



THEME:

Connected by Design: *Advancing
Somalia's Digital Infrastructure
and Integrated Public Services*



September
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**Mogadishu
Somalia**

SOMNOG9 CONFERENCE · 23–24 SEPTEMBER 2026 · JAZEERA HOTEL, MOGADISHU

Conference theme: “Connected by Design — Advancing Somalia’s Digital Infrastructure and Integrated Public Services”

Regulation, Interoperability and Quality: Building a Trusted Digital Health System for Universal Health Coverage in Somalia

Connected Health by Design — One patient. Multiple providers. Connected care.

Nidaaminta · Isku-xirnaanta · Tayada

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Federal Republic of Somalia



Presenter

Sub-Themes 2 · 3 · 4 — Interoperability · Digital Identity & Trust ·
Cybersecurity

A trusted digital health system rests on three pillars

Trust is multiplicative: if any one pillar is zero, the whole system is untrusted.



Regulation

Who is allowed to deliver care — and to collect, hold and share health data?

Trust in the actors



Interoperability

Can authorised systems securely exchange and use the same patient's data?

Trust in the data flows



Quality

Is the data accurate — and does the care it records meet the standard?

Trust in the outcomes

= Trusted Digital Health System → strategic purchasing → **Universal Health Coverage for Somalia**

Why trust matters: Somalia's UHC and financing gap

Households carry the risk that a weak, fragmented system cannot.

27 /100

UHC service coverage index (2024) —
the lowest globally

~45%

of total health expenditure is paid
out-of-pocket by households

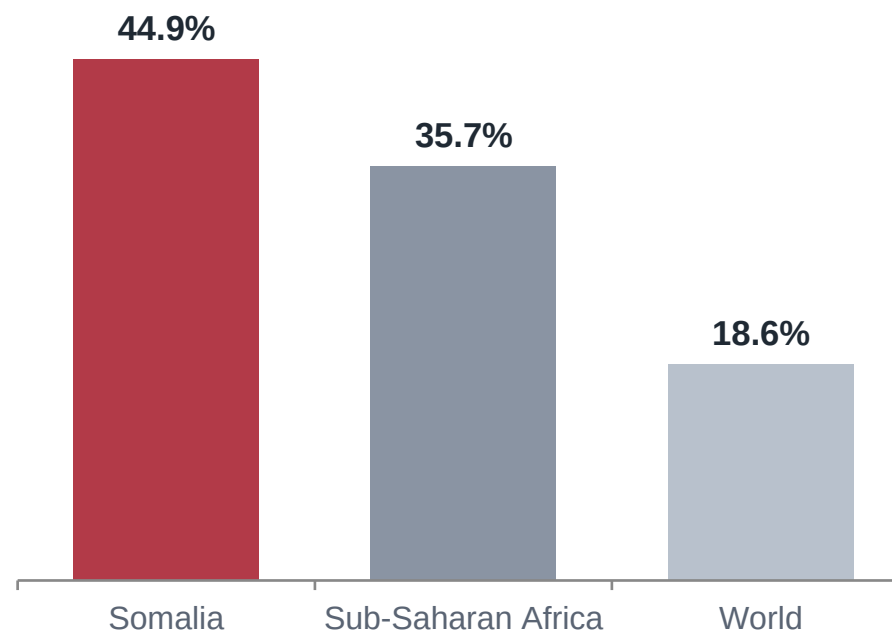
3.5%

of Somalis are covered by any form
of health insurance

24%

of households face catastrophic
health spending (>10% of income)

Out-of-pocket spending, % of health expenditure



Sources: Discover Public Health (Dec 2025) — UHC index; Health Econ Rev (Dec 2025), 2,000-household survey — OOP, insurance, catastrophic spending; NHA 2024 (BMC HSR 2026): OOP 46.1%.

Somalia is digitising healthcare — rapidly and in parallel

Many promising systems exist. Few of them talk to each other.



DHIS2 national HMIS

Aggregate reporting backbone — about 91% reporting coverage.



