



The Role of IT in Improving Healthcare Services and Achieving the Highest Degree of Public Health in Indonesia

Ministry of Health, Indonesia
2024

Challenges in Health Data and Systems

Digital Technology problem disturbs Services Efficiency

1. Primary Healthcare



Health workers in Puskesmas must operate and data input into more than **70 Apps / Systems**

2. Secondary Healthcare



Hospital officer must operate and data input into more than **50 apps / Systems**

3. Pharmaceutical and Medical Devices



There's no standard code for company, product, materials for pharmaceutical and medical tools

4. Health Resilience



Surveillance system **is not real time and integrated yet**

5. Health Human Capital



Health human capital data is **not integrated, duplicated, or even unregistered at all**

6. Health Financing



Existing health finance data is **not precise and haven't fulfill** the information and analytical needs

7. Health Innovation Ecosystem



Currently, there are no regulations and governance on health data in the implementation of health innovations in the field

8. Biotechnology



Biotechnology product **downstream** and **genome data governance** for future need to be enhanced

The Urgency of Health Technology Transformation

60-70

Information Systems at Health Facilities, Too Many and Burdening Work for Health Workers.

The health centre or hospital staff **must input 60-70 health information systems daily.**

Source: Internal Research

400

Health Information System Not Integrated at the Center

The non-integration of systems at the central level results in duplication and inefficient management of health data and information

Source: Internal Research

2 Billion

Rupiah Paper costs / year issued by type C hospitals due to still using manual management (not yet digital)

The high costs incurred by health facilities due to manual management of EMR do not include the inefficient burden on health workers.s

Source: Siris Research

1



The public **cannot monitor personal health history.** It is because medical records are scattered in various health services that have been accessed.

2



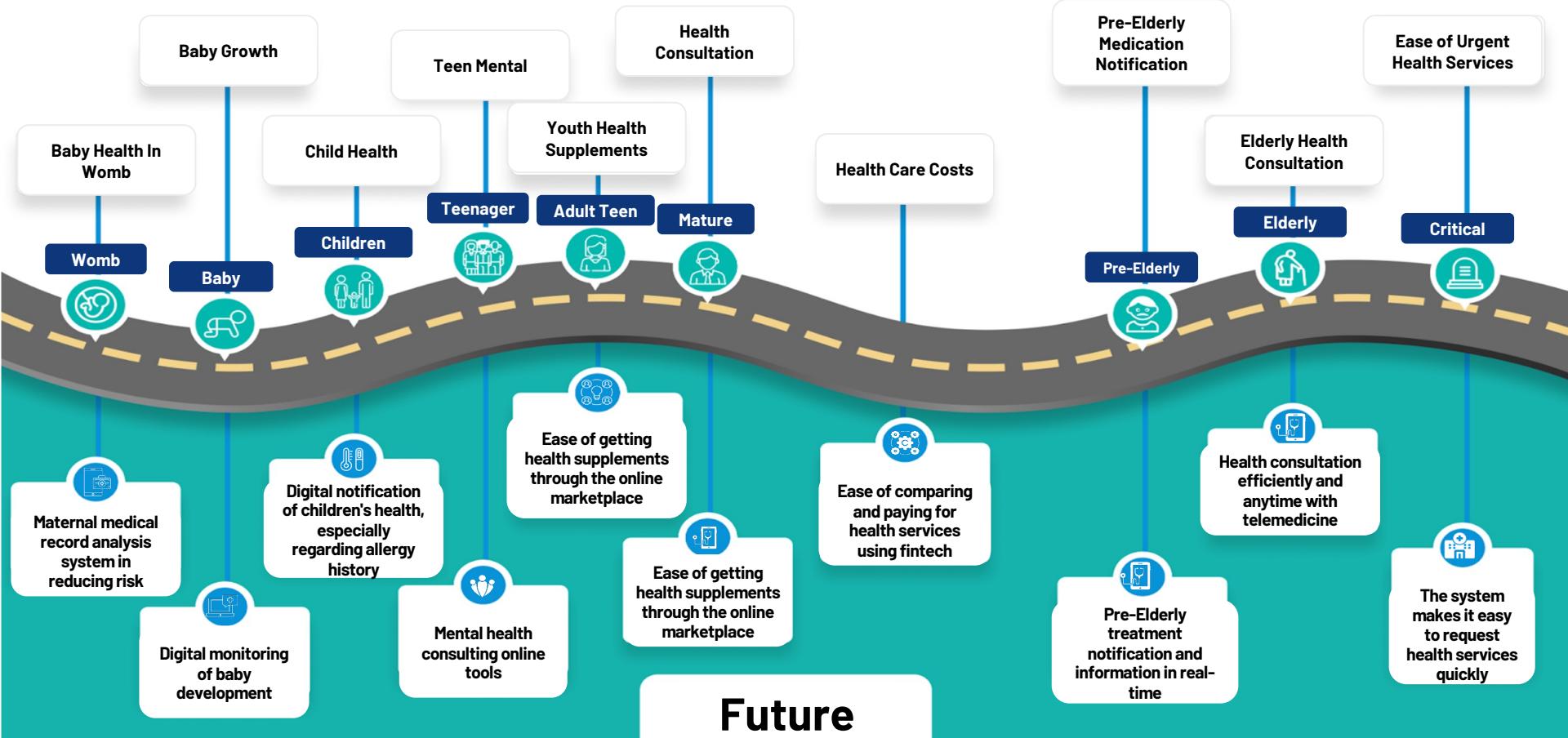
Health education that is not given personally. So often, the **health education that people get is not right on target.**

