



# IPS & HAJ Phase One Journey

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# IHE<sup>®</sup> | EXPERIENCE EUROPE | DAYS | 3-4 JUNE 2024

## IPS & HAJ Phase One Journey

Sponsored by



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## Makkah & Haj

- **Mecca** ([/'mɛkə/](#); officially **Makkah al-Mukarramah**,<sup>[a]</sup> commonly shortened to **Makkah**<sup>[b]</sup>) is the capital of [Mecca Province](#) in the [Hejaz](#) region of western [Saudi Arabia](#) and the [holiest city in Islam](#).<sup>[3]</sup> It is 70 km (43 mi) inland from [Jeddah](#) on the [Red Sea](#), in a narrow valley 277 m (909 ft) above sea level. Its last recorded population was 2,385,509 in 2022. Its metropolitan population in 2022 is 2.4 million, making it the [third-most populated city in Saudi Arabia](#) after [Riyadh](#) and Jeddah. Around 44.5% of the population are [Saudi citizens](#) and around 55.5% are foreigners from other [Muslim countries](#).<sup>[4]</sup> Pilgrims more than triple the population number every year during the [Hajj pilgrimage](#), observed in the twelfth [Hijri](#) month of [Dhūl-Hijjah](#).<sup>[citation needed]</sup> With over 10.8 million international visitors in 2023, Mecca was one of the 10 [most visited cities](#) in the world.<sup>[5]</sup> (Ref.: Wikipedia)

