Scoping Guidance: Digital Public Infrastructure Approaches to Strengthen Public Financial Management in Health

April 2026

Background

This scoping guidance supports exploration of PFM challenges affecting health service delivery and consideration of DPI's relevance in addressing them, based on scoping conducted in 2024 and 2025

Scoping in Ethiopia: In 2024, the Ministry of Health (MoH) in Ethiopia, with technical support from the Clinton Health Access Initiative (CHAI) and eGovernments Foundation (eGov), conducted a detailed assessment to:

- Map the current health resource tracking (HRT) landscape in Ethiopia
- Identify challenges, gaps, and opportunities to improve real-time tracking of health expenditures across programs and levels.
- Assess feasibility of data exchange/ interoperability across existing and emerging systems
- Develop wider strategy for improving interoperability and digitization of HRT, to ultimately strengthen public financial management (PFM) in the health sector.

Scoping across LMICs: In 2025, CHAI and eGov engaged in a broader scoping exercise to analyze PFM challenges affecting health in 14 low- and middle-income countries (LMICs) where CHAI works, and describe the potential for a digital public infrastructure (DPI) to address these.*

Leverage experiences of **ministries** and **health systems** in **low- and middle-income countries (LMICs)** to:

Describe common **PFM** challenges in **health** and their effects on **service delivery**

Illustrate how **DPI** approaches can address these PFM challenges for the **health sector** and beyond

* See main report and conceptual framework in Annex 3.

Overview

This guide offers a standardized but adaptable framework to identify priority health PFM challenges and assess DPI's potential to address them

Who is this guide for?

Government stakeholders *Ministries of Health, Finance, and ICT*

Technical partners *Implementers and advisors supporting PFM and digital systems*

Funders and development partners *Making investments at the intersection of digital, PFM/financing, and health in LMICs*

How might this report be used?

1. Define health service delivery challenges and priorities
2. Map PFM challenges and information bottlenecks contributing to these challenges
3. Assess potential for a DPI approach to significantly address the challenge
4. Define a clear outcome, scope, and success metrics for solutioning

Although this guidance document is structured in sequential steps, this should be an **iterative and context-sensitive process**, integrating insights across a country's major priorities and wider health, finance, and digital environment.

We encourage you not to start from the perspective of searching for applications for a digital solution; rather, ground the analysis in a government's major service delivery priorities, and work backwards towards understanding financing blockers and information issues at play.

DPI approaches may not always be appropriate; while they can address specific bottlenecks in information and resource flows, they cannot resolve insufficient funding, restrictive legal frameworks, or underlying state capacity constraints. Digital tools should always be one piece of an approach—with concurrent attention to policy, institutional, and financing factors.

This is **not a comprehensive assessment framework**. Examples of relevant detailed assessment frameworks are included in Annex 1.

Part 1A: Define problems and their root causes

Define high-priority service delivery challenges and the major financing and information bottlenecks contributing to these challenges

Define key service delivery challenges and priorities*

- What are **major service delivery challenges?**
  - Look across different health system building blocks—for example, are there commodity stock-outs? CHWs not getting paid? Infrastructure in disrepair?
- What's the **scale of the problem**? Who is this affecting and where? Are there inequities across geographies?
- Are there **government- or donor/partner-led efforts underway** to address challenges?

Map resource and PFM constraints and enablers* *(see Conceptual Framework for reference)*

- Consider **PFM challenges and resource bottlenecks** (e.g., misaligned budgeting, disbursement delays, unpredictability, etc.) affecting these problems
- Consider **underlying structural and political constraints**
- More broadly, consider what parts of the **existing PFM system** are working well, existing PFM reforms, empirical metrics (PEFA scores), etc.

Explore information bottlenecks*

- What are the **major decisions or actions** constrained by missing or delayed information? **Who** is this a problem for? What **systems/tools** is information meant to come from?
- What other factors are preventing the **availability** and **use** of data (e.g., governance and capacity considerations)?
- More broadly, consider **existing tools** (e.g., IFMIS, HMIS, procurement systems), challenges with their fragmentation / interoperability or data use, or rules or institutional incentives

* Refer to Annex 1 for existing frameworks to assess health systems and identify key challenges. If needed, it may also be useful to begin with a broader landscaping of PFM and data systems; recommendations provided in Annex 2.

Part 2A: Assess Potential for DPI Approach *(may be concurrent with 2B)*

Determine whether a DPI approach might be appropriate for a priority challenge

Appropriateness and adoption of a DPI approach depends on (1) whether a DPI approach could significantly address the challenge and (2) the broader digital and PFM environment.

