9 API for procedural standard.
- **JumpaDokter Admin**, managing doctor schedules and health services.
- **DHIS2 to SATUSEHAT Platform**, data mapping and interoperability layer for JumpaDokter to SATUSEHAT platform (Indonesian health data exchange protocol).





- **JumpaDokter Mobile** is a mobile based application build with *Flutter* and *Firebase* as authentication and notification. This mobile application integrate with JumpaDokter DHIS2 engine over API Bridge with Rest API.
- JumpaDokter Mobile empowers patients by offering a user-friendly and accessible platform to order health services or virtual consultation whenever and wherever they want.
- JumpaDokter Mobile provide OTP authentication with user phone number that make JumpaDokter easier to use.



The screenshot displays the JumpaDokter Doctor App interface. The top left shows the app logo and navigation tabs for 'Jadwal Klinik', 'Homecare', and 'Akan datang'. The main dashboard area is divided into three sections: 'Antrian Klinik' (empty), 'Jadwal Homecare' (empty), and 'Notifikasi' (no notifications). Below this is a 'Data pasien' table with columns for NRM, Nama lengkap pasien, and Jenis Kelamin.

NRM	Nama lengkap pasien	Jenis Kelamin
7046	Sukriawan	Laki-Laki
8057	Emawati	Perempuan

The bottom section shows a detailed 'Rekam Medis' (Medical Record) view for patient Sukriawan. It includes a sidebar with navigation options: 'Pemeriksaan', 'Diagnosis', 'Tindakan', and 'Pengobatan'. The main content area shows patient details (Name: Sukriawan, Birth Date: 2023/01/03, Complaints: 1) and a 'Pemeriksaan fisik' (Physical Examination) section with various vital signs and symptoms.

**Rekam Medis**

Dashboard > Rekam medis > Rekam Medis

Nama lengkap pasien: Sukriawan  
Tanggal lahir: 2023/01/03 - 0 thn  
Keluhan yang dirasakan: 1

**Pemeriksaan fisik**

Kesadaran	Kesadaran pasien
Nadi (x/menit)	Nadi (x/menit)
Suhu (°C)	Suhu tubuh pasien
Tinggi Badan (cm)	Tinggi badan pasien

Simpan Perubahan Pemeriksaan

- **JumpaDokter Doctor App**, is a web based application created with *React* and *NodeJs* that integrate with JumpaDokter DHIS2 engine over API Bridge with Rest API.
- Doctor App provided Basic authentication that follow the DHIS2 authentication.
- This application provide several features like, view list of patients, enter patient medical records, and view the schedule for health services.

