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Forum on Harnessing Artificial Intelligence for He**AI**th Equity

25-26 March 2026

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Digital Public Infrastructure for AI

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The Core Challenge

AI without foundations *fails* in LMICs

Most AI health tools are built for high-resource settings. When deployed without the right infrastructure, they amplify inequity rather than reduce it.

"AI performance dropped significantly when applied to data from LMICs where health records were incomplete, non-standardised, or paper-based."
— *Nature Communications*, 2024

What breaks AI in low-resource settings



No digitized health data

AI cannot train on paper records; fragmented EMRs create gaps



No patient identity infrastructure

No longitudinal records → no personalised or predictive AI



No legal basis for data use

Missing consent frameworks and data protection law = liability risk



Fragmented, siloed systems






Non-interoperable platforms → biased, incomplete AI training data

Digital Public Infrastructure (DPI) is the backbone for inclusive, interoperable digital services

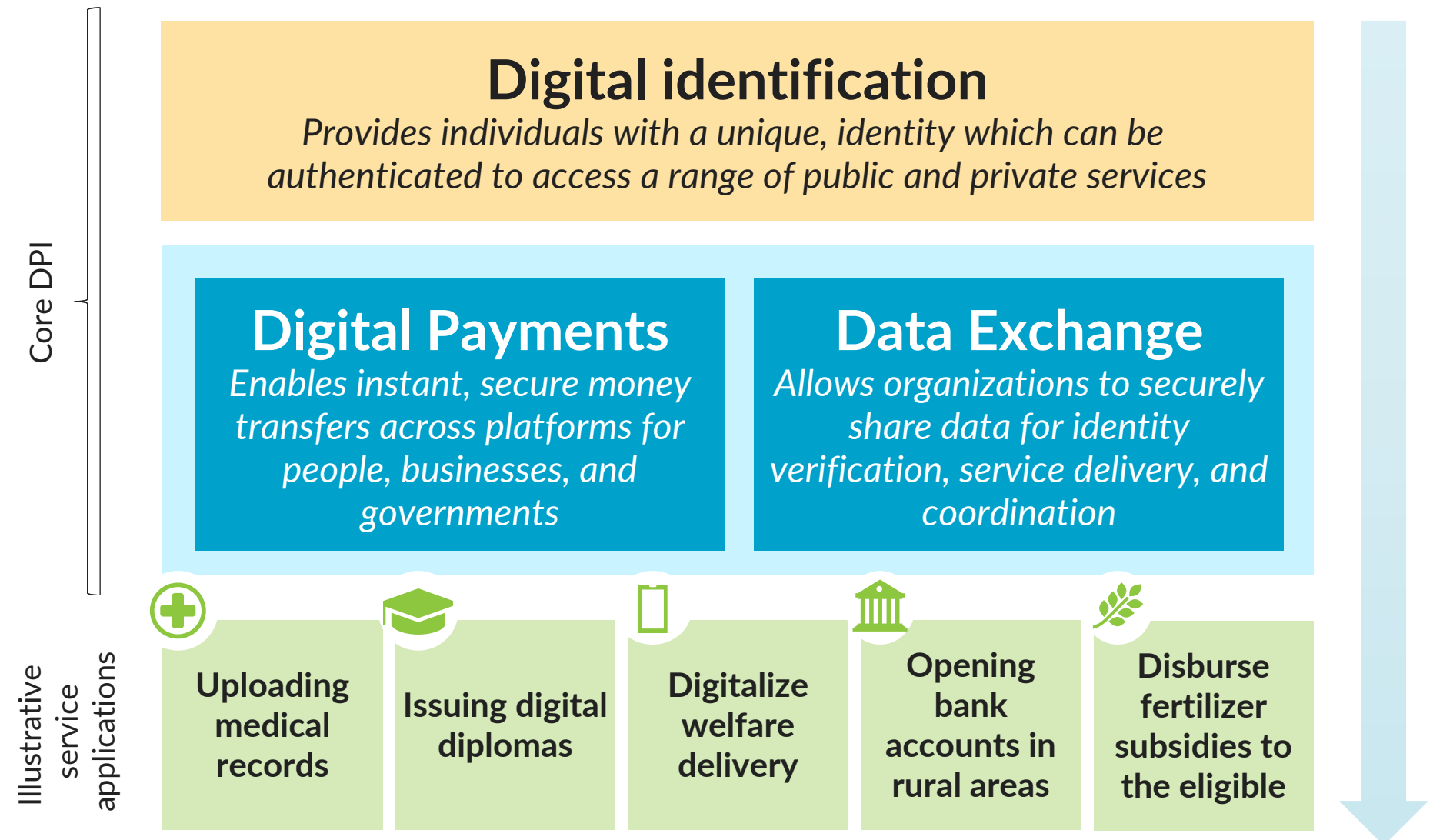
“Digital Public Infrastructure (DPI) refers to **foundational building blocks** for the **public benefit**.”