## Makkah & Haj





## Makkah & Haj



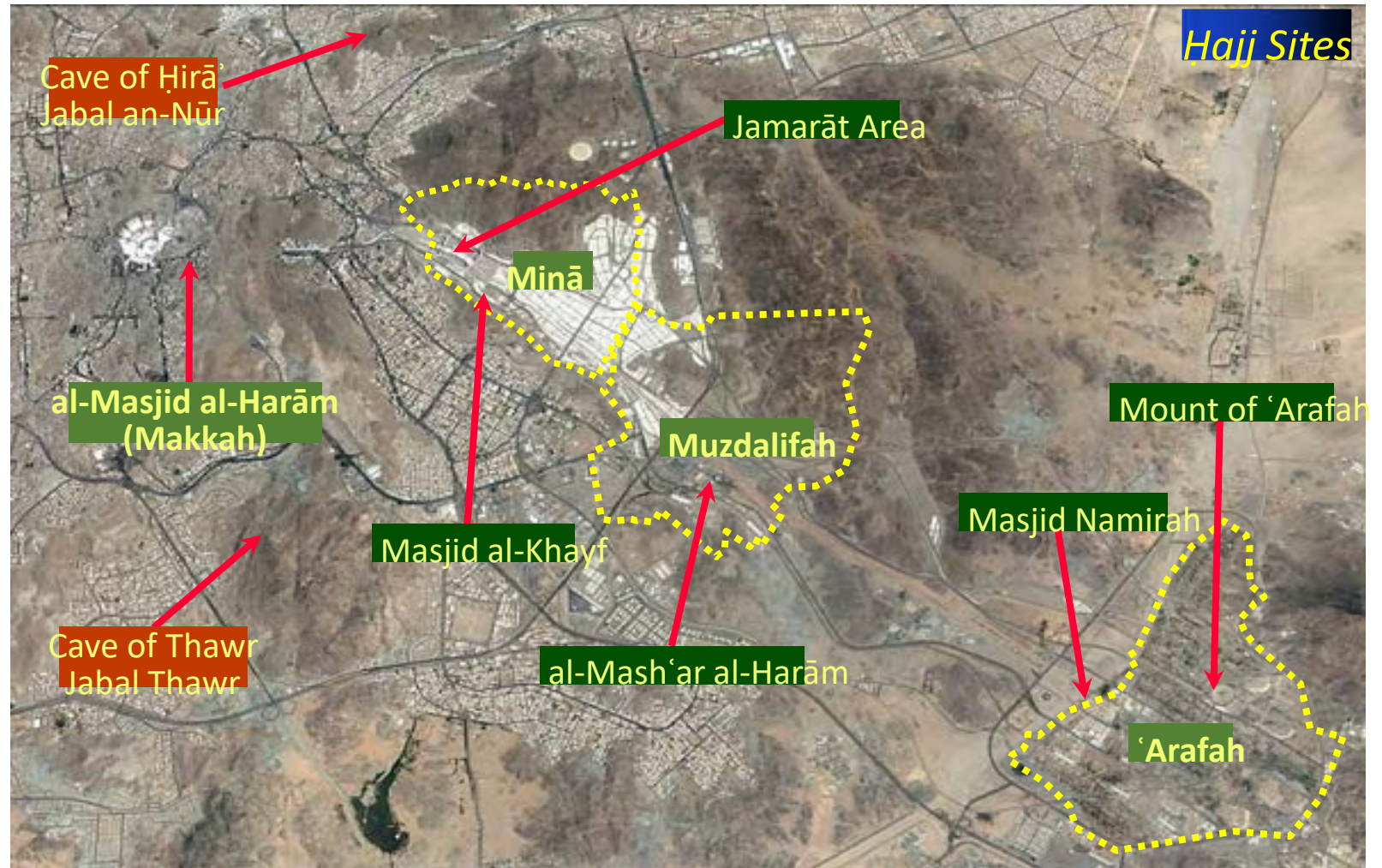


## Makkah & Haj



## Makkah & Haj

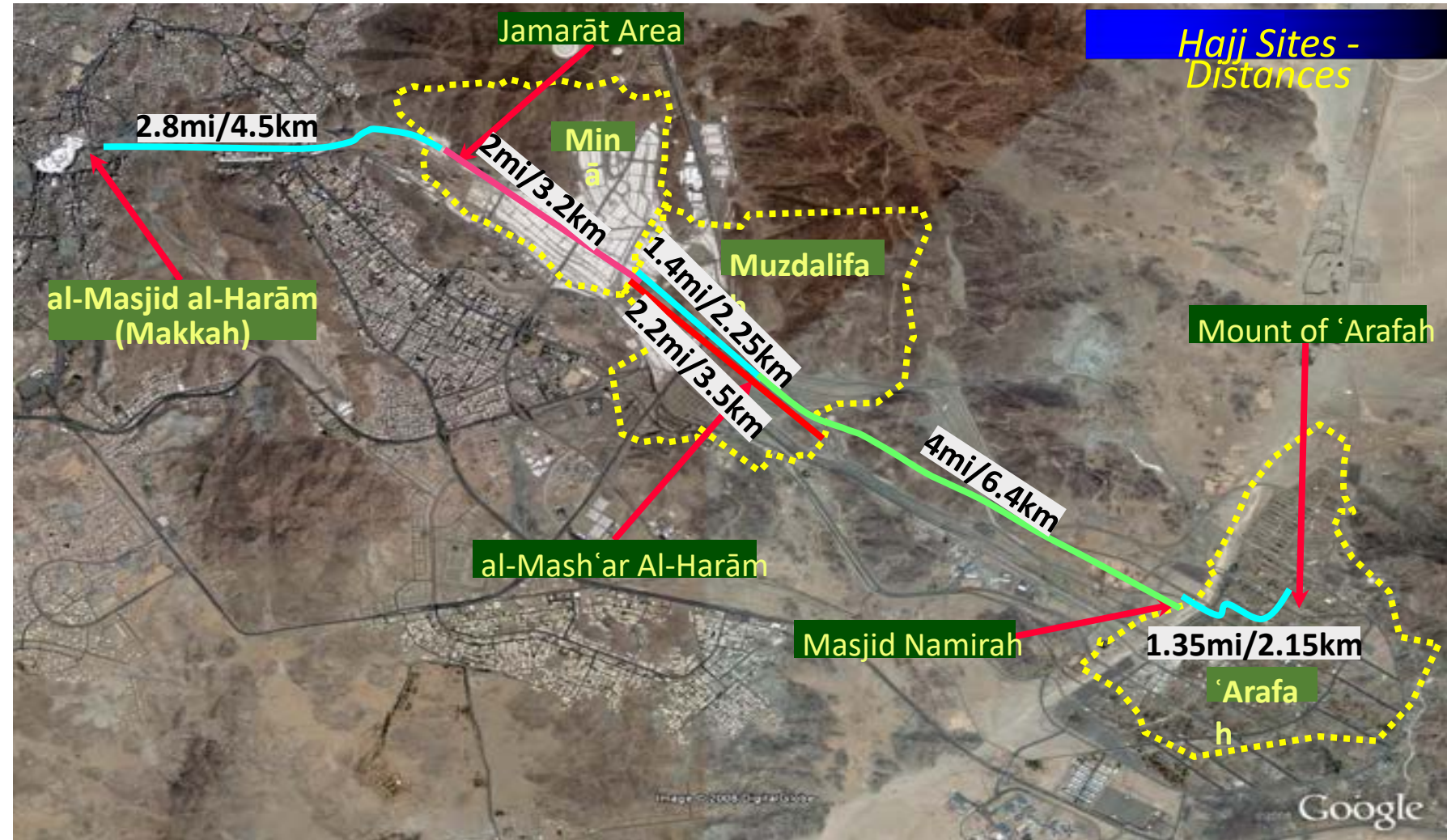
- ✓ 8<sup>th</sup> Hija move to Mina
- ✓ 9<sup>th</sup> Hija move to Arafah
- ✓ 10 Hija Night stay in Muzdalifah
- ✓ 11, 12 & 13 stay in Mina
- ✓ Few day after 15 Hija  
Stay in Makkah city





## Makkah & Haj

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Hospitals at Haj area provided healthcare service in 1444

اجملي السريرة = السريرة في العيادة + السريرة في العيادة										
اسم المستشفى	اجملي السريرة	عدد السريرة	العيادة المركزية (اجملي)	العيادة المركزية (عزل)	العيادة المركزية (اجملي)	العيادة المركزية (عزل)	العيادة المركزية (اجملي)	العيادة المركزية (عزل)	العيادة المركزية (اجملي)	لطوارئ
في الطوارئ	190	130	34	6	28	96	2	94	28	60
منى للوادي	160	156	25	2	23	131	4	127	24	38
منى لاجسر	150	111	28	2	26	83	3	80	12	23
لشارع الجدي	50	34	16	2	14	18	0	18	18	18
محل للرحمة	167	123	44	4	40	79	0	79	30	14
نمرة	90	68	12	0	12	56	0	56	15	7
شرق عفات	236	155	52	24	28	103	9	94	39	28
المجموع	1043	777	211	40	171	566	18	548	166	188

## IPS Start

### What is the IPS?

- A standardized set of basic clinical data
- Includes most important health and care related facts
- A summarized version of a patient's clinical data provides health professionals the essential information needed for care



**The International Patient Summary is a minimal and non-exhaustive set of basic clinical data of a patient, specialty-agnostic, condition-independent, but readily usable by all clinicians for the unscheduled (cross-border) patient care.**



## IPS Start

### IPS and GDHCN Trust Domains

#### Potential Use Cases

- Tourism
  - Routine tourism
  - Medical tourism
  - Pilgrimage
- Migration
  - Forced migration due to climate change
  - Failed states
  - IOM
- Continuity of Care for mobile populations
  - LAC Pass Connectathon – November 2023
- Vaccination records (subset IPS as content standard)
  - Digital Document of COVID-19 Certificates
  - Routine immunization
  - digitized Yellowbook / ICVP