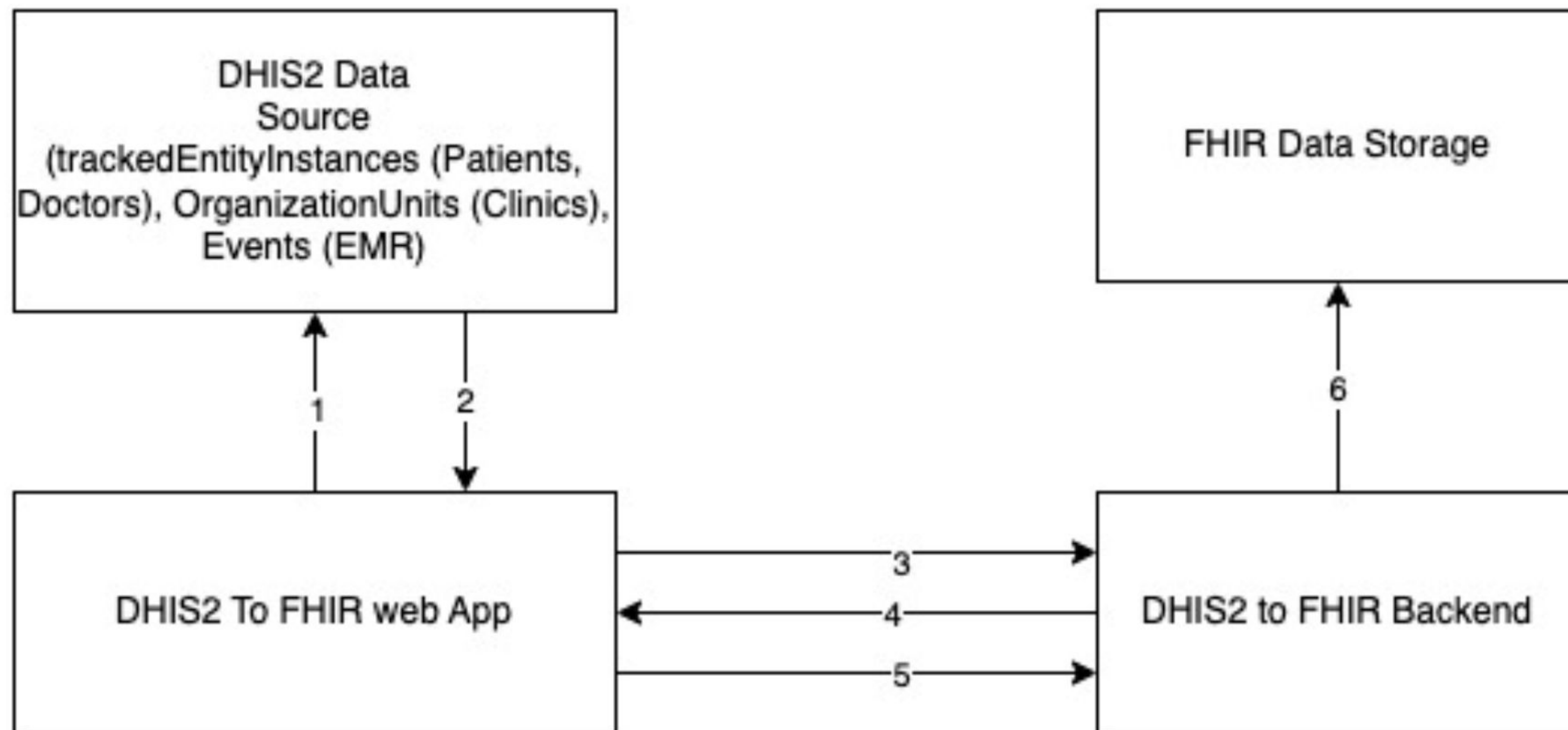


# DHIS2 To SATUSEHAT Platform





# DHIS2 To SatuSehat App | Data Flow



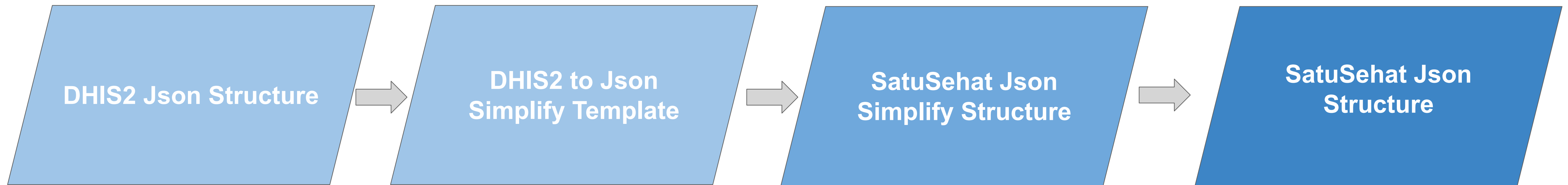
## Process :

1. Request to get data sources to DHIS2 that need to store to the FHIR Data Storage
2. DHIS2 return the requested data.
3. The DHIS2 to FHIR web App Request the data matching template to the Backend
4. DHIS2 to FHIR Backend return the Data Template Matching
5. DHIS2 to FHIR Web App view the mapped data and send to DHIS2 to FHIR Backend
6. DHIS2 to FHIR Backend store the mapped data to FHIR Data Storage

- **DHIS2 To SatuSehat App**, is a web based application created with DHIS2 Custom App.
- Integrate directly with JumpaDokter DHIS2 Engine.
- Mapping JumpaDokter health data (patient, doctors, clinics, patient EMR) to SATUSEHAT standard.
- Data exchange layer between JumpaDokter and SATUSEHAT Platform



