Country Canvas

Verifiable immunization records, at home and across borders: personal health record built on DPIs and standards.

COUNTRY

TABLE NO.

FACILITATORS

Delegation member	Role and institution

How the canvas works

Sheet	What you work on	When
1	**Our journey and where it breaks.** The immunization journey and the capabilities it needs.	Day 1 · M1
2	**Our architecture today.** Your real digital capabilities needed for the use case, grounded in the DPI-H reference architecture components.	Day 1 · M2
3	**Core data set, terminology and specifications.** Data elements, and who owns the national data set, linkages to interoperability standards.	Day 1 · M3
4	**Trust, and who decides.** Who signs and verifies, who holds the authority, and who needs to be part of decisions.	Day 2 · M4 and M5
5	**Doing it together.** A joint data model, shared testing, a connectathon, and the nomination.	Day 2 · M6
6	**First move and the investment required.**	Day 2 · M7

When you don’t have it yet: start from three patterns

Every sheet ends with the same eight-minute gap analysis. For each missing capability, ask whether it blocks you now. If it does, pick a pattern and name the debt it creates.

Start narrow	Start shared	Start borrowed
One population, one credential, one facility type. e.g. Hajj Health Card	Build the foundation once for several programmes, not only for immunization. e.g. Registries across government	Adopt a regional or international artefact instead of authoring your own. e.g. the ICVP FHIR IG, the IPS, or a SNOMED subset

Table rules

- Every table does the same task.
- Each country grouping discusses, decides and documents it. If you cannot find agreement immediately, the disagreement is a finding: also write it down.

Our Journey and Where It Breaks

Write down how the immunization journey works in your country **today**. Then identify the digital capabilities that are needed for the immunization journey.

DPI-H for Health Workshop
Policy-maker track · Day 1 and Day 2

Country _____ **Table** _____

1 Our use case 8 min

A child vaccinated in _____ should be able to _____ in _____.

DISCUSS Each person says the use case in their own words. Agree one sentence the whole delegation can defend.

2 The journey 25 min · write, then circle one rating per touchpoint

DISCUSS Each person tells your country's version of one touchpoint before you write. **Draw a ★ on the touchpoint where your journey breaks hardest.**

1 Vaccinated and recorded

A child is vaccinated abroad, and leaves with a paper card and a QR code.

Must be true: the dose is recorded against the right person, in codes that mean the same everywhere.

IN OUR COUNTRY TODAY

○ Works ○ Partly ○ Breaks

2 Found and registered

Back home, a community health worker finds an infant who is in no register.

Must be true: the child can be identified and linked to records made elsewhere.

IN OUR COUNTRY TODAY

○ Works ○ Partly ○ Breaks

3 A foreign record used for the next vaccine

At the clinic, a nurse is shown a record issued in another country. Can she trust it? What is due now, given doses that were given somewhere else?

Must be true: the issuer can be verified, and the data can be read here. the schedule logic reads every dose, wherever it was given.

IN OUR COUNTRY TODAY

○ Works ○ Partly ○ Breaks

4 Continuity across border

The family travels again, the record on a phone or paper QR, checked at a paediatrician office.

Must be true: the person holds the record, and any verifier can check it.

IN OUR COUNTRY TODAY

○ Works ○ Partly ○ Breaks

3 The capabilities this journey needs 7 min · tick Needed, circle the touchpoints that use it

Capability	Often provided by	Needed?	Touchpoints
Identify the person	National ID, client registry	☐	1 · 2 · 3 · 4 · 5
Know the facility and the health worker	Facility registry, workforce registry	☐	1 · 2 · 3 · 4 · 5
Keep the record over time	Immunization registry, lifelong health record	☐	1 · 2 · 3 · 4 · 5
Make codes mean the same everywhere	Terminology service, core data set	☐	1 · 2 · 3 · 4 · 5
Work out what is due next	Decision support (SMART Guidelines logic)	☐	1 · 2 · 3 · 4 · 5
Sign and verify the record	Trust services, PKI, GDHCN	☐	1 · 2 · 3 · 4 · 5
Let the person hold it	Wallet, citizen app, paper QR	☐	1 · 2 · 3 · 4 · 5

★ WHERE OUR JOURNEY BREAKS HARDEST

Touchpoint no. _____ **WHY THERE?**

The ticked capabilities carry onto Sheet 2.