3



Personal health data that is **not integrated and has low interoperability** has implications for **redundancy/inefficiency in health administration.**

Digitizing Health From the Beginning of Life



3 Tasks from the Minister

Beginning of Digital Health Transformation Journey Indonesia



Develop Digital Collaboration to Overcome COVID-19 Pandemic



Setting up Team and Regulation to Support Health Transformation



Building a Roadmap for Digital Transformation in Health Sector





Develop Digital Collaboration to Overcome COVID-19 Pandemic

Development of Digital Ecosystem for Handling COVID-19



Increase tracing ratio with local tracer, Army & Police



TRACING



HOSPITAL / CLINIC / LAB

TESTING



NAR PCR



NAR ANTIGEN



For validation of identity data based on NIK, integration is carried out with the Ministry of Home Affairs



TELEMEDICINE



TREATMENT



PeduliLindungi

Free Telemedicine service from consult until medicine delivery



Monitor the rate of vaccination with an integrated logistics system and dashboard

VACCINATION



Cooperation with application platform providers to promote digital care for protection according to **KMK No. HK.01.07 Menkes-5680-2021**

COLLABORATIVE PLATFORM FOR HEALTH WORKER - CITIZEN - GOVERNMENT

Digital health protocol collaboration for travelers



The whole process is supported by the National Data Center (PDN) provided by the Ministry of Communication and Information with data security support from BSSN



- Chatbot Services
- WhatsApp Authentication (OTP)
- Helpdesk

Success Story : PeduliLindungi Application

Technology governance in supporting the COVID-19 pandemic handling

1 DIGITAL TRACING

A contact tracing feature that utilizes Bluetooth signal exchange at close range to anonymously identify close contacts.

4 VACCINATION

Vaccine Tickets (including Boosters), Nearest Vaccine Locations and Vaccine Certificates are integrated with PCare and KPCPEN systems. Includes WHO and EU standard vaccine certificates.

2 ELECTRONIC HEALTH ALERT RECORD & MOBILITY SCREENING

Tools for the Indonesian government to minimize the risk of transmission of COVID-19

3 COVID-19 TESTING

User PCR/Antigen test results are directly connected to the laboratory input system via New All Record (NAR)

5 AVAILABILITY OF BED RS

Connect with SIRANAP to find out the availability of hospital beds in real-time

6 TELEMEDICINE

Integrated with Isoman services by displaying a list of 17 Telemedicine Service Providers in collaboration with the Ministry of Health.