RAAD EMR (Bahmni/OpenMRS)

≈70 public primary facilities; designed to integrate with DHIS2.



Programme-specific EMRs

CaafimaadPlus, Ogow and other partner-driven platforms.



Private hospital, lab & pharmacy systems

Vendor-specific, largely unmapped and unconnected.



NIRA national ID

1.5 million+ IDs issued (Sept 2026); 24+ institutions integrated.



Connectivity

11.5 M mobile connections; 5.47 M internet users (27.6%).

KEY QUESTION

Somalia is digitising healthcare — but are these systems connected?

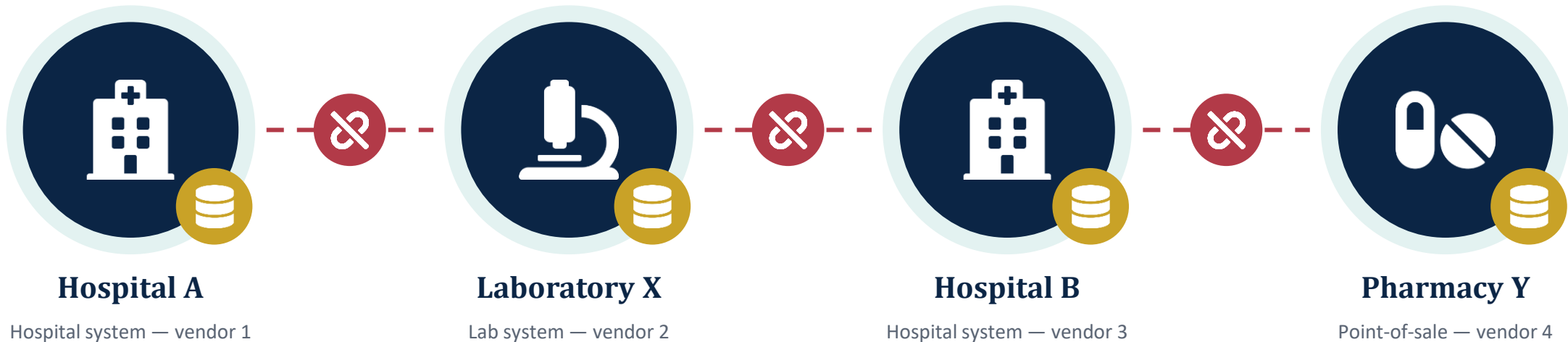
35.8%

of health managers in RAAD-EMR facilities make adequate use of EMR data for decisions (45 facilities, n = 405, 2025).

Sources: Osman et al., *Front Digit Health* 2026;8:1851686; *Discover Public Health* (2025); *Dawan Africa* (24 Nov 2025; 19 Sep 2026); *DataReportal, Digital 2026: Somalia*.

The problem: digital islands

Each institution holds its own data — and little ability to use anyone else's.



The patient becomes the courier: carrying paper reports, PDFs, films and memory from one facility to the next.

Digitalisation without interoperability simply replaces paper silos with digital silos.

Who pays the price of fragmentation?

The problem is rarely a lack of data — it is the inability to exchange and use it.



Patients

- Repeated laboratory tests and imaging
- Paper reports carried between facilities
- Incomplete histories — medications, allergies, procedures unknown
- Delays in diagnosis and treatment
- Extra out-of-pocket cost for repeated tests
- Higher risk of avoidable medical error



Providers

- Clinical decisions made without information generated elsewhere
- Referral results arrive late, partial or never

EXAMPLE

CT scan at Hospital A

→ Patient visits Hospital B

→ B cannot retrieve scan/report

→ Manual copy — or repeat



The nation

- Fragmented statistics and duplicate records
- Weaker surveillance; slower outbreak detection
- Referrals that cannot be tracked
- Limited planning data; inefficient resource allocation

For a health insurer, untrusted data means paying for fiction

Strategic purchasing needs four verified answers for every claim.



Who is the member?

NIRA-verified identity and SHIA eligibility



Is the provider legitimate?

Licensed professional (NHPC) in a registered, accredited facility



What was actually done?