! What we don't have yet *(8 min) · the last step of every sheet* **!**

"Absent" is a finding, not a failure. <u>But</u> determine whether it blocks this use case.

Narrow: one population or credential · **Shared**: build once for many programmes · **Borrowed**: adopt a regional or international artefact

Gap: from the ○Partly or ○Breaks items above	Blocks us now	Needed in 12 mo	Can wait	Narrow	Shared	Borrowed	Technical Debt this might create
	○	○	○	☐	☐	☐	
	○	○	○	☐	☐	☐	
	○	○	○	☐	☐	☐	

Journey based on the WHO SMART Guidelines immunization DAK personas and workflows, and the digital ICVP specification.

Our Architecture Today

Country _____ Table _____

Each block is pre-filled from your questionnaire: correct it. Write the system you use today, then circle **E** exists, **P** partial or **A** absent. IMMZ marks blocks this use case touches. Draw a ★ on any block you would share regionally.

DISCUSS One person points to each block; the delegation names the system and agrees E, P or A. Experienced countries at the table go last.

RULES *"A disagreement is a finding. Write it down on the right."*

Layer	Block	Descriptor	System we use today	IMMZ	E / P / A
POINT-OF-SERVICE APPLICATIONS · Systems people use every day. Programmes, partners and the private sector build these.					
CLINIC	**Provider systems**	*EMR · HIS*		IMMZ	E P A
PROGRAMME	**Immunization app**	*EIR client · tally sheet*		IMMZ	E P A
COMMUNITY	**CHW and outreach**	*Field app · tracing*		IMMZ	E P A
CITIZEN	**Citizen app or wallet**	*PHR · superapp*		IMMZ	E P A
VERIFIER	**Verifier app**	*Border · school · port*		IMMZ	E P A
SUPPLY	**Supply chain**	*LMIS · cold chain*			E P A
PUBLIC HEALTH	**Public health apps**	*AEFI · outbreak*			E P A
▼ Applications use the shared layers below through standards-based APIs ▼					
DPI-H LAYER: SHARED, GOVERNMENT-STEWARDED INFRASTRUCTURE FOR HEALTH · Group: BUSINESS SERVICES LAYER					
CLINICAL	**Decision support engine**	*Schedule logic from the SMART Guidelines DAK*		IMMZ	E P A
ANALYTICS	**Health management information system**	*Coverage indicators, e.g. DHIS2*		IMMZ	E P A
PUBLIC HEALTH	**Public health surveillance platform**	*Adverse events, outbreak detection*			E P A
FINANCING	**Benefits package registry**	*Which health services are covered, for whom*			E P A
Group: REGISTRY COMPONENTS: THE FOUNDATIONS					
IDENTITY	**Client registry**	*One person, across systems*		IMMZ	E P A
RECORD	**Lifelong health record**	*Incl. immunization registry*		IMMZ	E P A
WORKFORCE	**Health workforce registry**	*Who vaccinated*		IMMZ	E P A
LOCATION	**Facility registry**	*Where it was given*		IMMZ	E P A
PRODUCTS	**Product registry**	*Vaccines, batches*		IMMZ	E P A
MEANING	**Terminology service**	*SNOMED CT · ICD · LOINC*		IMMZ	E P A
STRUCTURE	**Logical information model repository**	*Core data set · FHIR IG · OpenEHR*		IMMZ	E P A
FOUNDATIONAL DPI: WHOLE OF GOVERNMENT, NOT HEALTH-SPECIFIC					
IDENTITY	**National digital ID**	*National or federated ID*		IMMZ	E P A
CIVIL REGISTRATION	**CRVS**	*Births that feed the registry*		IMMZ	E P A
TRUST	**Trust services**	*PKI · signatures · GDHCN · verifiable credentials*		IMMZ	E P A
EXCHANGE	**Data exchange**	*Government data exchange layer*		IMMZ	E P A
CONSENT	**Consent and privacy**	*Consent records, access logs*			E P A
MESSAGING	**Notifications**	*SMS reminders · push notification*			E P A
INTEROPERABILITY runs through every layer					
INFORMATION MEDIATOR	**HIE / API gateway**			IMMZ	E P A

STANDARDS WE USE TODAY

☐ HL7 FHIR ☐ IPS ☐ ICVP IG ☐ SMART DAK ☐ SNOMED CT ☐ ICD-10 / 11 ☐ LOINC ☐ openEHR ☐ GS1 ☐ Other: _____

WHERE DID WE DISAGREE?