> 102 M

Total users

8 M

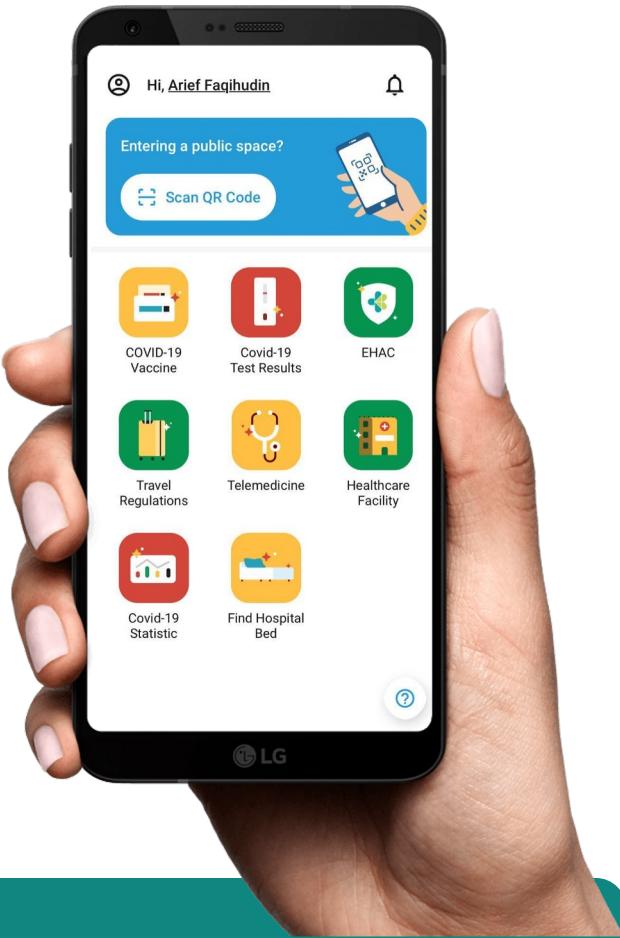
Average DAU

> 400 K

Average sample inputted to Lab System

> 1,5 M

Average new users are registered in the Vaccination System every day



Indonesia is included in the **top five countries** with the highest number of vaccinations in the world. Recorded vaccination coverage of **166.65 million targets**.

Transforming PeduliLindungi into SATUSEHAT Mobile

Realizing individual-based and personalized health data

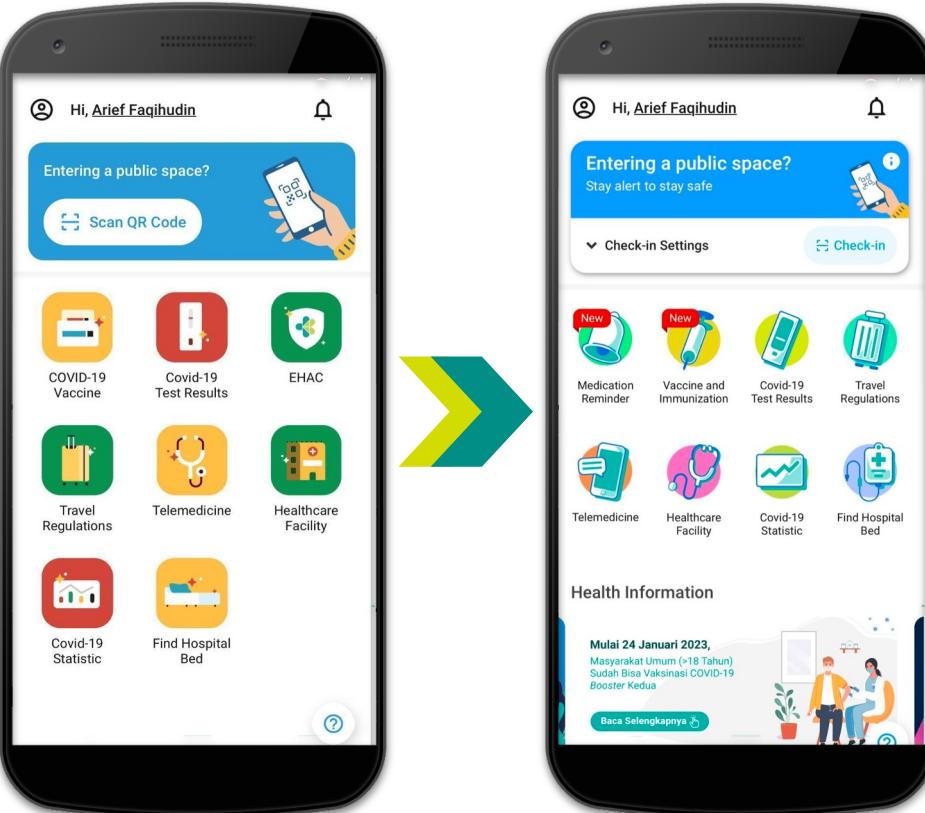


Application of individual health services related to COVID-19 and proven in handling COVID-19

> 105 Mio
Total of users

8 Mio
Average daily users during the peak of COVID-19

- 1 Digital Tracing
- 2 COVID-19 Testing
- 3 Self-Isolated Telemedicine
- 4 Integrated Vaccination System



**SATUSEHAT
Mobile**

Developed as a Personal Health Service application for the community for broader functions.

- 1 Medical Record
- 2 Health Promotion
- 3 Medication Profile
- 4 Health Diary
- 5 Hospital Bed Availability
- 6 Early Warning System
- 7 Tracing & Testing
- 8 Integrated Telemedicine
- 9 Personalized Health Education

Accelerating the Digital Transformation of Health in Indonesia

Crisis is the right time to make changes



1

The pandemic awakens the importance of Health Sector Resilience

- The pandemic shows systemic problems that must be fixed
- It is necessary to increase the capacity and resilience of the health system

2

Health system Indonesia is ready to Transform

- Digital technology is widely available and the public is more open to change
- The pandemic encourages the acceleration of the implementation of the digital health transformation to be carried out immediately

3

Collaboration is needed Towards Healthy Indonesia

- Towards a Healthy Indonesia, the Ministry of Health cannot handle it alone, so cooperation with all health industry players is needed
- The Ministry of Health must build a platform to connect various data and systems in the health ecosystem in a single unit



Digital Transformation Acceleration becomes one **agenda of national priority and importance** after the COVID-19 Pandemic.