- World Bank, *DPI and Development: A World Bank Group Approach*, 2025

DPI is built on the following principles

-  Interoperability
-  Minimalist, reusable building blocks
-  Diverse, inclusive innovation
-  Security and privacy by design
-  Federated and decentralized

Core DPI consists of identity, payments and data exchange systems, on top of which a range of sectoral service applications can be built



DPI shifts digitalization from siloed projects to scalable, reusable platforms.

DPI Technical Architecture Principles



1.

Interoperability driven
by open specifications



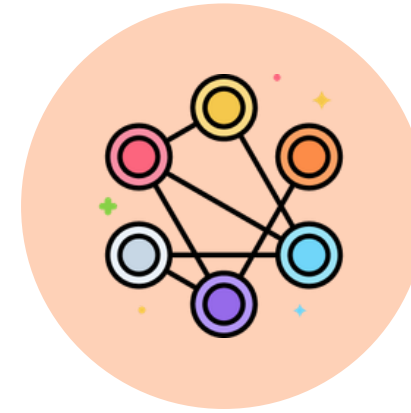
2.

**Minimalist,
Reusable
building
blocks**
rather than end-
to-end solutions



3.

**Diverse, inclusive
ecosystem
innovation** by both
public + private actors
via open & multi-
modal access



4.

**Federated &
Decentralized** with a
preference for letting
data stay where it's
been collected



5.

**Security &
Privacy**
by design

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Foundational Digital Public Infrastructure Categories within and across sectors



Identities

Authenticating any noun in a digital ecosystem (people, entities, & objects) via Registries

ID Authentication; eKYC; Single Sign On; Civil/Functional ID; Entity Registries (Hospitals, etc); Land Registries; Object Registries (Drugs) etc.



Payments

Making financial transactions with ease

P2P; P2M; B2B; G2P (social benefit transfers); P2G (tolls/tax); etc.



Data Sharing & Credentials

Sharing Data (history, profile, & attributes) or Models peer to peer or publicly

Sharing Personal data with consent; Publishing non personal data via open datasets; Data collection/curation infra to train AI/ML models, etc



Trust Infra

Enabling trust through signatures, PKI, consent, and beyond

eSignature based on identity, Digital signatures/PKI, Consent artefacts, Key registries, Revocation registries etc.



Discovery & Fulfillment

Accessing goods and services via open protocols/APIs

Open APIs for services, eg business registration, tax filing, etc (public/private); Open eCommerce and Mobility networks; etc.

Examples

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Functional Applications for Health

Standards-based Point-of-Service Applications



Community Health Info System



Electronic Health Record System



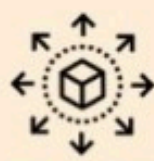
Health Mgmt Info System



Lab System



Pharmacy System



Logistics Mgmt Info System



Finance and Insurance System

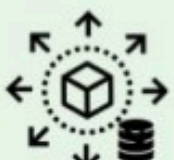


Personal Health Record

Quality Assured Content and Interoperability Standards

ICD-11

Business Domain Services



Logistics Mgmt Info Services



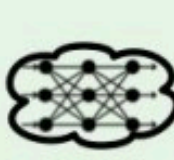
Shared Health Record



Health Mgmt Info System



Finance and Insurance System

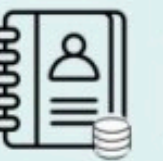


Fine-tuned Health AI Model

Registry Services



Terminology Services



Client Registry



Facility Registry



Health Workforce Registry



Product Catalogue

Interoperability Standards

Quality-Assured Content and Interoperability Standards



Digital Public Infrastructure for Health

Foundational Digital Public Infrastructure

Foundational DPI Services



Digital Identity



Financial Transactions



Consent-based Data Sharing



Trust Network



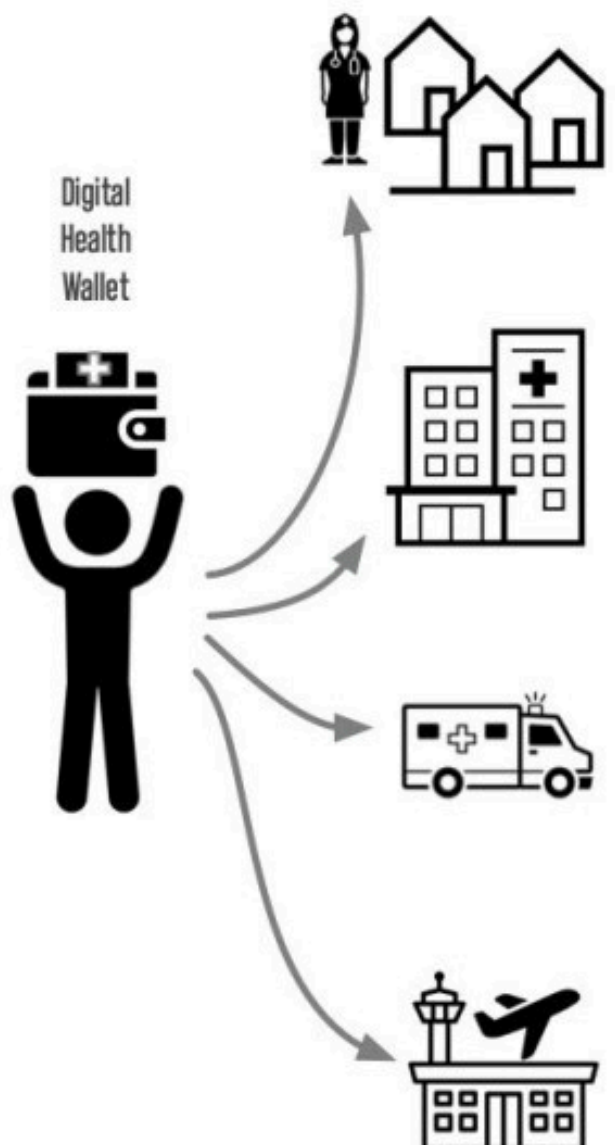
Weather Water Climate, Environment System