Standardised, coded encounter (e.g., ICD-11) linked to the claim



Was it good care?

Quality indicators and outcomes feeding back into payment

LESSON FROM THE REGION · KENYA SHA

KSh 11 bn ($\approx$ US\$85 m)

lost to fraudulent claims in six months (Oct 2024 – Apr 2025), per a Ministry of Health audit.

- Phantom billing and ghost patients
- Upcoding; outpatient visits converted to admissions
- A facility with no operating theatre filed 35 caesarean claims
- 998 regulator files on unregistered, unlicensed or substandard facilities

Digital claims without regulation and verification simply digitise the fraud.

Sources: Capital FM / AllAfrica (28 Jan 2026); Citizen Digital (28 Jan 2026); IBA Legalbrief (9 Feb 2026). ICD-11 = WHO International Classification of Diseases, 11th revision.

Regulation: the legal architecture of trust

Somalia has laid important foundations; the health-specific layer is the next step.

FOUNDATIONS IN PLACE



Data Protection Act (Law No. 005 of 2023)

In force 23 March 2023; Data Protection Authority launched February 2024.



Identification & Registration Act (Law No. 009 of 2023)

NIRA and the unique National Identification Number (NIN).



National Health Professions Council (NHPC)

Council appointed Dec 2025; independence upheld by Supreme Court.



Social Health Insurance Authority (SHIA)

Established by Prime Minister Decree Lr206 as the UHC purchaser.

INSTRUMENTS STILL NEEDED (PROPOSED)

1

Digital health & interoperability regulation

binding national standards and exchange rules

2

Health-data sharing code under the DPA

consent, purpose limitation, secondary use

3

Software conformance certification

for EMR, laboratory and pharmacy systems

4

Mandatory shared registries

client, facility and health-worker — one source of truth

5

Accreditation with digital criteria

data quality and reporting as licensing conditions

Regional reference — Kenya: Digital Health Act No. 15 of 2023 + Data Exchange Regulations 2025 mandate an exchange bus, client/facility/health-worker registries, a national data dictionary and insurance services.

Interoperability is not one software for every hospital

Hospitals keep different software; agreed standards let authorised systems communicate.



Different systems.

Public hospitals, private clinics, laboratories, pharmacies and NGOs keep the software that fits their needs and budgets.



Common standards.

Shared data formats, terminologies and identifiers — HL7 FHIR, ICD-11, LOINC and national registries.



Secure exchange.

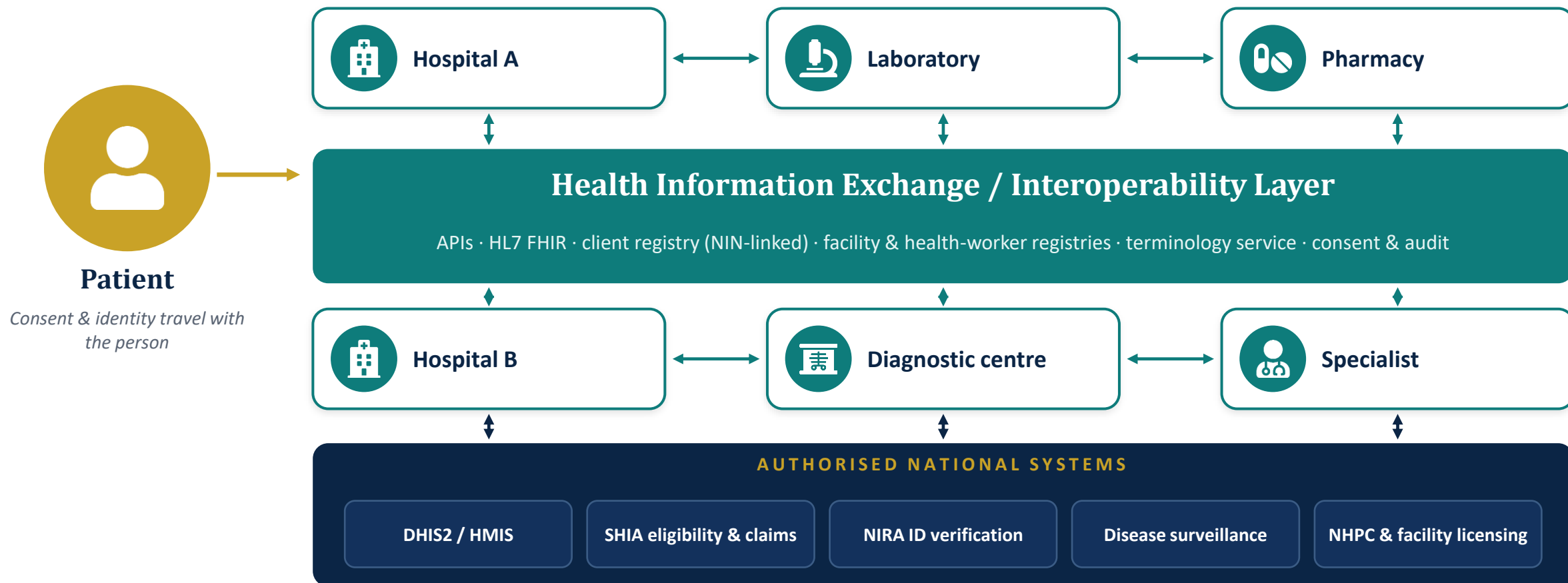
Authorised systems exchange data through APIs and a national exchange layer — with consent, access control and audit.