# Data Mapping Flow



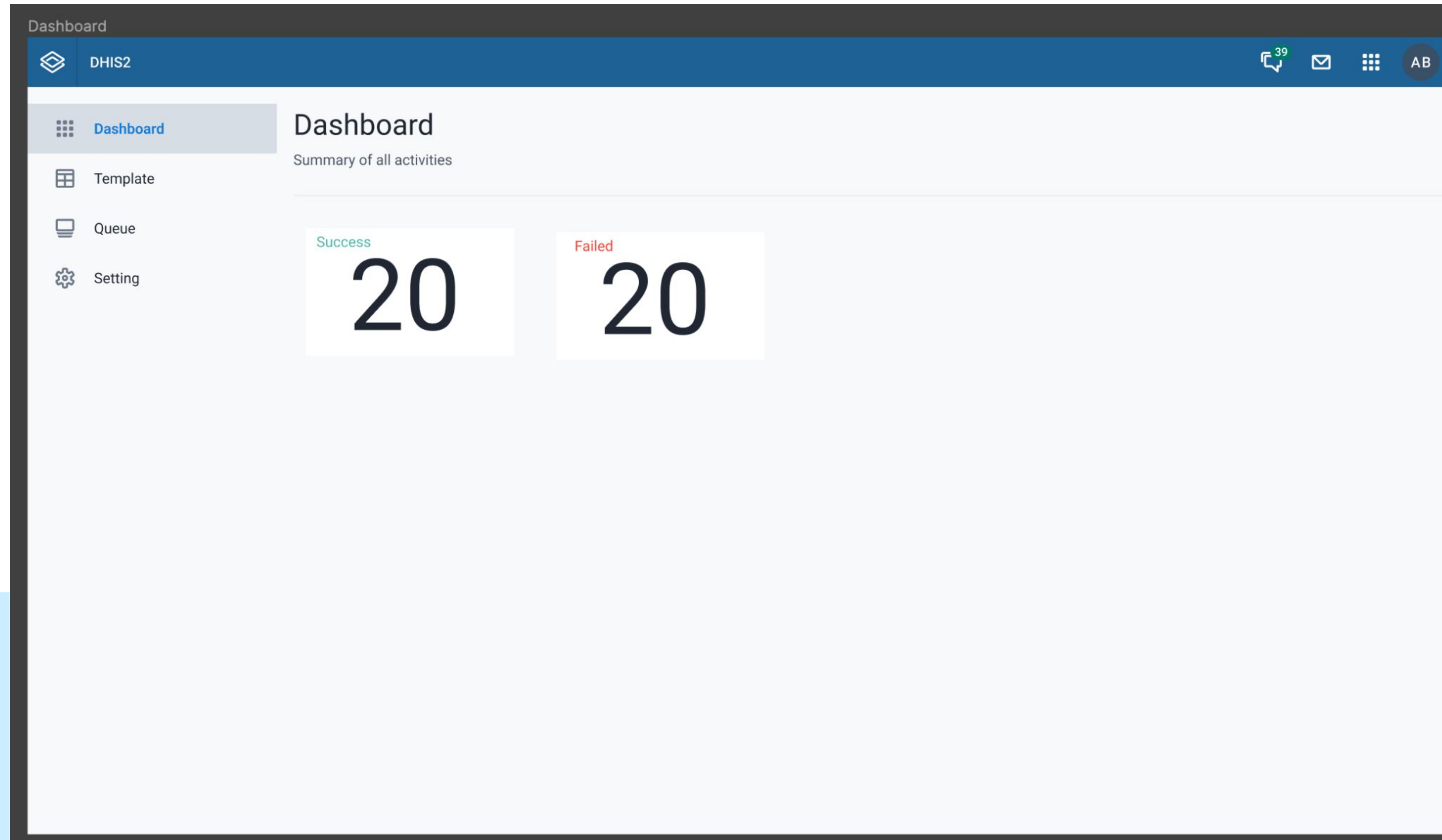
## DHIS2 Json Structure

- Clinics/Health Facilities taken from DHIS2 Organisation Units.
- Patients taken from Trackedentityinstances.
- Diagnosage taken from events that tied to Patient trackedentities,

- **Json Template** provided metadata data mapping template scheme from DHIS2 to SatuSehat Json Simplify.

- **JSON Simplify** provided by DHIS2 to SatuSehat backend that used for easier data mapping.
- From this json simplify, DHIS2 to SatuSehat backend will convert it to SatuSehat Json standard.