Setting up Team and Regulation to Support Health Transformation



Digital Transformation Office (DTO)

Dedicated Team to Accelerate Health Digital Transformation



1

Service-Based National Health Data Integration

Consolidation and Standardization of Electronic Medical Record Data in the SATUSEHAT platform

2

Reporting Process Efficiency to Support Data Analysis and Decision Making

App transformation to support the efficiency of the Health data reporting process that supports the needs of program and policy analysis

3

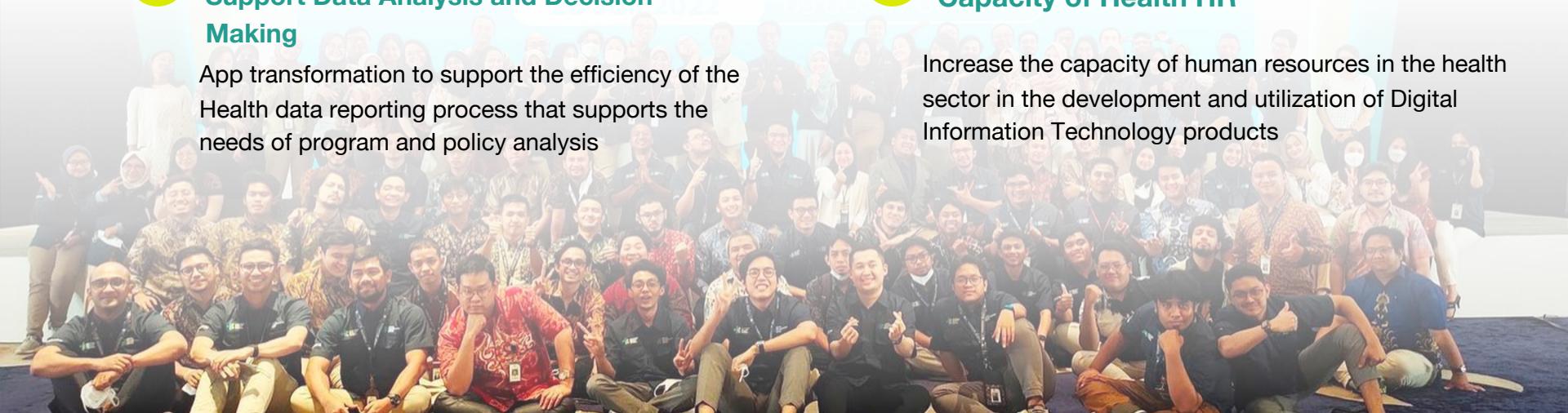
Health Digital Ecosystem Collaboration

Building partnerships with health industry players to create a health care ecosystem that continues to grow

4

Increasing the Digital Capacity of Health HR

Increase the capacity of human resources in the health sector in the development and utilization of Digital Information Technology products



Regulations to Support the Transformation of Health Technology

Support Implementation of SATUSEHAT and Electronic Medical Record (EMR)

Law No. 27/2022 of
Personal Data
Protection

Law No. 36/2009 of
Health

Law No. 23/2014 of
Regional
Administrations
(Pemda)

Government
Regulation No.
46/2014 of Health
Information System

Presidential
Regulation No.
95/2018 of e-
Government (SPBE)