Lesson from Ghana: a US\$100 m single-vendor national EHR contract (2019) ended in a contractual dispute; in 2025 the Ministry announced a state-owned replacement platform. **Bet on standards — not on a single vendor.**

Sources: Ofori-Adjei, *Ghana Med J* 2025;59(4); *Ghanaian Times*; *Graphic Online*. HL7 FHIR = Fast Healthcare Interoperability Resources; LOINC = Logical Observation Identifiers Names and Codes.

What a connected Somali health ecosystem could look like



Information follows the patient — where appropriate and authorised — instead of being trapped inside one institution.

The building blocks Somalia would need

The objective is interoperability — not forcing every provider onto the same application.



Governance

Data governance body

Interoperability regulation

Consent policy

Data-sharing agreements



Trust services

Authentication & PKI

Role-based access control

Audit trails

Digital signatures



Exchange

APIs

HL7 FHIR profiles

Health information
exchange

Routing & messaging



Shared registries

Client registry (NIN-linked)

Facility registry

Health-worker registry

Product catalogue



Semantic standards

ICD-11 diagnoses

LOINC laboratory codes

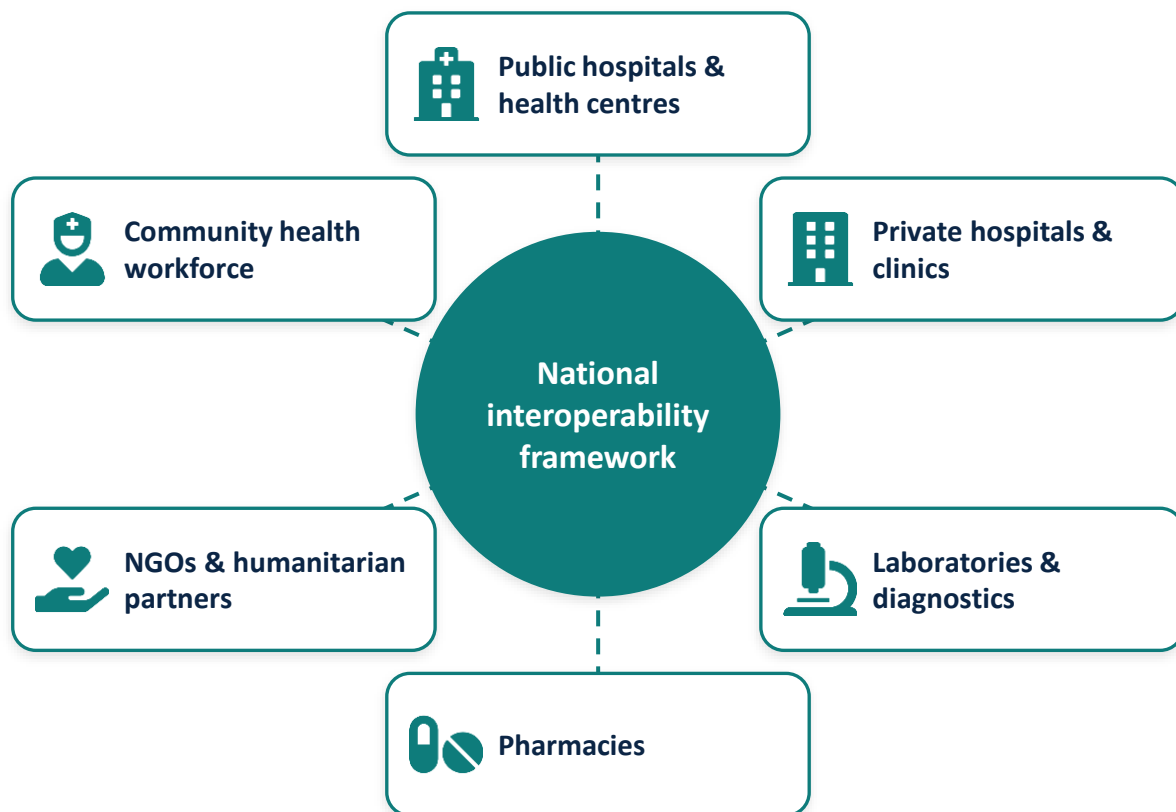
Terminology service

National data dictionary

Foundation — digital infrastructure: connectivity · national data centres & local hosting · IXP local routing · cybersecurity (SomNOG9 Sub-Themes 1 & 4)

Interoperability must cover the whole health ecosystem

Somali care is delivered by a public–private–humanitarian mix; the framework must reach all of it.



POLICY LEVERS (PROPOSED)



Connect to be contracted

SHIA empanelment and payment linked to registry listing and standards conformance.



Open standards, open APIs

No proprietary lock-in; data remain portable across vendors.



