Health Technology Transformation through Integration and Standardization of System & Data

Setiaji, ST., M.Si
Chief of Digital Transformation Office
Ministry of Health, Indonesia
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**Accelerating the Digital Transformation of Health in Indonesia**

Crisis is the right time to make changes

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<th>1</th>
<th>The pandemic awakens the importance of Health Sector Resilience</th>
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<td>• The pandemic shows systemic problems that must be fixed</td>
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<td>• It is necessary to increase the capacity and resilience of the health system</td>
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<th>2</th>
<th>Health system Indonesia is ready to Transform</th>
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<td>• Digital technology is widely available and the public is more open to change</td>
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<td>• The pandemic encourages the acceleration of the implementation of the digital health transformation to be carried out immediately</td>
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<th>Collaboration is needed Towards Healthy Indonesia</th>
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<td>• Towards a Healthy Indonesia, the Ministry of Health cannot handle it alone, so cooperation with all health industry players is needed</td>
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<td>• The Ministry of Health must build a platform to connect various data and systems in the health ecosystem in a single unit</td>
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Digital Transformation Acceleration be one agenda of national priority and importance after the COVID - 19 Pandemic.
Ministry of Health is committed to Health System Transformation

6 pillars of transformation to support Indonesia's health

Vision
In line with the President's vision to create a healthy, productive, independent and equitable Indonesian health society

1. Primary services transformation
   - Health Education
   - Primary Prevention
   - Secondary Prevention
   - Primary services's capacity and capability improvement

2. Secondary services transformation
   - Secondary & tertiary access and quality improvement

3. Health security system transformation
   - Improving Pharmaceutical & medical equipment sector resilience
   - Strengthening of lab-based surveillance and resilience of emergency response

4. Health financing system transformation

5. Health Human Capital Transformation

6. Health-tech transformation
   - Health Tech
   - Biotech

6 main category

*National Mid Term Development Plan
Digitizing Health from Early Life

The patient has a continuous medical record.
Launching Blueprint of Digital Health Transformation Strategy 2024

Transform healthcare delivery in Indonesia

Download on http://dto.kemkes.go.id/
Priority Activities

Integration and Development
Health Data

Integration and Development
Application System

Ecosystem Development
Health Technology

System development as the focus of activities in 2022

2021
Health data architecture design

2022
Development of a single-health identity-based big data system

2023
Implementation of an AI-based health analysis system

2024
Expanded coverage of single-health identity

Expanded coverage of single-health identity

The focus in 2022 is system development from architectural design already made in 2021
To achieve our transformation goals we developed an integrated and standardized platform as strategic approach.
SatuSehat Platform (Indonesia Health Services)
National Health Big Data Platform

SatuSehat

Citizen Health App (CHA)

Partner Systems

Public as Health Service User

Health Service Provider (Health Facilities, Startup, Insurance, etc)

Integration
SatuSehat ensure data interoperability of the entire ecosystem of healthcare industry so it can be used more widely for the better outcome

Standardization
Provide standardized specifications and mechanisms for business processes, data, technical and security

Source: Ministry of Health

10,260 Puskesmas
11,347 Clinics
2,985 Hospitals
5,862 GP & Dentist Clinics
1,400 Laboratories
30,199 Pharmacies

Source: Ministry of Health
**Integrated Architecture of SatuSehat**

SatuSehat connects everyone to benefit everyone

- **Patient/User**
  - Personal Health Record
  - Health Promotion
  - Personalized Education
  - Wearable Devices Integration
  - etc.

- **Health Facilities**
  
- **Integrated EMR**
  Precise and coherent patients' medical treatment record across any facilities can be used to support more comprehensive clinical decision

- **Efficient data input** due to integrated system allow medical personnel to put more focus on services than data input and administrative stuff

**Government**

- **Integrated dashboard** for evidence-based policy and data-driven decision-making

- **Precise and Up-to-date information** for detecting, predicting, prescribing any health problem and support health resilience system

**Health Industry**

Insight sharing and utilization to strengthen collaboration

- Insurance Company
- Health - Tech
- Pharmacy
- Laboratory
- Biotech Lab
- etc.

**Health industry player can share their data with government through IHS to enrich each other's insight**
Health service personnel can inputs data more efficient due to data sharing.

Patients will get more comprehensive and personalized health services and clinical treatment due to personal health record data sharing.

- **JKN**: National Public Health Insurance
- **Source**: BPJS Kesehatan

**392,9 mio** visits to health facilities with JKN in 2021 (~1,1 mio visits/day)*

*Personal Health Record and health services information can be accessed by user in CHA*
Integration Progress

Health facilities has integrated with SatuSehat (IHS), and will be more

Piloting SatuSehat Integration

SatuSehat Integration in *environment production* in several phases

- **1st phase**: patients’ registration and diagnose data
- **2nd phase**: medical procedure, vital condition, and dietary data
- **3rd phase**: lab observation, radiology data
- **4th phase**: allergy, physical condition data
- **5th phase**: drugs and pharmaceutical data

Next Action

41 Hospital
Alpha Piloting

31 Hospital
Beta Piloting

Juli 2022
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 DUKCAPI for data related to demographics
- Can be used as the main standard for patient data by all Health Service Facilities in Indonesia via IHS

**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 SISDMK, RS Online, 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 (Kf+A Dictionary)**
- Data product designed as Master data for Pharmacy, Drugs, and Medical Devices collected from various data sources such as BPOM, IKPP 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.
SatuSehat (IHS) Data Standardization Use Case
Data Integration Management with Pharmaceutical and Medical Tool Dictionary (kf+a)

Reference used in Kf+a:
- NDFA Regulation Number 24/2017 (dosage form & drug registration procedures)
- ATC / DDD - WHO (Chemical classification system of anatomical therapy drugs)
- RxNorm NLM | NIH - US (active substances integrated with ATC)
- UCUM (Measurement unit)
- CVX - NCIRD (Vaccines)

Kf+a provides unique code that is specific for each drug, drug raw material and medical device with acknowledged standards and references, to be used by related institutions/agencies.
High quality and integrated health data will benefit all parties in the health sector.
SatuSehat (IHS) Supports Health Policy

Integrated - reliable data for decision making and health policy

Patient Data
Health Facility Data
Health Workforce Data
Medical devices Data
Drug Data
Financing Data
Service and Outcome Data

Policy & decision - making
Health service enhancement
Facilities outreach & accessibility
Prescriptive and health resilience
Pharmaceutical & medical tools
Health sector planning & budgeting
.etc
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

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

Implementation Collaboration
Collaboration as implementing partners for health digital transformation projects