Presidential
Regulation No.
39/2019 of
One Data Indonesia



1 SATUSEHAT
Platform

2 SATUSEHAT Mobile

3 Data Standardization
(ICD, Metadata, LOINC, HL7-
FHIR, etc)

4 Research &
Policy

MoH
Regulation on
Medical Record

Published

MoH Regulation
on One Health
Data

Published

MoH Decree on
e-Government
and Digital
Health
Transformation

Published

MoH Decree on
Data and
Metadata
Standardization
for e-Medical
Record

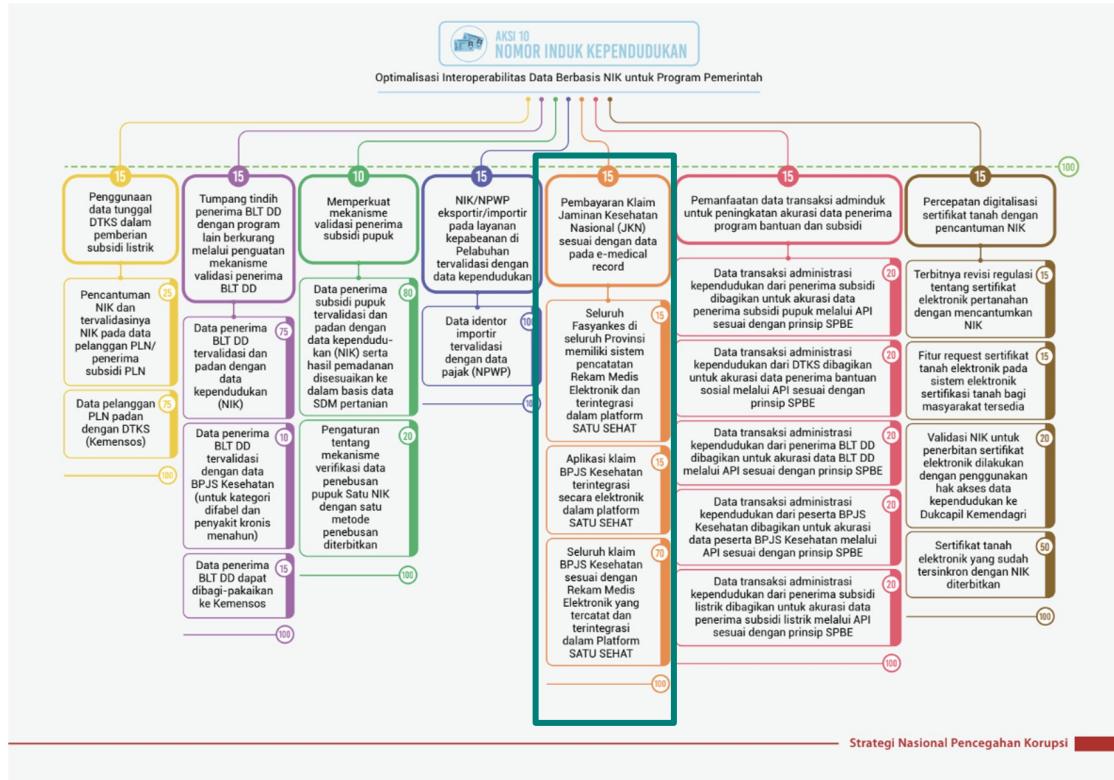
Published

Presidential
Instruction No.
1/2022 of Nation
Health Insurance
(JKN)

In the process of bridging
the Ministry of Health and
BPJS

Supporting Regulations

SATUSEHAT becomes a reference for accountability in combating corruption in Indonesia, integrated with BPJS claims



KPK
Komisi Pemberantasan Korupsi



Guru Besar
Dalam Negeri



panrb

Kementerian PPN/Bappenas



KANTOR STAF PRESIDEN

KEPUTUSAN BERSAMA

PIMPINAN KOMISI PEMBERANTASAN KORUPSI, MENTERI PERENCANAAN PEMBANGUNAN NASIONAL/KEPALA BADAN PERENCANAAN PEMBANGUNAN NASIONAL, MENTERI DALAM NEGERI, MENTERI PENDAYAGUNAAN APARATUR NEGARA DAN REFORMASI BIROKRASI, DAN KEPALA STAF KEPRESIDENAN

NOMOR 1/GAI.00/01/12/2022
NOMOR KEP.148A/M.PPN/HK/12/2022
NOMOR 100.4.3-6292 TAHUN 2022
NOMOR 4 TAHUN 2022
NOMOR 1/KB TAHUN 2022

TENTANG

AKSI PENCEGAHAN KORUPSI TAHUN 2023-2024

PIMPINAN KOMISI PEMBERANTASAN KORUPSI, MENTERI PERENCANAAN PEMBANGUNAN NASIONAL/KEPALA BADAN PERENCANAAN PEMBANGUNAN NASIONAL, MENTERI DALAM NEGERI, MENTERI PENDAYAGUNAAN APARATUR NEGARA DAN REFORMASI BIROKRASI, DAN KEPALA STAF KEPRESIDENAN,



Building a Roadmap for Digital Transformation in Health Sector

Blueprint of Digital Health Transformation Strategy 2024

Transform healthcare delivery in Indonesia



Currently preparing a blueprint for the period of 2024-2029

A. Integration and Development of Health Data System



1. National One Health Data

Implementation of single identity health record



2. Health Data System Integration

Integration of electronic system services between health institutions, government, and health industry



3. Development of Health Big Data Analysis System

Development of AI based big data ecosystem at central and local governments

B. Integration and Development of Healthcare Application System



4. Integrated Health Applications

Digitalization and integration of health care information system (puskesmas, clinic, hospital, lab, and dispensary)



5. Integration of Business Process and HR Improvement

Business Process Integration and HR Improvement on health informatics



6. Health Application Helpdesk

Availability of Helpdesk and customer management system for health applications

C. Health Technology Ecosystem Development



7. Expansion of telemedicine technology

Expansion of telemedicine from health facilities to the public



8. IT ecosystem for health and biotechnology

Regulation and implementation of regulatory sandbox prioritizing health technology 4.0