#### Technical Specifications

- Health Content First Priority (HL7 FHIR)
- Assuming Patient Mediated Exchange most realizable globally
- Regional usage of system-to-system exchange (trusted services) is being explored
- Profile IPS for specific use cases (e.g. vaccination records)

#### Potential Policy and Regulatory Standards

- Proposed amendments to IHR
- Regional data sharing agreements



## IPS Start

A care summary using the Composition Resource

Published: <https://hl7.org/fhir/uv/ips/>

Current: <http://build.fhir.org/ig/HL7/fhir-ips/>

### Bundle

- **Composition (1)**
- Patient (1)
- Practitioner (\*)
- Organization (\*)
- AllergyIntolerance (\*)
- MedicationRequest(\*)
- MedicationStatement(\*)
- Condition (\*)
- Immunization (\*)
- Observation (\*)
- Other Resources (\*)

### Composition

Elements that describe the document (id, language, text, etc.)

**Subject of the IPS**

**Author of the IPS**

Clinical Services of IPS

**Sections of the IPS**

- Narrative Text
- Resource References





## IPS Start

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### IPS Around the Globe



## Milestones on Phased Rollout for using IPS at Hajj June 2024



- ✓ Establish WHO GDHCN Trust Domain for IPS during pilgrimage
- ✓ Begin implementation of Phase 1 functionality with Indonesia and carry out several testing by MOH e health (informatics division) , WHO and one country (Indonesia)
- ✓ Engage Malaysia and Oman with some testing and guide lines
- ✓ Indonesian and Malaysian have completed and tested the IPS with workflow scenario 1 or phase 1
- ✓ Start training and change management development for HAJ-EMR, Hajj event (starts June 14)



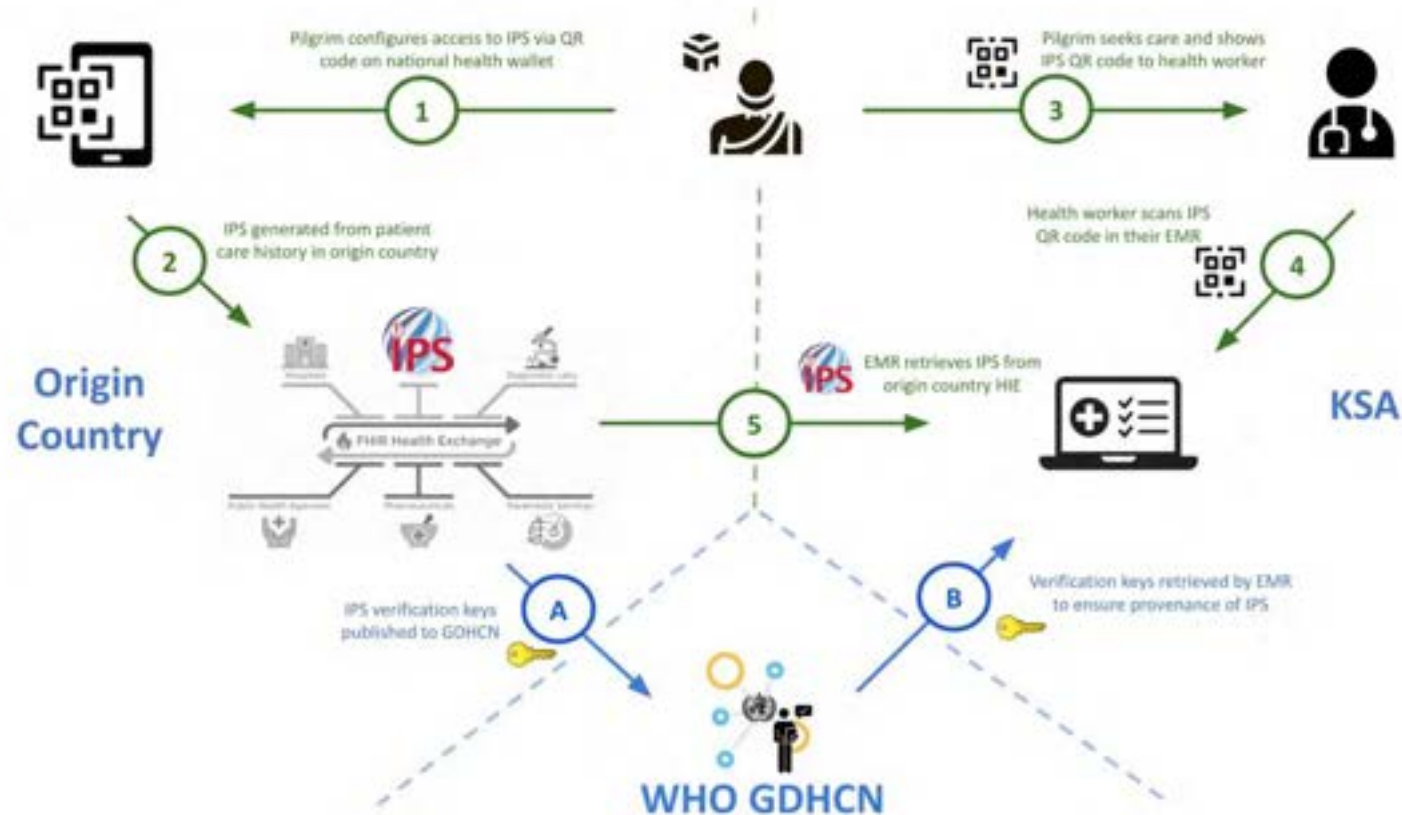
- ✓ Evaluate utilization of IPS during Hajj
- ✓ Identify next steps:
  - \* Establish emergency "Break the Glass" consent directive and workflows
  - \* Broader country engagement, implementation and trainings