1. Challenge could be addressed with DPI approach

There should be a **defined, high priority challenge** with strong political backing, that could **potentially be addressed with a DPI approach.**

Based on findings on PFM challenges and underlying bottlenecks (slide 5), consider relative contribution of information gaps, resource constraints, and other underlying constraints:

- Which **decisions or actions** in the process flow are constrained by missing or delayed information?
- Could improving data access or systems directly **enable action or unblock flows**? Or is the core issue **non-technical** (e.g., liquidity, political will)?
- Therefore, could a DPI approach **address major bottlenecks and breakdowns,** and significantly address challenge—by enabling improved access to data and linkage between datasets, making payments faster, reducing leakages, etc.?

See next slide for excerpt from report on what DPI can/cannot fix.

2. There is a strong enabling environment

Success of a DPI approach depends on the **enabling environment,** including DPI-aligned thinking, foundational infrastructure, and capacity.

Consider broader strategies and infrastructure:

- Strength of **foundational tech infrastructure and digital ecosystem**
- Indication of MOH, MOF, and **overall government commitment and investment in digitization and DPI-aligned thinking** (DPIs prioritized in strategies or DPIs are in place)
- **Feasibility to test a DPI approach**—is there an opportunity to leverage and/or establish DPI components?
- Buy-in **across government** (MOH, MOF, ICT) to test a DPI approach?
- **Potential technical and financial partners** that could support.

Also see Annex 2B.

Part 2A: Assess Potential for DPI Approach

DPI cannot solve for all PFM challenges, and structural constraints need to be considered when pursuing a DPI approach

DPI cannot address all PFM challenges; while there are multiple constraints within wider PFM and political environments that DPI will not solve for. It is critical to understand whether a challenge can feasibly be solved with DPI and to consider underlying constraints when building an approach.

✓ DPI has potential to address:

- **Information flow bottlenecks**
  caused by siloed and often manual systems
- **Payment delays**
  due to manual verification & analogue payments
- **Resource leakage**
  due to weak oversight, poor expenditure tracking, manual verification processes
- **Data fragmentation**
  across disparate, siloed systems
- **Duplicate records and ghost workers**
  due to no updated, single source of truth

✗ DPI cannot fix:

- **Insufficient health budgets**
  while payments can be expedited and budgets better executed, there may still be insufficient funds
- **Legal/regulatory barriers**
  some changes may be required to PFM rules; national legal frameworks are needed to enable DPI
- **Core capacity constraints**
  creating and sustaining change requires the right skillsets and personnel across levels
- **Political economy challenges**
  DPI approach requires political buy-in, coordination, enforcement; data cannot solve for political economy issues
- **Infrastructure gaps**
  electricity, internet connectivity, and existing tools in place are core constraints to be considered

Part 2B: Deep Dive into Bottlenecks *(may be concurrent with 2A)*

Deeply understand processes, information flows, and corresponding systems

Conduct a deeper assessment of the funding flows, key bottlenecks, and data system issues. This will help assess whether and what DPI approach could address the challenge at hand, and what level of change could be achieved.

Map process & information flows

For prioritized challenge(s), **map the process flows and key decisions, information needed**—indicating breakdowns and challenges:

- What are the **information needs** and how would data ideally flow?
- Where are **systems failing to exchange** data? Where is data **not being used** effectively?
- How are **payments/disbursements** made at each step of the funding flow?
- Where are **delays or leakages** occurring? Are there insufficient funds/broader fiscal constraints that are the major root causes?
- Are **institutional** mandates, **incentives**, or **capabilities** lacking or misaligned?
- Are **PFM structures and rules** causing friction—e.g., facility autonomy, procurement rules not flexible for health sector needs, other rigidities?

It may be useful to use flow diagrams and tables to trace **how finances and information flow**, and where there are **major disruptions or delays** (see next slide for example).