Tiered onboarding

Light-weight adapters for small clinics and pharmacies, not costly rebuilds.



Shared public infrastructure

Exchange and registries treated as digital public goods — built once, used by all.

How does Hospital B know it is the same patient?

Reliable identification is the hinge of continuity of care — and of every insurance claim.



NIRA TODAY

1.5 M+

citizens issued a national ID (Sept 2026)

31

embassies offering ID services abroad

15 M

national registration target (by ~2029–30)

24+

public & private institutions integrated (Nov 2025)

SAFEGUARDS BY DESIGN



Consent



Privacy



Inclusion



Purpose-limited access

No ID must never mean no care.

Sources: Dawan Africa (19 Sep 2026; 24 Nov 2025); World Bank blog (22 Sep 2025); nira.gov.so.

More available to care — never more exposed

Poorly designed interoperability multiplies risk; well-designed interoperability multiplies trust.



Access policy

Who can see what — for which purpose



Patient consent

Clear, recorded and revocable



Encryption

In transit and at rest



Authentication

Strong, PKI-backed identities



Role-based access

Clinician ≠ claims officer ≠ statistician



Audit logs

Every access recorded and reviewable



Cybersecurity

Monitoring, patching, incident response



Data retention

Keep only as long as lawful and needed



Breach response

Detect, contain, notify under the DPA



THE PRINCIPLE

“Interoperability should make health information more available to authorised care providers — not more exposed.”

Anchored in: Data Protection Act 2023 · data residency under Somali jurisdiction (Sub-Theme 1) · national cyber resilience (Sub-Theme 4)

Quality: from digital records to better care

Systems installed are not systems used — and data not used cannot improve care.