★ REGIONAL

Which starred blocks could be shared across countries, and who would hold them?
Carries to Sheet 5.

! What we don't have yet (*8 min*) · *the last step of every sheet* **!**

"Absent" is a finding, not a failure. The only question is whether it blocks this use case.

Narrow: one population or credential · **Shared**: build once for many programmes · **Borrowed**: adopt a regional or international artefact

Gap: an IMMZ block marked P or A above	Blocks us now	Needed in 12 mo	Can wait	Narrow	Shared	Borrowed	Debt this creates
	○	○	○	☐	☐	☐	
	○	○	○	☐	☐	☐	
	○	○	○	☐	☐	☐	

Core Data Set, Terminology and Specifications

Decisions to be discussed: who governs the core data set, and how terminology is licensed and served.

DPI-H for Health Workshop
Policy-maker track · Day 1 and Day 2

Country _____ **Table** _____

1 Data elements: how do we need to capture them? 20 min · circle one per row

DISCUSS Go row by row. **Differently** means the data exists, but in another form, code or system: say where. Elements from the immunization DAK; ✓ = also on the digital ICVP.

#	Data element	Type	ICVP	Same	Differently	Not at all	Where or how we capture it today
1	Unique identifier (IMMZ.C.DE.1)	ID	✓	○	○	○	
2	Name (IMMZ.C.DE.2)	Text	✓	○	○	○	
3	Date of birth (IMMZ.C.DE.10)	Date	✓	○	○	○	
4	Sex (IMMZ.C.DE.5)	Coded	✓	○	○	○	
5	Caregiver's full name (IMMZ.C.DE.15)	Text	✓	○	○	○	
6	Vaccine brand (IMMZ.D.DE.18)	Coded	✓	○	○	○	
7	Date and time of vaccination (IMMZ.D.DE.20)	Date-time	✓	○	○	○	
8	Dose number (IMMZ.D.DE.124)	Number	–	○	○	○	
9	Total doses in series (IMMZ.D.DE.125)	Number	–	○	○	○	
10	Vaccine manufacturer (IMMZ.D.DE.23)	Coded	✓	○	○	○	
11	Vaccine batch number (IMMZ.D.DE.24)	Text	✓	○	○	○	
12	Health worker identifier (IMMZ.D.DE.35)	ID	✓	○	○	○	
13	Due date of next dose (IMMZ.D.DE.149)	Date	–	○	○	○	
14	Health certificate identifier (IMMZ.D.DE.152)	ID	✓	○	○	○	
15	Issuer's digital signature (ICVP core)	Signature	✓	○	○	○	

2 Our terminology and specifications 5 min

Item	Radio options
SNOMED CT / SNOMED GPS	○ Licensed ○ In discussion ○ No ○ Unsure
ICD in use	○ ICD-10 ○ ICD-11 ○ Both
LOINC	○ Used ○ Not used ○ Unsure
Terminology service	○ Running ○ Partly ○ None
National core data set	○ Exists ○ Draft ○ None
National FHIR IG (immunization or otherwise?)	○ Published ○ Draft ○ None
IPS	○ Adopted ○ Planned ○ No
SMART IMMUNIZATION DAK	○ Adapted ○ Reviewed ○ Not yet

3 Who owns it, and what we buy 5 min

WHICH INSTITUTION WOULD OWN AND GOVERN OUR NATIONAL CORE DATA SET?

WHO WOULD RUN THE TERMINOLOGY SERVICE?