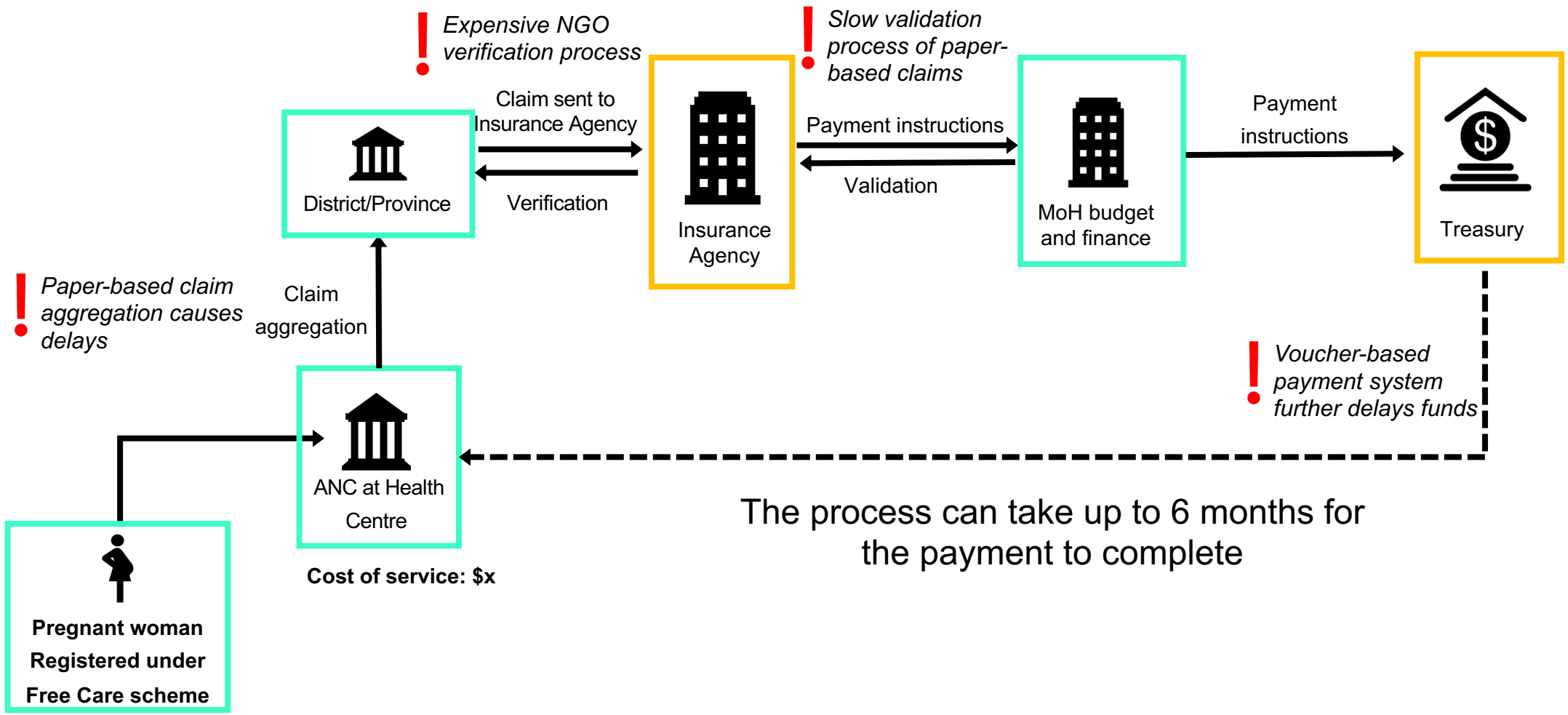
Map major data systems/platforms & DPIs

Alongside the process flow mapping, unpack the **major data systems and DPIs** used (if relevant). For each, understand:

- What is the information available **(data attributes**)?
- How and by whom is data **entered, quality assured, and aggregated**? Is it entered at transaction level or aggregated?
- Who has **access** to information generated?
- Who **analyzes** the data, when, and how? What decisions are made using the information/reports from these?
- Are there data **quality** or completeness issues (e.g., missing fields)?
- Are there current or planned **integrations** or **interoperability** with other systems?

Part 2B: Deep Dive into Bottlenecks

Example: Process flow of reimbursement mechanism for a Pregnant Women who comes for an ANC visit



Note: this diagram is adapted from several process flows illustrated in the full report.

Part 3: Framing the challenge and defining success

Define a challenge with a clear outcome, scope, and success metrics for solutioning

Using this analysis, detail the challenge to be addressed and what parts of it can be solved with a DPI approach; and define success using key progress indicators/metrics.

1. Detail a specific challenge & goals for solutioning:

- Create a structured description of a specific problem, in which a user or stakeholder experiences a need, challenge, or constraint.
- Capture the relevant context, initiating events, and desired outcome—without presuming or defining the method, tool, or process that will address it.
- Define a primary objective, with a clear outcome and scope.

Examples:

- Reduction in time for payments to community health workers in rural areas of Burkina Faso, to improve CHW motivation and performance
- Increase in budget execution of Gavi (or other key donor) funds across all regions in Ethiopia, to improve immunization coverage
- Enhanced predictability and equity of reimbursements to facilities under the Free Care program in Burkina Faso, to improve their cash flow and reduce stock-outs

2. Map what could be solved with a DPI approach:

- What information is currently missing or of low fidelity, and who needs it?
- Where are interactions between agencies breaking down?
- What will actors do with better information and what part of the challenge will this solve?

For example, to improve predictability of facility reimbursements:

Who is the key actor	What do they need (info currently not available, timely, etc.)	To what end?
Insurance agency	Verified claims data by patient and by facility	Accurately reimburse facilities for services delivered, in a timely manner
Ministry of Finance	Digital payment infrastructure	Make timely, secure, auditable payments to health facilities

3. Define Success

- Finally, it is important to have a clear definition of success and key progress indictors or metrics we are trying to change with a DPI solution.