18.5%

of 1,219 assessed facilities had undergone accreditation (HHFA 2022–23)

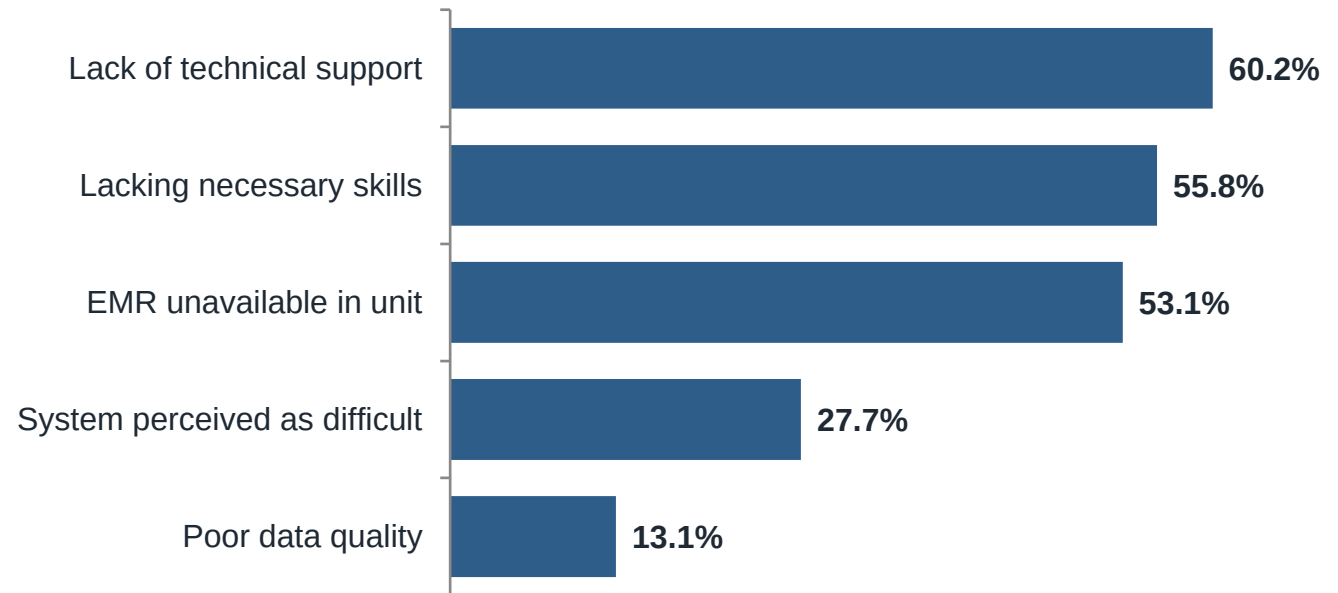
35.8%

of health managers make adequate use of EMR data for decisions

15.1%

use EMR data for continuous quality improvement

Barriers to EMR data use (% of health managers, n = 405)



Accredit facilities



License professionals



Standardise data



Measure indicators



Feed back & pay for quality

Sources: Osman et al., BMC Health Serv Res 2026;26:581 (HHFA 2022–23); Osman et al., Front Digit Health 2026;8:1851686 (45 RAAD-EMR facilities, Banadir & Bay).

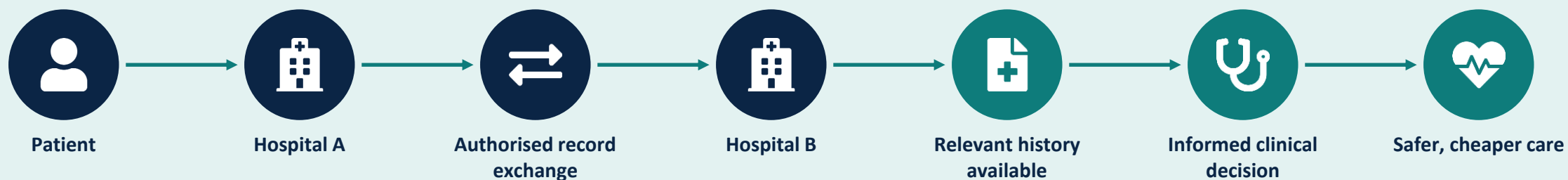
One patient, two journeys

The same illness, the same hospitals — a very different experience.