**SatuSehat Json** is json standard that contains complex json structure. Difficult to use for data mapping.



**Dashboard**, this page will show the summary of all queue event was executed by DHIS2 to FHIR Backend.

FHIR integration - Mapping

DHIS2

Dashboard

Template

Queue

Setting

## Template

Mapping data

Select DHIS2 Resource

Select Program

Select Program Stage

Select SatuSehat Resource

NIK

Nama Lengkap

Jenis Kelamin

Tanggal Lahir

Patient.Identifier

Patient.name

Patient.gender

Patient.birthdate

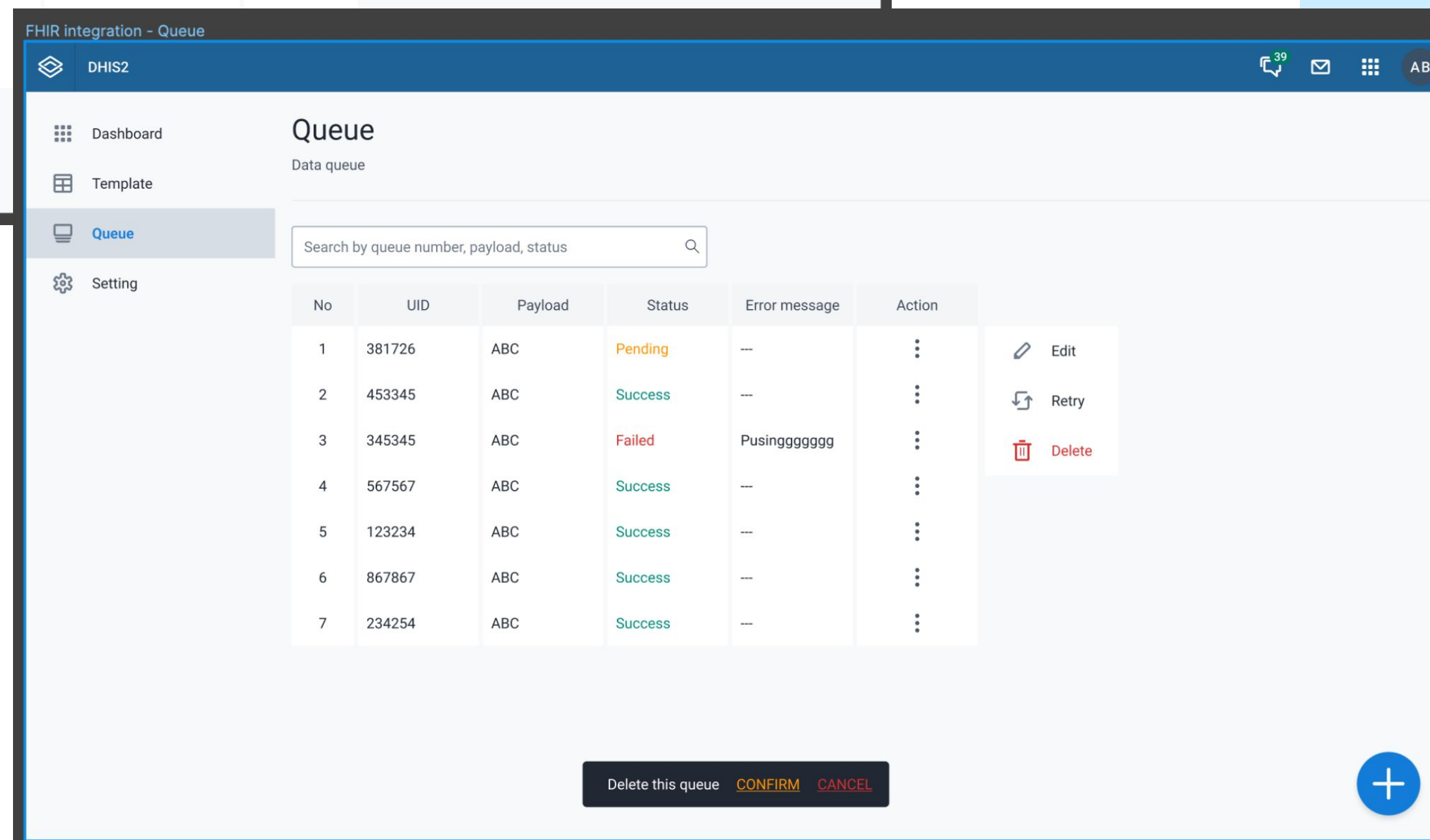
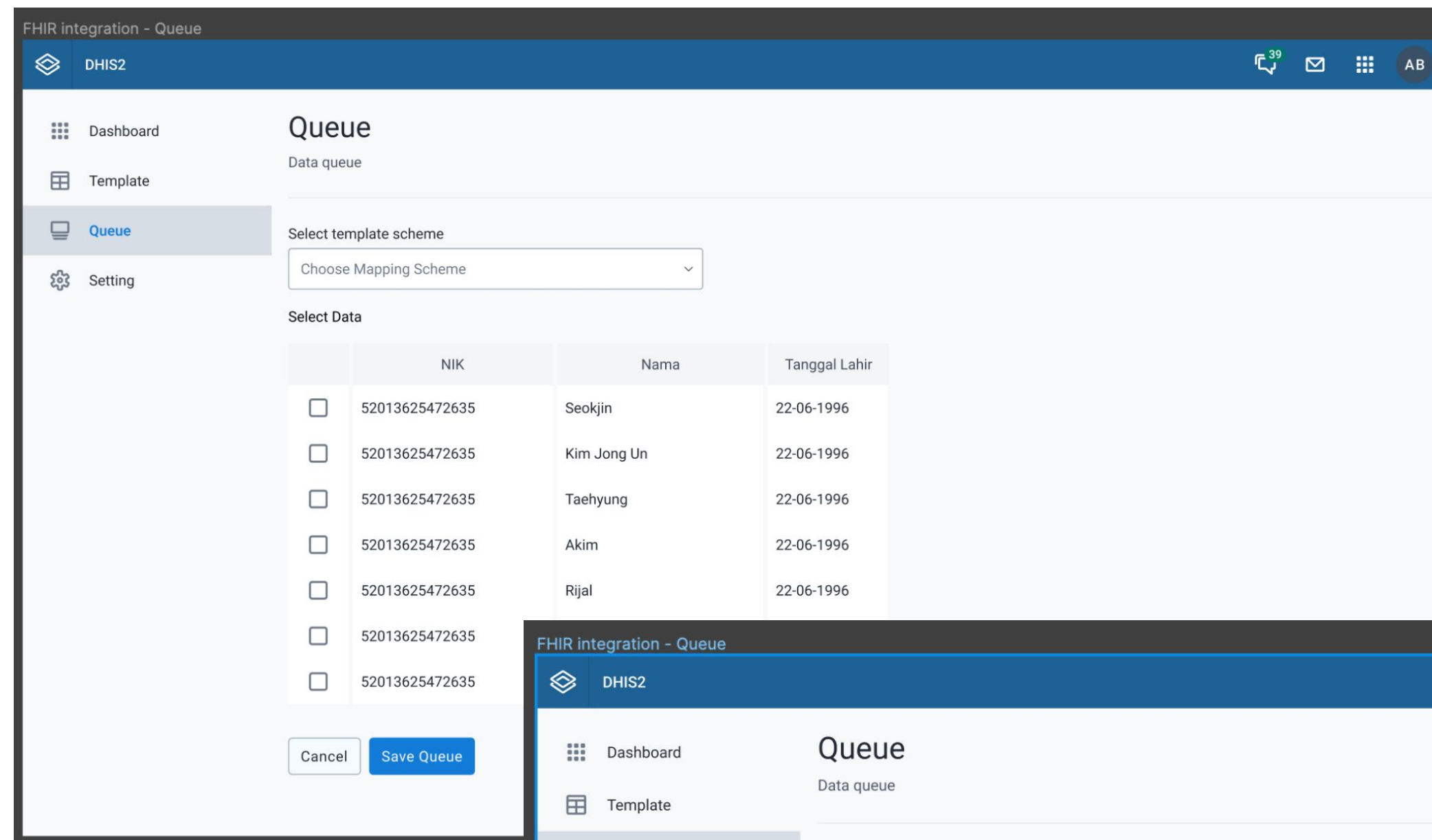
Cancel Save Mapping