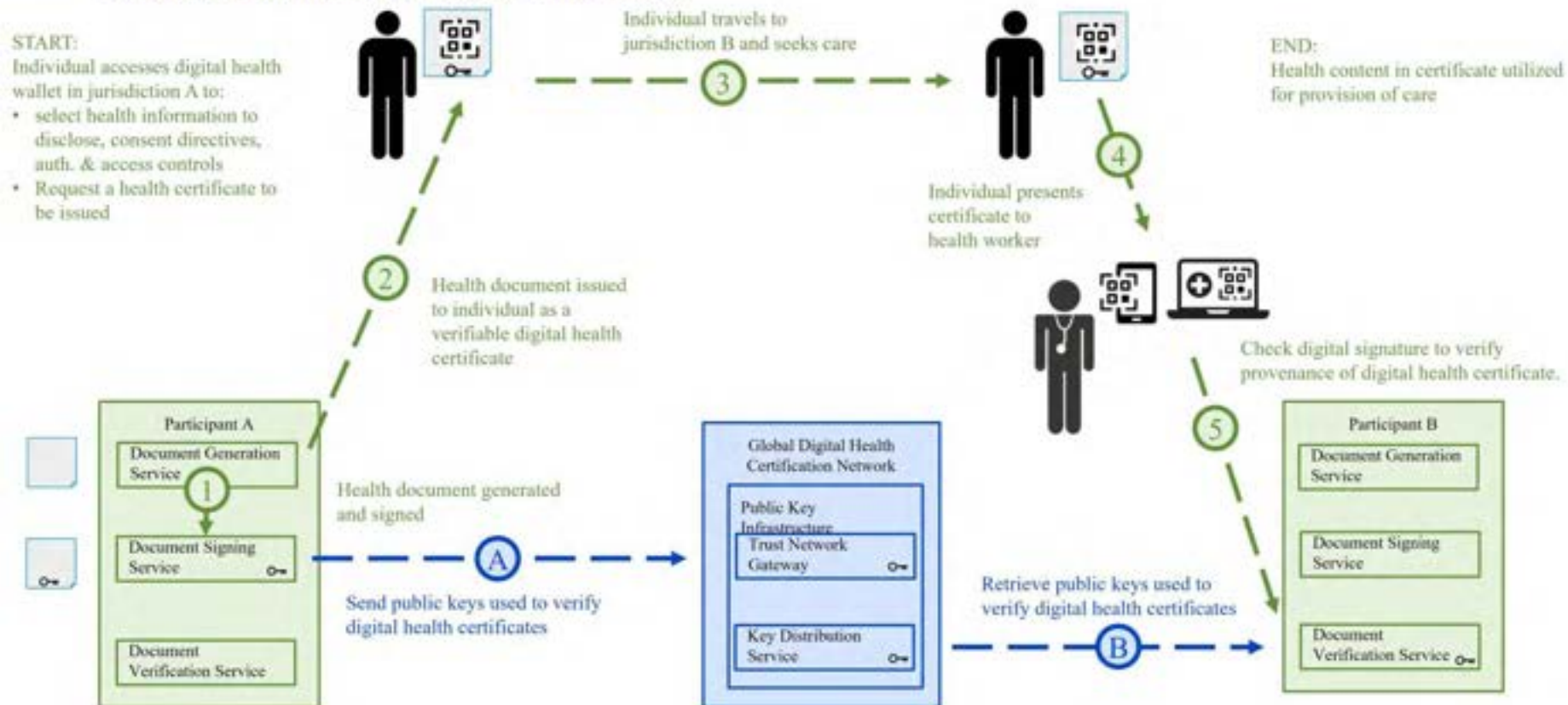
## IPS and Pilgrimage Workflow Phase-1

Pilgrims share health records using QR code on phone or ID badge



## IPS and Pilgrimage Workflow Phase-1

Global Digital Health Certification Network  
– Individual-mediated exchange with consent







## IPS and Pilgrimage Workflow Phase-1

### IHE Digital Signatures

- IHE Digital Signature (DSG) profile currently supports XML digital signatures for document sharing

- Leverage **XAdES**, an European Telecommunications Standards Institute (ETSI) for XML digital signatures
- Detached and Enveloping signatures, not Enveloped

- Gap in IHE DSG for JSON documents (preferred by many HL7 FHIR vendors)

- Will leverage JAdES, the JSON equivalent of XAdES

- Current work underway to clarify how the International Patient Summary (IPS) and other HL7 FHIR documents should be signed.

- Draft for Public Comment ready being prepared for release next week

- Potential to test at IHE Europe, Trieste, Italy June 3-7



XAdES extends the IETF/W3CXML-Signature Syntax and Processing specification [\[XMLDSIG\]](#) into the domain of non-repudiation by defining XML formats for advanced electronic signatures that remain valid over long periods and are compliant with the European "Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures" [\[EU-DIR-ESIG\]](#) (also denoted as "the Directive" or the "European Directive" in the rest of the present document) and incorporate additional useful information in common uses cases. This includes evidence as to its validity even if the signer or verifying party later attempts to deny (repudiates) the validity of the signature.