TODAY

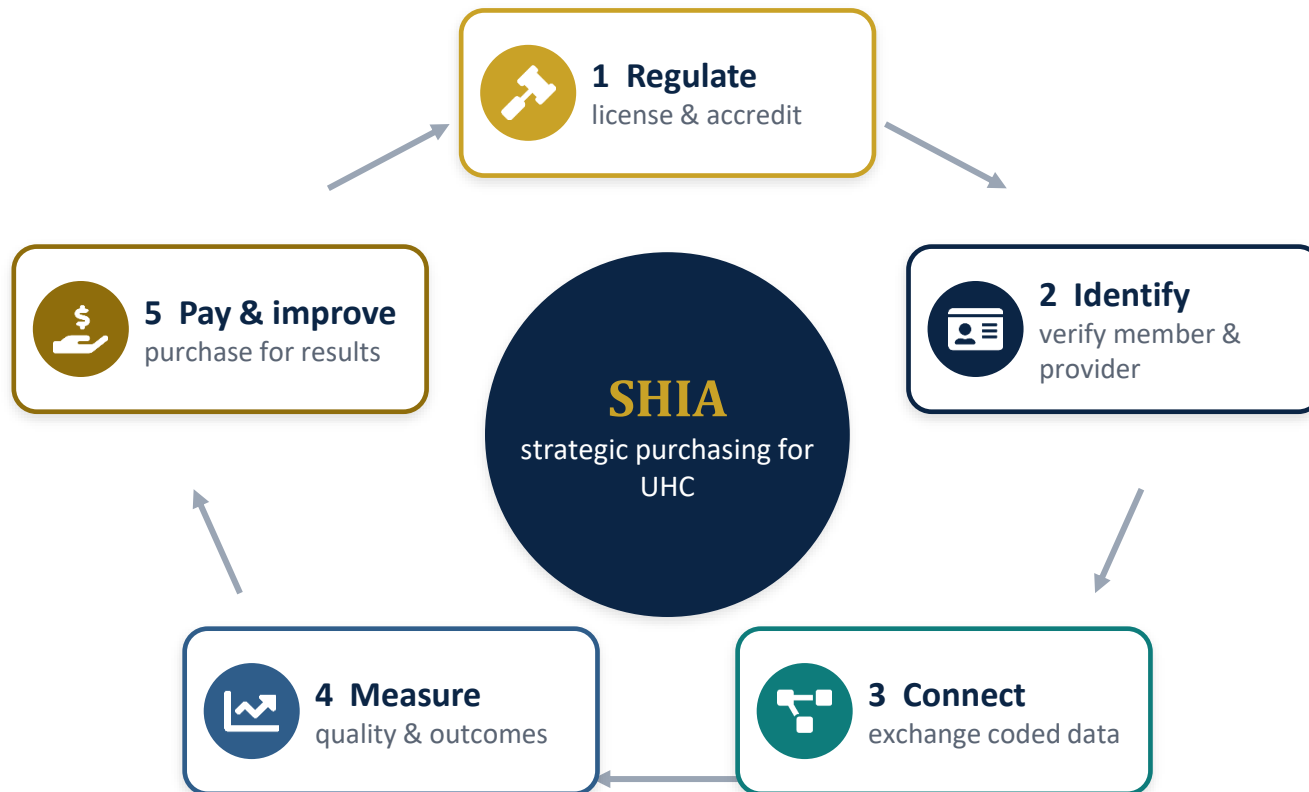


CONNECTED FUTURE



The trust loop: how the three pillars power UHC

Regulation, interoperability and quality become a self-reinforcing cycle through strategic purchasing.