9. Integration of health biotechnology research

Integration of biotechnology R&D and healthcare providers

OUTCOME

Improved health policy based on accurate, update and complete data

OUTCOME

Efficient health services at pustakmas, clinic, hospital, lab, and dispensary

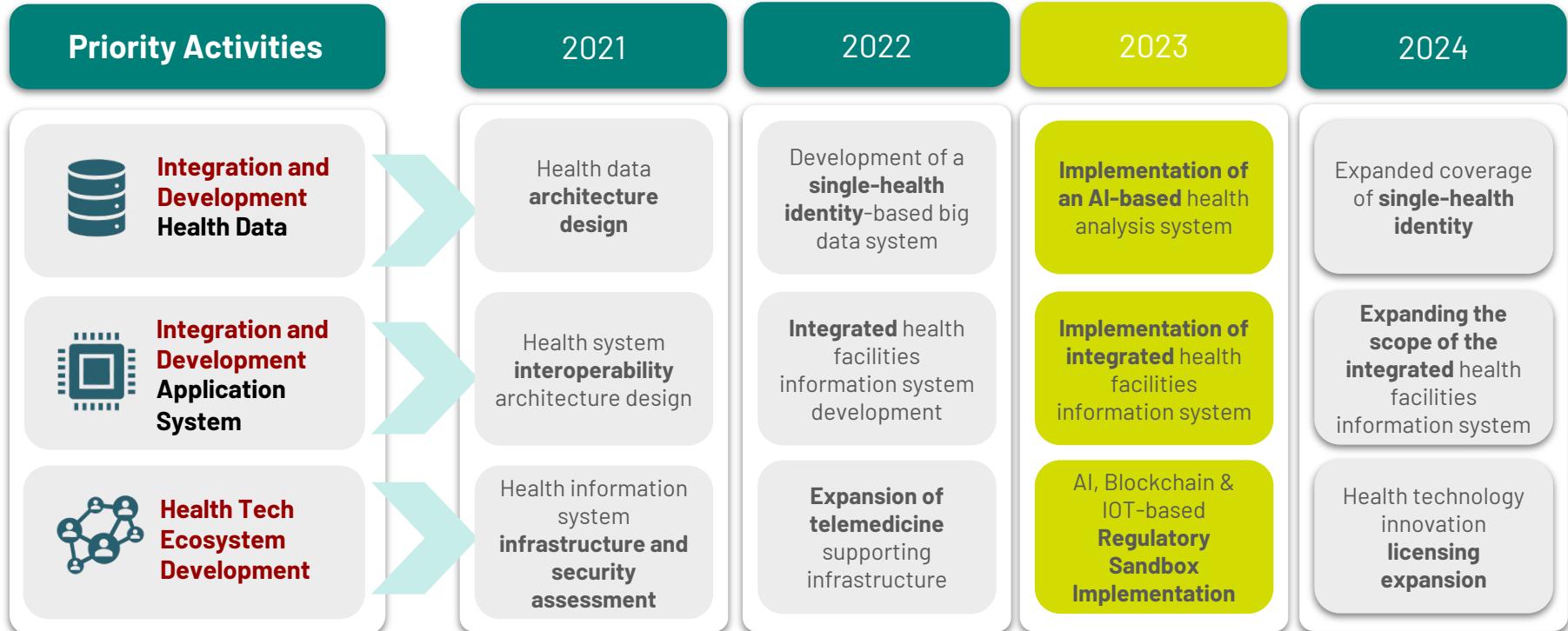
OUTCOME

Collaboration and digital health ecosystem involving the government, industry and the public

Download on <http://dto.kemkes.go.id/>

Indonesia's Health Transformation Roadmap

Integrate all health data, digitizing the healthcare services, and encourage the health ecosystem





SATUSEHAT Platform (Indonesia Health Service)



Development of an Individual-Based Integrated Digital Health Service Platform



DIGITALIZATION AND INTEGRATION

The SATUSEHAT platform benefits all parties in the health industry ecosystem (hospitals, health centers, startups, pharmacies, health offices, laboratories, and so forth.)



SERVICE STANDARDIZATION

The SATUSEHAT platform provides standard specifications and mechanisms for business processes, data, and security.



CONVENIENCE AND FLEXIBILITY OF THE DIGITAL HEALTH INDUSTRY

Provide space for the industrial ecosystem to develop an RME system for Health Facilities as long as it follows the specified specifications and information exchange mechanism.



INDIVIDUAL DATA-BASED HEALTH

All SATUSEHAT integrated health data is based on individual data using National Identity Number (NIK) as a unique identifier for each individual's health information to ensure continuity to health facilities and personal health services.