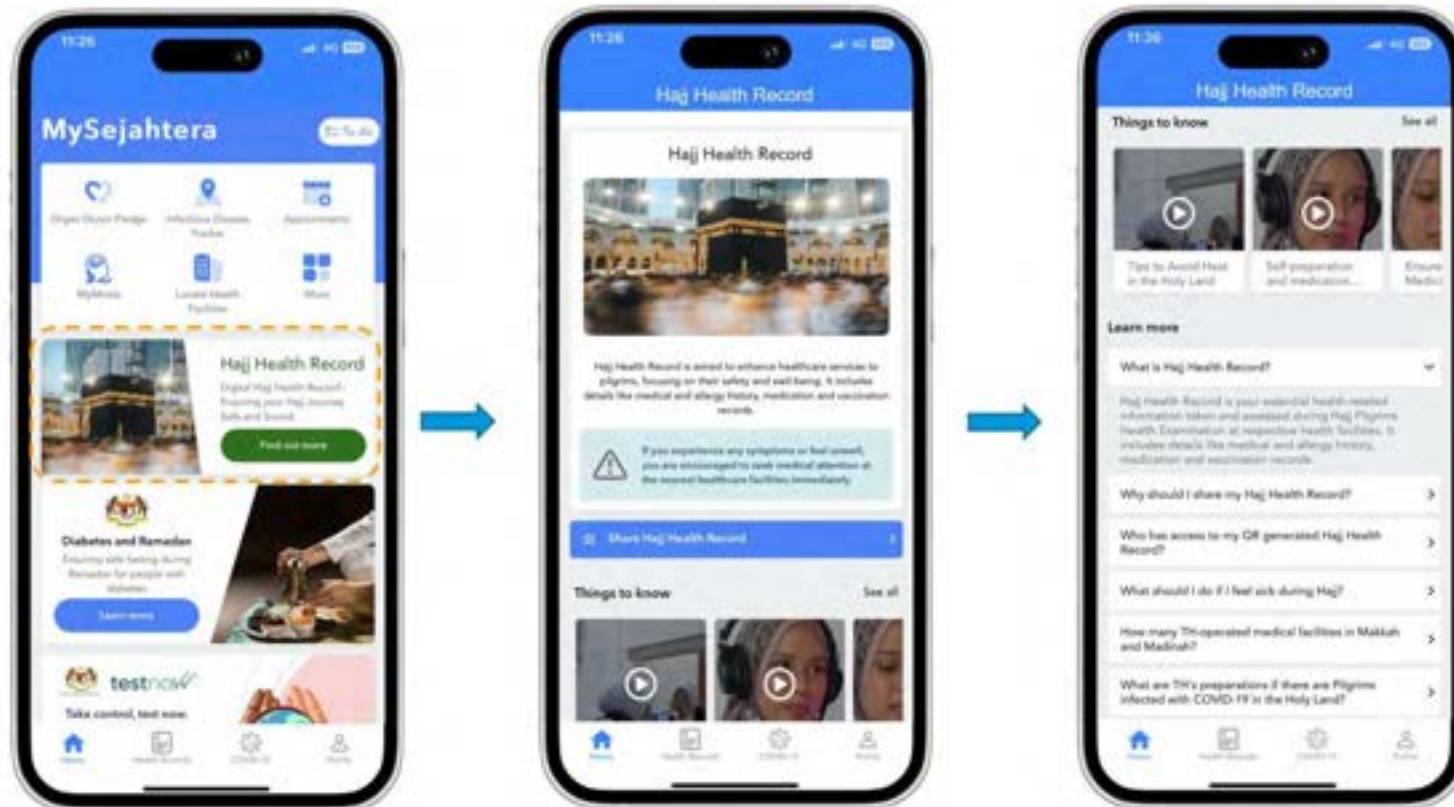
## IHE Connect-a-Thon – Trieste-Italy 3-6 June 2024

- Signing IPS using IHE's new DSGj profile
- Test environment for Trust Network Gateway
- Test Hajj end to end workflow





## IPS and Malaysian Pilgrimage Workflow Phase-1



**Experience seamless access to personalized Hajj health report in MySejahtera app, after your Hajj assessment is completed**