WHAT WE WOULD PUT IN THE NEXT STEP (TICK)

☐ Conformance to the national FHIR IG
☐ Functional, Data, and Interoperability requirements leveraged from a WHO SMART Digital Adaptation Kit and or FHIR IG
☐ Terminology bindings: SNOMED, ICD, LOINC, etc
☐ Open APIs and interoperability standards used, no lock-in
☐ Each digital solution tested at an interoperability lab or connect-a-thon before go-live

! What we don't have yet (*8 min) · the last step of every sheet* **!**

"Absent" is a finding, not a failure. The only question is whether it blocks this use case.

Narrow: one population or credential · **Shared**: build once for many programmes · **Borrowed**: adopt a regional or international artefact

Gap: a "Not at all" element, or a missing standard or owner	Blocks us now	Needed in 12 mo	Can wait	Narrow	Shared	Borrowed	Debt this creates
	○	○	○	☐	☐	☐	
	○	○	○	☐	☐	☐	
	○	○	○	☐	☐	☐	

Elements from the WHO SMART Guidelines immunization data dictionary and the digital ICVP core data dictionary (v2). Full workbooks in your take-home pack.

Trust, and Who Decides

The hard part is not cryptography and trust architecture. It is deciding which national institution is authorized to sign for the health sector, who accepts a foreign digital signature, and which institution holds each decision, and maintains the digital systems.

Country _____ **Table** _____

1 Module 4 · Trust. Who signs, who holds it, who checks it 18 min · name, don't decide

ISSUER · SIGNS
Which institution digitally signs credentials for our health sector?

→

CREDENTIAL · HELD BY THE PERSON
Where does the person hold it today?
☐ Paper card ☐ Paper QR ☐ Citizen app ☐ Wallet ☐ Nowhere yet

→

VERIFIER · CHECKS
Who needs to check it?
☐ Clinic ☐ School ☐ Border or port health ☐ Employer ☐ Other: _____

TRUST NETWORK · GDHCN. Countries exchange public keys, so a verifier anywhere can check a signature made here.
WHO WOULD HOLD OUR NATIONAL TRUST ANCHOR? _____

WHAT WE ALREADY HAVE (Y / P / N)
National PKI or certificate authority ○ Y ○ P ○ N
E-signature recognised in law ○ Y ○ P ○ N
Signed health certificates issued before ○ Y ○ P ○ N
GDHCN: ○ Onboarded ○ In process ○ Not yet ○ Unsure

THREE QUESTIONS TO TAKE HOME

1. _____ 2. _____ 3. _____

2 Module 5 · Governance. Who holds the four decisions 30 min · name an institution, not a person

RULES *"If no one can name the holder, write UNASSIGNED. That is the finding."*

Decision	What it settles	Who holds it today	Formal basis	Unassigned
Architecture authority	Which blocks are national, and which systems connect		☐ Law ☐ Decree ☐ TWG ☐ None	☐
Standards mandate	Which standards are required, including in procurement		☐ Law ☐ Decree ☐ TWG ☐ None	☐
Core data set custodian	Who maintains the data set and its codes		☐ Law ☐ Decree ☐ TWG ☐ None	☐
Trust anchor	Who digitally signs for health, and who accepts foreign signatures		☐ Law ☐ Decree ☐ TWG ☐ None	☐

THE ONE CHANGE THAT WOULD UNBLOCK THE MOST

LEGAL BASIS (Y / P / N)
Data protection covers health data ○ Y ○ P ○ N
Basis for cross-border sharing ○ Y ○ P ○ N
Consent for minors and dependants ○ Y ○ P ○ N

LEVERS WE CAN ACTUALLY PULL
☐ Procurement conditions
☐ Technical Working Group (TWG) mandate
☐ Conditional financing
☐ Regulation or licensing
☐ System certification

! What we don't have yet *(8 min) · the last step of every sheet* **!**
"Absent" is a finding, not a failure. The only question is whether it blocks this use case.
Narrow · Shared · Borrowed: see the cover

Gap: a missing signer, legal basis or unassigned decision	Blocks us now	Needed in 12 mo	Can wait	Narrow	Shared	Borrowed	Debt this creates
	○	○	○	☐	☐	☐	
	○	○	○	☐	☐	☐	
	○	○	○	☐	☐	☐	

Trust model per the digital ICVP specification and the WHO Global Digital Health Certification Network (GDHCN).