SATUSEHAT : Health Data Interoperability Platform

Linking and empowering all health data providers and users



KEMENTERIAN
KESEHATAN
REPUBLIK
INDONESIA

Healthcare Facilities

10K+
Community Health Centres

11K+
Clinics

5K+
General Practitioners

~3K
Hospitals

1,4K
Laboratories

30K+
Pharmacies

Integration Target

Data Sources

Integration & Standardization (HL7 FHIR)

Health Industries

100+

Health Systems

Laboratorium

Biotech

Insurance Company

Health-Tech/
Startup

SATUSEHAT Platform

Integration & Standardization (HL7 FHIR)

Data Utilization

Citizen

SATUSEHAT Mobile

- Personal Health Record
- Health Promotion
- Integration of Wearable Devices



Government

SATUSEHAT Dashboard

Assisting the Government in making health policies based on evidence and data (Evidence Based Policy)



Terminology Standard Used in SATUSEHAT

ICD-10

Diagnosis
Standard

ICD-9-CM

Medical Procedures
and Actions
Standard

LOINC

Laboratory,
Radiology Test and
Examination
Standard

DICOM

Health Digital
Imaging

SNOMED-CT

Terminology



SATUSEHAT Data Standardization and Management

Master Data Management to build reliable data ecosystem for further use



Patient Data (Master Patient Index)

- Product data specially designed as a standard for patient data to be validated by National Civil Registry for data related to demographics
- Can be used as the main standard for patient data by all Health Service Facilities in Indonesia via SATUSEHAT



Health Facilities Data

- Master data specially designed as a standard for Health Service Facility data which consists of 35 types of healthcare facilities.
- This data is compiled based on various sources such as Healthcare Workers Information System, Online Hospital, SIMADA, and others



Health Human Resources Data

- Specially designed data product as a standard data index for health workers combined from various data sources for health personnel (Name, STR, SIP, etc.)



Data on Medical Devices and Medicines (KFA Dictionary)

- Data product designed as Master data for Pharmacy, Drugs, and Medical Devices collected from various data sources as reference standards for drug data (active substance content, size, volume, etc.) and medical devices



Financing Data

- The data product is designed as a Financing Master data that can be used by all Health Facilities and can be used as a standard for the preparation of cost formats for services, actions, and others.



Service Data

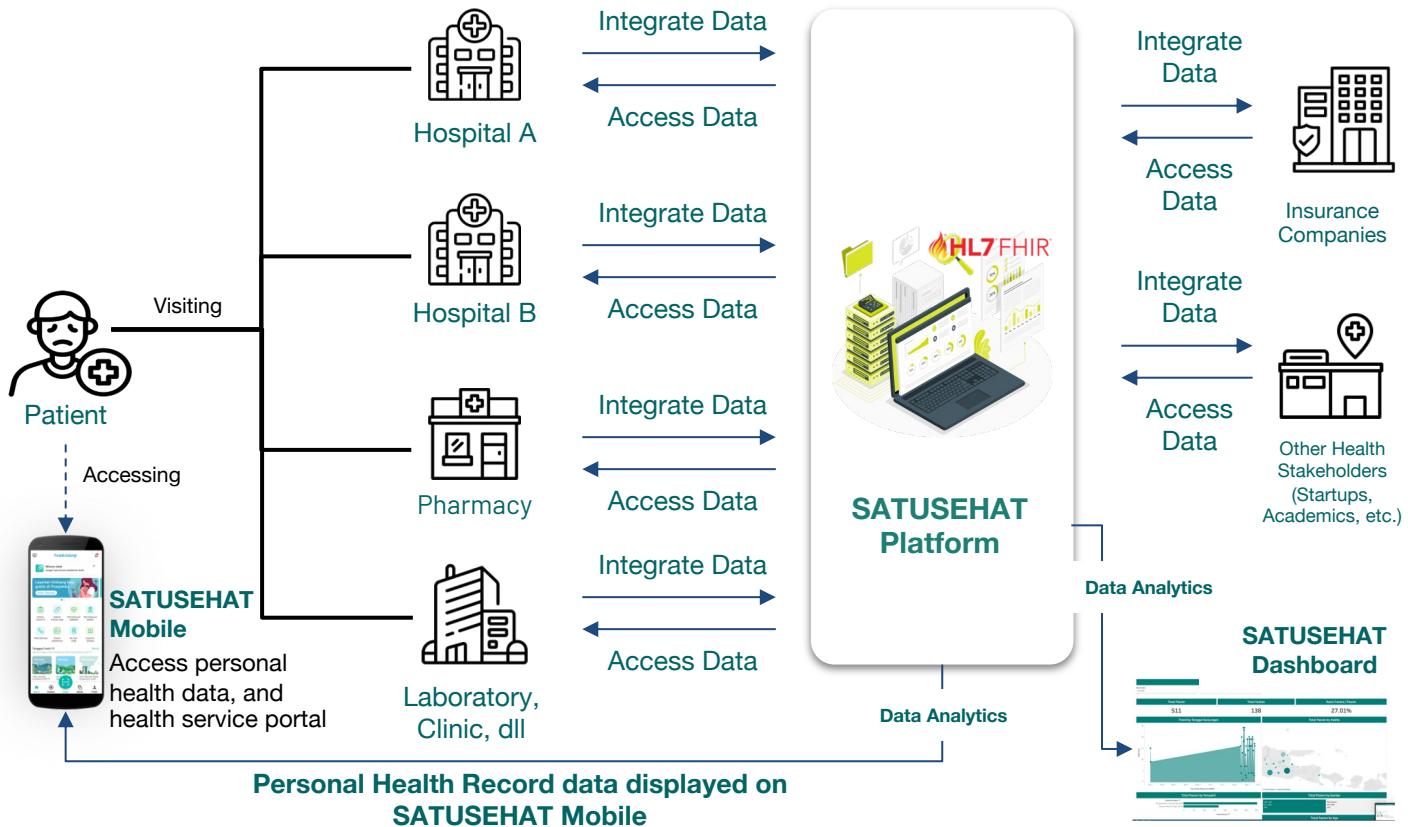
- Data products that are designed as Service Master data that can be used by all Health Facilities and can be used as service coding standards.