**Easily generate your Hajj Health report and access enriching educational materials for an insightful pilgrimage**

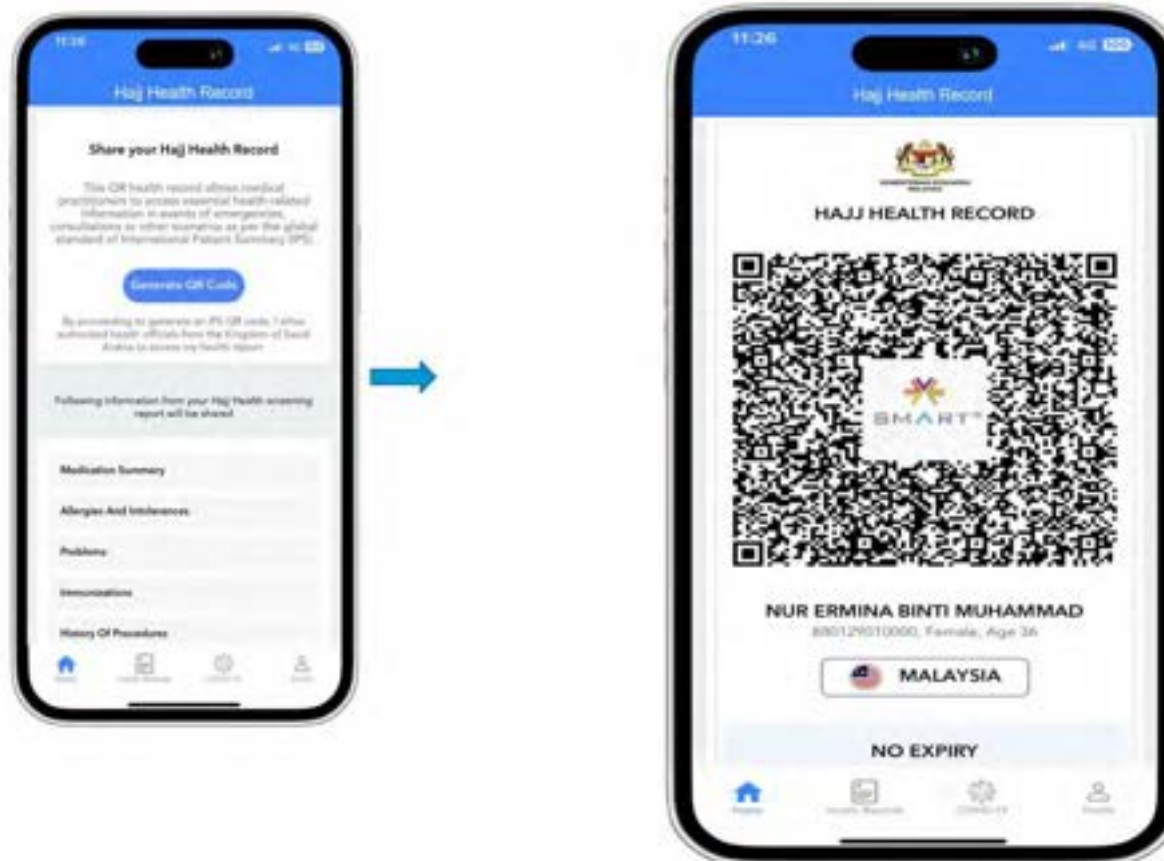


**Dr Maheshwara Rao A/L Appannan**  
Director, Digital Health Division  
Ministry of Health, Malaysia



**Mr Naveen Pralhad Deshpande**  
Co-founder & Chief Operating Officer  
entomo

## IPS and Malaysian Pilgrimage Workflow Phase-1



Seamlessly create QR code accessible only by healthcare provider to view your Hajj health record, in compliance with International Patient Summary (IPS) standards

## IPS and Malaysian Pilgrimage Workflow Phase-1

  
**INTERNATIONAL PATIENT SUMMARY**

**MAHEDHWARA RAO A/L APPANNAI**  
NRC/Passport: 881003081925  
Gender: Male, DOB: 1983-10-03  
 MALAYSIAN

Patient Summary as of 07 May 2024 12:38  
Summary generated by: [MySeamless](#)

**Allergy and Intolerances**  
Allergy to ALLUPOBIVOL

**Diagnostic Results**  
HbA1C, Renal Profile, Electrocardiogram (ECG)

**Functional Status**  
**Systems Review:**  
Functional Class 1: Patient able to be independent, Moving & walking without assistance  
**Timed Up and Go (TUG):**  
10 - PASSED  
**30-second Sit to Stand Assessment (30STS):**  
40 - PASSED

**Active Problems**  
Hypertension, Diabetes Mellitus, Hypercholesterolemia, Type 2 diabetes mellitus, Essential hypertension, unspecified, Unspecified disorders of lipoprotein metabolism or lipoproteins

**Medication**

Medication	Strength	Form	Dosage	Comment
T. CELEBREX 200MG OD	-	tablet	mult - 1 per day	-

### Vital Signs

Height	178.0 cm
Weight	70.0 kg
BMI	22.1 kg/m <sup>2</sup>
Blood Pressure(Systolic)	128.0 mmHG
Blood Pressure(Diastolic)	90.0 mmHG
Pulse Rate	64.0 bpm
Respiratory Rate	18.0 breaths/min
Temperature	37.0 °C
SpO2	100.0 %
Pain Score	1.0
Blood Glucose	9.0 mmol/L
Hemoglobin	10.0 g/dL

### Social History

**Alcoholic status:** 1 Low Risk  
**Tobacco smoking status:** Non-Smoker

### Immunizations

Vaccine Name	Date	Manufacturer	Lot No.	Expiry Date
TYPHIM Vi (SINGLE DOSE)	13 Mar 2023 09:56	SANOFI-PASTEUR, Lyon, France	UG431TV	30 Sep 2023 00:00
3i Tetanus Toxoid Vaccine Adjuvanted	19 May 2023 10:36	SERUM INSTITUTE OF INDIA PRIVATE LIMITED (INDIA) LTD Madhavpur, Pune-411 028, India	28R0007D 28 Feb	2024 00:00

**PDF File  
uploaded into  
HAJ-EMR**



The screenshot displays the CarveWare Hospital web application interface. The browser address bar shows the URL: 192.168.1.21.7701/carve-ware-reception/faces/#!/pages/home.xhtml. The page features a header with the CarveWare Hospital logo and a navigation menu. The main content area is divided into two panels. The left panel, titled 'إضافة مريض جديد' (Add New Patient), contains a form with fields for patient details such as 'رقم المريض' (Patient ID), 'الاسم' (Name), 'العنوان' (Address), and 'التاريخ' (Date). The right panel, titled 'إضافة مريض جديد' (Add New Patient), contains a form with fields for patient details such as 'رقم المريض' (Patient ID), 'الاسم' (Name), 'العنوان' (Address), and 'التاريخ' (Date). The interface is in Arabic and includes various input fields, buttons, and a search bar.