Mapping saved

- **Template**, is a feature in DHIS2 to FHIR APP, to create a template scheme for data mapping from DHIS2 to FHIR json simplify (provided by DHIS2 to FHIR Backend).
- For DHIS2 resource will be a dropdown with values OrganisationUnits, TrackedEntity, and Event.
- If OrganisationUnits is selected, the mapping field will taken from root json field from OrganisationUnits.
- If TrackedEntity is selected, the mapping field will taken from attributes field from TrackedEntityInstances.
- If Event is selected, the mapping field will taken from dataValues field from Event.

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- **Queue**, is a feature in DHIS2 to FHIR APP, to create a queue from selected scheme template. The page will show the result of data mapping that follow the json simplify structure of FHIR resource.
- **Queue list**, is a feature in DHIS2 to FHIR APP, to show the list of created queue with it's status.

Settings

DHIS2

Dashboard

Template

Queue

Setting

## FHIR Integration

Please connect to the FHIR server

### Connect to a health data server

DHIS2 to FHIR Backend URL

FHIR URL

Client ID

Client Secret

Connect

The test connection only checks the connection status

Server successfully connected ×

**Setting Page** to configure the DHIS2 to SatuSehat backend and SatuSehat/FHIR client ID and Secret ID.



**THANK YOU :)**