Health Tech Transformation: Progress & Targets

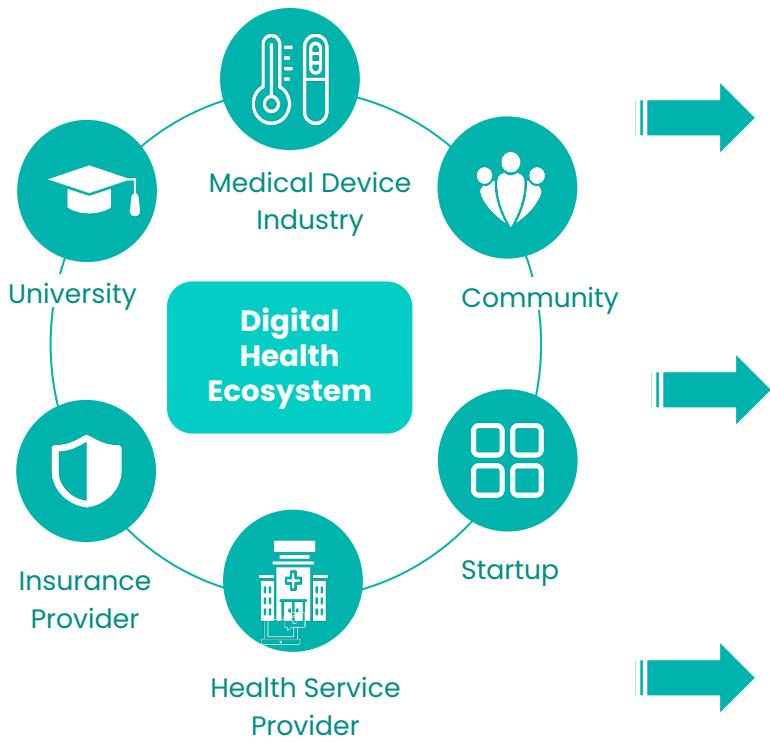
Data integration can increase the efficiency and quality of health services

- Healthcare facilities only **need to input data once** and share various integrated data in SATUSEHAT
- Patients get health services that are **more comprehensive and interconnected** with the results of integrated data in SATUSEHAT



Health Transformation Collaboration Opportunity

The Ministry of Health encourages collaboration to achieve health transformation



Call for Collaboration

Knowledge / Expertise Collaboration

Collaboration on digital transformation projects **as experts**

2

Resource Collaboration

Collaborative **human and capital resource support** for a certain period of time who are directly involved every day in the digital transformation program

3

Implementation Collaboration

Collaboration as implementing partners for **digitizing 60K health facilities and standardizing and integrating the health big data**

“

**Collaboration is very important in
order to accelerate Health
Transformation in Indonesia. Let's
together we can build a stronger and
healthier Indonesia.**

”

stunting merupakan masalah gizi kronis, sehingga dapat dicegah jika ditangani dengan tepat dan cepat



Bersama-sama berupaya
pemerintah daerah, mitra
pembangunan,
civil society organization
dilakukan terlibat dalam
mendukung intervensi
dalam menurangi
stunting.

- Kab/kota dengan
kapasitas fiskal yang
tinggi harus alokasikan
kegiatan-kegiatan ini
untuk mencegah stunting.
- Untuk mendeteksi dan
memeriksa masalah gizi
dilakukan oleh tenaga kesehatan
Pustakar kader terlatih
untuk memiliki standarisasi
dan tetapkan pukokmas
terperinci.



#SATUSEHATSemuaSehat



@DTOkemkes



KEMENTERIAN
KESEHATAN
REPUBLIK
INDONESIA