## IPS and Indonesian Pilgrimage Workflow Phase-1



Indonesia IPS Implementation  
[ips.kemkes.go.id](https://ips.kemkes.go.id)



## IPS and Indonesian Pilgrimage Workflow Phase-1



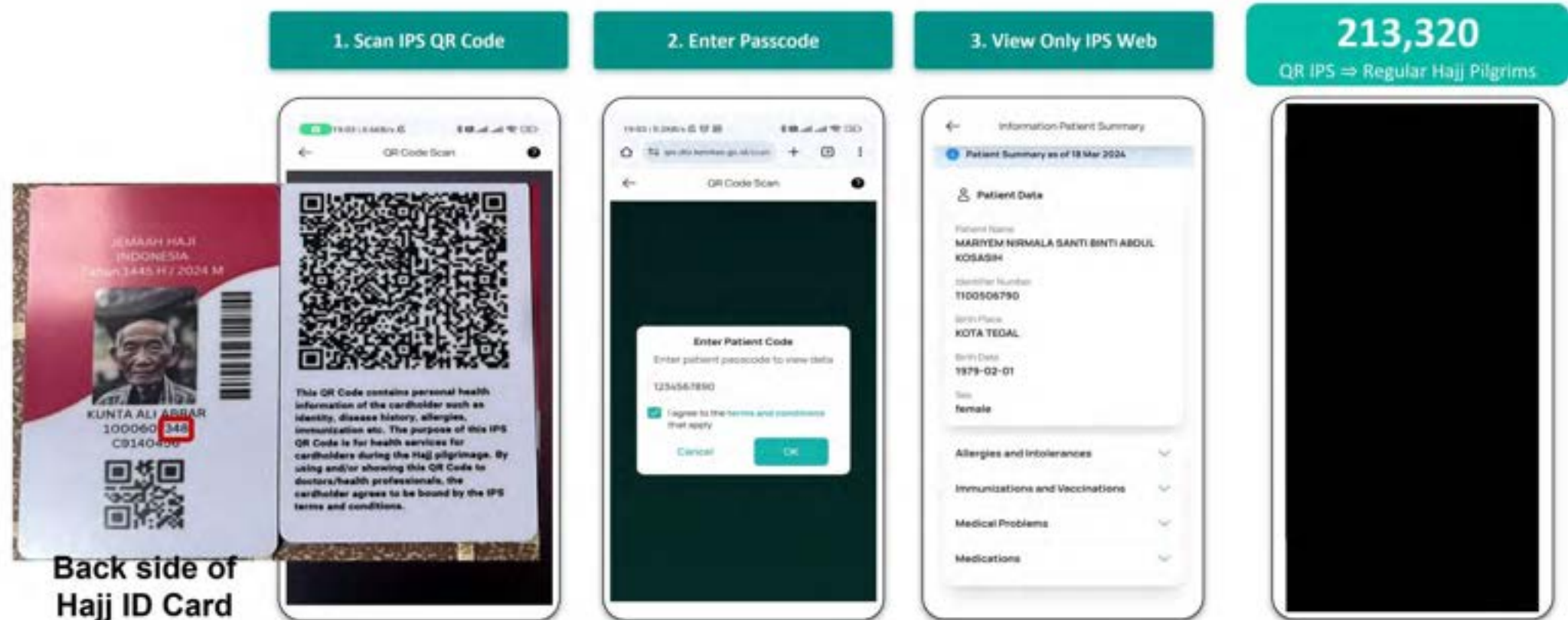
**Agus Rachmanto**  
Chief of GovTech Health - Indonesia



**dr. Gregorius Bimantoro**  
Technical Advisor GovTech Health - Indonesia



## IPS and Indonesian Pilgrimage Workflow Phase-1



## IPS and Indonesian Pilgrimage Workflow Phase-1



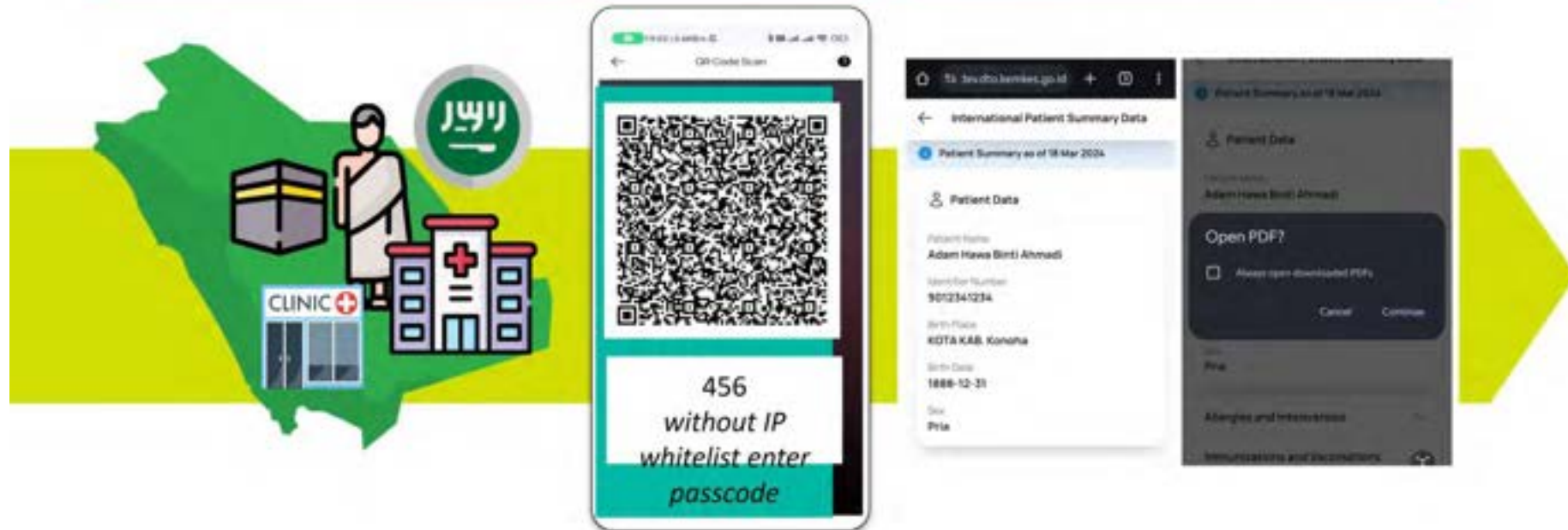
**Requested by KSA MoH and already delivered from Indonesia**