Doing It Together

From a national landscape to a regional proposition. Discuss these ideas against **your country**, then write what your country proposes and would nominate for the region.

Country _____ **Table** _____

1 Three propositions, against our position

25 min · circle one per card

DISCUSS Would you adopt it? What would you have to change? What would stop you?

Card	Title	Description	Response options and fields
A	**A joint data model for the personal health record**	IPS plus an immunization core, profiled once for the region and adopted nationally. National extensions stay sovereign.	○ We'd adopt it ○ With changes ○ Not yet WHAT WE WOULD HAVE TO CHANGE WHAT WOULD STOP US
B	**Shared testing and an interoperability lab**	A regional sandbox and test suite where systems prove conformance before national go-live, and where skills are built.	○ We'd use it ○ With changes ○ Not yet WHAT WE WOULD HAVE TO CHANGE WHAT WOULD STOP US
C	**A regional connect-a-thon within 12 months**	A target window, a host, a scope: immunization records exchanged and verified across borders.	○ We'd take part ○ As observers ○ Not yet WHAT WE WOULD SEND (TICK) ☐ A system ☐ Our IG ☐ Technical staff ☐ Policy leads WHAT WE NEED FIRST (TICK) ☐ An adopted IG ☐ A system willing to test ☐ Someone funded to prepare

★ Our nomination

35 min · each country writes its own · collected at the 15:00 coffee

COMPONENT OR ARTEFACT TO DO ONCE, REGIONALLY

WHY TOGETHER, NOT EACH OF US?

WHAT OUR COUNTRY WOULD CONTRIBUTE

FIRST REGIONAL STEP

TABLE CHECK: THE OTHER NOMINATIONS AT OUR TABLE

Country	Their nomination	Same	Close	Different
		○	○	○
		○	○	○
		○	○	○
		○	○	○

Look back at the ★ blocks on Sheet 2 for candidates.

! What we don't have yet (*8 min*) · *the last step of every sheet* **!**

"Absent" is a finding, not a failure. The only question is whether it blocks this use case.

Narrow · Shared · Borrowed: see the cover

Gap: what would stop us joining A, B or C	Blocks us now	Needed in 12 mo	Can wait	Narrow	Shared	Borrowed	Debt this creates
	○	○	○	☐	☐	☐	
	○	○	○	☐	☐	☐	
	○	○	○	☐	☐	☐	

First Move and the Investment Required

Keep it short: you will read it out in 60 seconds. **Choose a speaker who did not write it.**

COUNTRY _____ **SPEAKER** _____ **TABLE** _____

OUR USE CASE · FROM SHEET 1 A child vaccinated in _____ should be able to _____ in _____.

Section	Content
1 Our top national priority (8 min)	**DISCUSS:** Each person names their pick from the gap analyses on Sheets 1 to 5. Then agree ONE. COMPONENT WHY THIS ONE BIGGEST GAP OR RISK
2 Our 12-month action (10 min)	**FACILITATOR ASKS:** *"Is this realistic in twelve months with the people and money you have? If not, make it smaller."* ACTION (TWO LINES) OWNER (INSTITUTION) DEPENDS ON
3 What it costs, and who could fund it (10 min · cost drivers, not unit costs)	**DISCUSS:** Tick the drivers for your action, then circle the one that dominates. COST DRIVERS (TICK) ☐ Integration effort ☐ Terminology licensing ☐ Devices and connectivity at point of care ☐ Running shared infrastructure (recurrent) ☐ Training and change management ☐ The cost of not doing it LIKELY FUNDING SOURCE ☐ Domestic budget ☐ World Bank ☐ ADB ☐ Bilateral or other donor ☐ Other: _____ SUPPORT NEEDED (TICK) ☐ Technical assistance ☐ Funding ☐ Training ☐ Standards or licensing ☐ Policy or governance ☐ Peer learning FROM WHOM
★ Regional commitment (10 min · from your Sheet 5 nomination)	TWO OR THREE SENTENCES, IN YOUR OWN WORDS. THE TABLE MERGES WHERE THEY COINCIDE.
5 The one gap we refer for follow-up (5 min)	THE GAP (TWO LINES)