For Somali households

- Fewer repeated tests and lower out-of-pocket cost
- Portable records across public and private care
- Verified, accredited providers

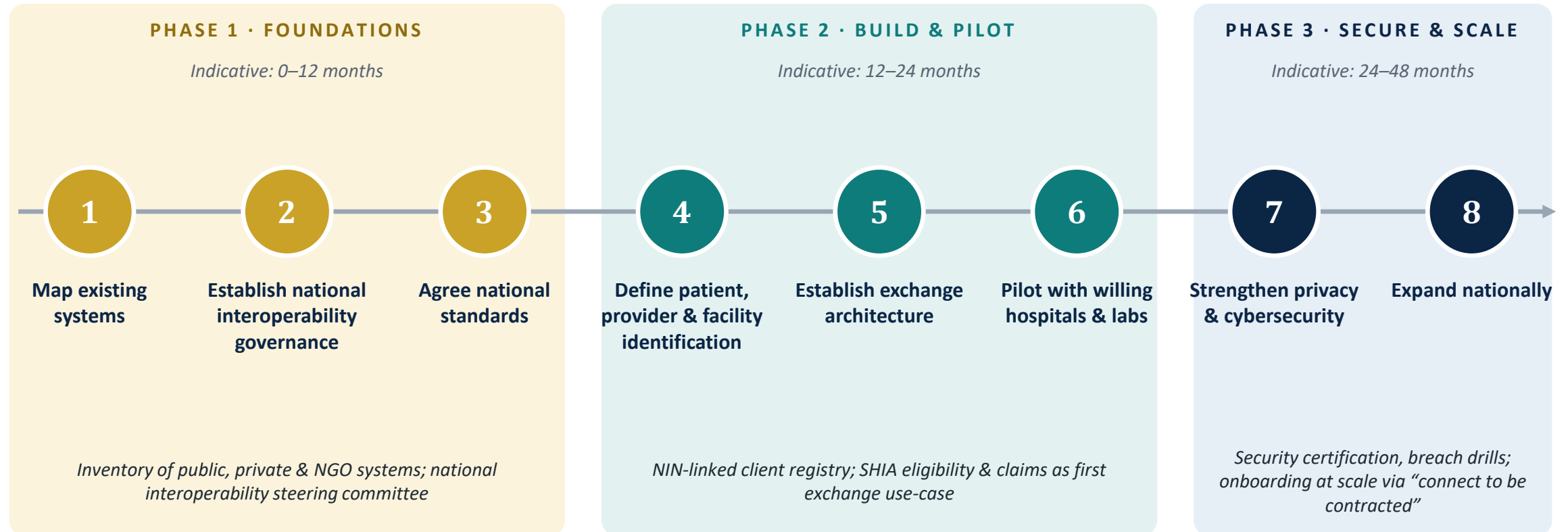


For the health system

- Fraud-resistant claims and payments
- Near real-time data for surveillance and planning
- Evidence to justify domestic health financing

A phased roadmap for Somalia

Start federated, standards-first and pilot-proven — not with a massive national database.



Aligned with the National Transformation Plan 2025–2029 and HSSP III — timeframes indicative, for national validation.

What each actor can do — starting now

Connected health is a team sport; every actor in this room holds a piece of it.



Federal MoH & regulators

- Issue the interoperability regulation and national standards
- Mandate facility and health-worker registries



SHIA

- Make “connect to be contracted” a condition of empanelment
- Use claims data to publish quality and integrity signals



Hospitals, labs & pharmacies

- Adopt open standards and APIs
- Join the pilot exchange as early adopters



Technology vendors & developers

- Build FHIR-conformant, secure-by-design products
- Certify against national profiles



Network operators & SomNOG community

- Local hosting, IXP routing and resilient links for health
- Cybersecurity capacity for health institutions



Academia & development partners

- Health-informatics training, research and evaluation
- Fund shared infrastructure — not parallel systems

FROM DIGITAL HOSPITALS TO A CONNECTED HEALTH SYSTEM

Somalia does not need every hospital to use the same software.

It needs different health systems to speak the same digital language.

Connected Health by Design

One patient. Multiple providers. Connected care.

Hal bukaan. Adeeg-bixiyeyaal badan. Daryeel isku xiran.

Mahadsanid · Thank you

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Thanks