Scan without Passcode and can get PDF version instead of web view

1. IP Whitelist access only from KSA and specific healthcare

2. Scan IPS only available during Hajj period

3. Direct access without Passcode and PDF, only from whitelist IP from specific KSA healthcare







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## WHO's Global Digital Health Certification Network (GDHCN) and the IPS

### FRAMEWORK FOR THE ADMINISTRATION AND OPERATIONS OF THE WHO GLOBAL DIGITAL HEALTH CERTIFICATION NETWORK (GDHCN)

6 November 2023

Administrative  
Framework

<https://smart.who.int/smart-trust>

#### I. INTRODUCTION

The WHO Secretariat has established the WHO Global Digital Health Certification Network (GDHCN) as an open, interoperable digital public infrastructure<sup>1</sup> to facilitate the verification and secure exchange of *Verifiable Digital Health Certificates* issued and utilized by *GDHCN Participants*. As a digital public infrastructure, the GDHCN has the potential to support a variety of *Trust Domains*, which are the sets of use cases operationalized by the GDHCN and utilized by *GDHCN Participants* subject to their respective rules, regulations and policies<sup>2</sup>. This document describes the overarching administrative and operational framework under which the GDHCN may be utilized for various *Trust Domains*, subject to WHO's rules, regulations, and procedures and governing bodies processes.

The GDHCN does not enable access by WHO to any content contained within individual *Verifiable Digital Health Certificates* issued by *GDHCN Participants*.

The GDHCN is responsive to the [WHO Global strategy on digital health 2020-2025](#) (GSDH), which outlines the vision, goals, and strategic objectives for WHO and its Member States to harness the power of digital health to improve health outcomes and performance of health systems. In particular, the GDHCN contributes to the following proposed actions of the WHO Secretariat for implementing the GSDH<sup>3</sup>:

## WHO's Global Digital Health Certification Network (GDHCN) and the IPS

The GDHCN operationalizes *Trust Domains* approved by the *GDHCN Secretariat*. The Trust Domains operationalized by the GDHCN are defined in the Annexes. To maximize the utilization of GDHCN as digital public infrastructure at regional and global levels, *Trust Domains* may be proposed for consideration to the *GDHCN Secretariat* by one or more *Eligible GDHCN Participants* by providing a description for the proposed *Trust Domain*, which should include: use cases; technical specifications; and policy and regulatory standards.

***Trust Domain:*** Consists of:

- Defined **use cases** and business processes related to the utilization of *Verifiable Digital Health Certificates*;
- the open, interoperable **technical specifications** that identify or define the applicable *Trusted Services* and *Verifiable Digital Health Certificates*; and
- a set of **policy and regulatory standards** describing expected behavior of *GDHCN Participants* in relation to operation of the *Trusted Services* and utilization of *Verifiable Digital Health Certificates* (e.g. data minimization, privacy, scope of use).



## WHO's Global Digital Health Certification Network (GDHCN) and the IPS

Administrative  
Framework -  
Eligible  
Participants

**Eligible GDHCN Participant:** An *Eligible GDHCN Participant* is one of the following:

- a WHO Member State or Associate Member, or sub-national unit thereof;
- a State Party recognized by the International Health Regulations, or sub-national unit thereof;
- the United Nations (UN) and other intergovernmental organizations in effective relations with WHO;
- a fund, programme, specialized agency, or related organization within the UN system; or
- an organization officially delegated by one of the organizations mentioned above that can abide by the *GDHCN Terms of Participation* and fulfils one or more of the following health service functions:
  - *Public Health Agency;*
  - *Health Professions Education Accreditation Agency;*
  - *Health Services Licensing Agency;* or
  - *Public Health Security Agency.*

and, once accepted to the GDHCN, after the successful conclusion of the *Onboarding Process*, will be referred to as *GDHCN Participant* throughout this document. An *Eligible GDHCN*

## IPS and Haj Phase-2 Proposal (for 2025)



- ✓ Establish Roadmap with WHO to engage and onboard more countries. Building the IPS on GDHCN for cross border interoperability of records when in KSA. We call it “**Smart Pilgrim**”
- ✓ There are two ways:
  - Communicate with E H R at each country, and this is not available with 85% of countries.
  - Communicate with IPS proposed server that connect all countries using IHE standard through Haj Ministries around the globe. (Develop a product to digitalize end to end flow as per FHIR specifications, IPS & GDHCN)
- ✓ Onboard WHO’s Global Digital Health Certification Network (GDHCN) and the IPS
- ✓ Establish proposed countries roadmap for 2025 that would like to be part of that as follows:
  - GCC (Gulf Cooperation Council) countries: **Kuwait, Qatar, UAE, Saudi Arabia, Oman & Bahrain (6 Countries)**
  - **Turkey, Egypt, Morocco, Algeria, Iraq & Sudan (6 Countries)**
  - **USA & Canada (2 Countries)**
  - **UK, France, Germany, Italy, Australia, New Zealand (6 Countries)**
  - Etc.
- ✓ Expand the IPS in Saudi Arabia for Urma and tourism. This could start in 2025.
- ✓ Coordinate with both **WHO, IHE Catalyst, G20, and GDHP** to ensure such global initiative all are on the same page.

## IPS and Haj Phase-2 Proposal (for 2025)



- ✓ The “**Smart Pilgrim**” Application consists of the following:
  - App for pilgrims to book appointment for health examination, view the digital record and Generate IPS to share when in KSA for getting care
  - FHIR repository, IPS and enabling GDHCN Smart pilgrimage domain for the country.
- ✓ The Services provided to countries:
  - Implement the smart pilgrim system based on country specific needs
  - Train the local teams to manage the system independently
  - Support first year rollout by engaging with KSA & WHO
  - The host will be in KSA.



شكرا  
Thank you  
Grazie  
Merci