Digital Wallet Infrastructure

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Additional DPI Capabilities



Beneficiaries across contexts and health domains

What DPI Enables for AI in Health



Unique Patient Identity

Enables longitudinal health records across facilities. No duplicate or ghost patients. AI can learn from complete patient journeys.

Example

India ABHA: 670M+ health IDs linked to 420M+ records



Verified Health Registries

Authoritative lists of facilities, providers, and drugs give AI systems clean reference data. Reduces hallucination risk and improves clinical decision support accuracy.

Components

HFR, HPR, drug & product registries



Standardised, Interoperable Data

FHIR-based data exchange increases interoperability from ~11% to 66% in studies. Clean, structured data is essential for AI training and inference.

Standard

HL7 FHIR + clinical terminology (SNOMED, LOINC)



Population-Scale Data Flows

Aggregated, de-identified data from integrated systems enables training of locally-relevant AI — not relying on high-income country datasets that fail in LMIC contexts.

Benefit

Context-appropriate AI trained on local epidemiology



Consent Management

Provides legal basis for secondary use of health data in AI training. Consent frameworks protect patient rights and enable ethical data access at scale.

Example

ABDM HIE-CM: federated consent-based record sharing



Trust & Accountability Infrastructure

Governance frameworks, audit trails, and human oversight mechanisms built into the infrastructure — not added as an afterthought after AI deployment.

WHO Principle

Safety, transparency & accountability by design

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The Minimum Viable DPI Floor for AI

What every health system needs in place before deploying AI — across three dimensions



Technical

- Unique health identifier linked to national ID
- FHIR-based health information exchange
- Facility-level digital health records (EHR/EMR)
- Health facility & provider registries
- Minimum connectivity for data collection
- Cybersecurity standards for health data



Legal

- Health data protection legislation
- Consent framework for secondary data use
- Regulatory pathway for AI as clinical tool (SaMD)
- Liability framework for AI-assisted decisions
- Cross-border data sharing agreements



Operational

- National digital health governance body
- Human oversight mechanisms for AI outputs
- Procurement frameworks for AI in health
- Health data stewards and AI validators
- Post-market surveillance for AI tools
- Workforce upskilling in digital health & AI

Where your country is on the DPI-AI spectrum

Not all countries need to start at the same place. DPI maturity varies widely across ADB DMCs — what matters is identifying your current position and your next step.

● Starting Point

Paper-based records, no unique patient ID, limited connectivity.
Priority: digitise facility data & establish unique health ID.

● Building Block

Partial EMR coverage, some registries, basic HIE. Priority: enforce FHIR standards, connect siloed systems, build consent framework.

● AI-Ready

Interoperable systems, functional HIE, legal framework in place.
Priority: deploy governed AI tools with human oversight, build local AI capacity.

The +1 Approach: You don't need to rebuild everything

1 ● Wrap legacy systems with APIs

Existing HIS/EMR can participate in DPI ecosystem through interoperability layers — no wholesale replacement needed

2 ● Use open Digital Public Goods

DHIS2, OpenMRS, MOSIP, OpenHIE — battle-tested open-source building blocks designed for LMICs, reusable as AI blocks

3 ● Start small, govern well, scale carefully

Pilot AI in one use case with strong governance before scaling. Proof of concept in maternal health or disease surveillance first

4 ● Co-invest with development partners

ADB supports DPI for health as part of UHC and digital transformation agendas — from connectivity to governance frameworks

Thank you

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Stress-test the framework against your context

The WHO minimum ecosystem tool is only as useful as its ability to reflect real national realities. Your feedback from today will directly shape the final framework.

🔍 Key questions to explore:

- Which DPI components does your country already have? Which are missing?
- What is the single biggest gap that blocks safe AI adoption in your context?
- Is the WHO minimum viable ecosystem floor realistic for your setting?
- What would it take to advance one level on the DPI-AI readiness spectrum?

ADB DMCs in the room — a snapshot

Digital identity coverage	Varies: 20–95%
Facility-level EMR deployment	Varies: 15–80%
Health data protection law enacted	~50% of DMCs
Interoperable HIE in operation	~20% of DMCs
AI-specific health regulatory pathway	~10% of DMCs

⚡ This gap is why a minimum viable ecosystem standard matters. It gives every country a shared starting line — not a finish line.