Examples:

- Reporting/liquidation status of key donor grants
- Equity of distribution of funds at PHC facilities
- Efficiency in resource utilization at PHC facilities (incl. Adherence to guidelines)
- Administrative burden in reporting, payments
- Average time for CHW payments

Note: This document does not contain recommendations on solutioning with a DPI approach. For more recommendations on this, please see the full report.

Disclaimer

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Annex 1: Frameworks

There are multiple existing frameworks that enable structured assessments of health systems, financing, and digital environments

- This guidance document does not intend to replace existing frameworks.
- Key frameworks for assessing health systems, financing, and budgeting include:
  - World Bank FinHealth Toolkit
  - Health Systems Performance Assessment
  - Health Financing Progress Matrix
  - Public Expenditure and Financial Accountability (PEFA) assessment
- There are also other tools that focus on assessing service availability, quality and/or equity (e.g., WHO Service Availability and Readiness Assessment (SARA)).
- In addition, key frameworks and broader indices for assessing digital maturity include the following (also see the Digital section below):
  - GovTech Maturity Index, which is a World Bank-developed index measuring digital transformation in the public sector, looking at maturity in four focus areas: supporting core government systems, enhancing service delivery, mainstreaming citizen engagement, and fostering GovTech enablers
  - Global Digital Health Monitor/Index, is a global resource that tracks, monitors, and evaluates the use of digital technology for health across countries.
  - UN E Governments Survey provides a comprehensive assessment of the digital government landscape across all 193 Member States. These include composite indicators based on self reported data from member states collected through questionnaires.

Annex 2A: Landscaping Considerations – Health Financing and PFM

A wider landscaping will inform feasibility, alignment with existing systems and reforms, and potential impact

Health Financing & System Context

Key Financing Metrics: Political commitment and fiscal space for health, as well as the overall level of financial protection. Consider:

- **Gross domestic product** per capita, to assess income level
- **Total health expenditure:** Government (%); External (%); Out-of-pocket (%); Private incl insurance (%)
- **Government allocation to health** (% of national budget/GDP)

Health System & Financing Structures: Health systems and financing structures and processes determine key entry points (e.g., whether to focus on central vs. subnational actors, key government priorities). Areas to consider:

- **Overall health system structure and level of decentralization** of healthcare (e.g., is it a federal system where states are mainly responsible for health?)
- **Financial protection schemes** and their coverage
- **Provider payment** mechanisms (at different levels—e.g., primary, secondary, tertiary)
- **Donor funding flows** (if donor funding is a significant portion of the health budget)**,** including how/where funds are managed and flow to spending units

Key Challenges & Priorities: Critical systems and financing challenges, priorities, and initiatives. Areas to consider:

- Key **health financing challenges** (e.g., high out-of-pocket spending, inefficiencies in spending, fragmentation of donor funds)
- Major health financing/systems **reforms/policies** underway
- Major **donors and their priorities**

Public Financial Management Context

Key PFM Metrics: PFM strengths and weaknesses. Metrics to consider:

- Public Expenditure and Financial Accountability (PEFA) assessment scores; PEFA assesses 31 indicators across seven PFM pillars important for key PFM outcomes of aggregate fiscal discipline, strategic allocation of resources, and efficient service delivery
- **Health budget execution rate (%),** ideally different levels and for different sources of funds

Key PFM Structures: Methods, processes, and systems used across the budget cycle, and how fiscal information flows across levels to/from the Ministry of Finance and donors. Areas to consider:

- **Budgeting methods (program-based, input-based, etc.),** and whether these align with how expenditures are tracked and managed and how providers are paid
- **High-level PFM processes (formulation, execution, monitoring)**, **at different levels of the health system,** including stakeholders involved at different stages of the process and timelines
- **PFM systems in use** (central and subnational; by funding source if relevant), including integrated financial management information systems (IFMIS), procurement, payroll, HR management, etc. (incl. both digital and analog)
- **High-level stakeholder mapping—**who manages health sector finances at different levels? For different sources of funds?
- Review of the **Chart of Accounts** and how the health sector (incl. different sources of funds, spending units, programs) are represented

Key Challenges & Priorities: Key PFM challenges and reform initiatives. Areas to consider:

- **Key PFM challenges**, incl. those described in PEFA assessment (e.g., inefficient / opaque procurement, poor budget credibility, etc.)
- **Major budgetary reforms underway** (e.g., performance or program-based budgeting)
- The seven PEFA pillars are: Budget reliability; Transparency of public finances; Management of assets and liabilities; Policy-based fiscal strategy and budgeting; Predictability and control in budget execution; Accounting and reporting; External scrutiny and audit

Annex 2B: Landscaping Considerations – Digital Environment

A wider landscaping will inform feasibility, alignment with existing systems and reforms, and potential impact

Policy Environment

- **Is there a digital transformation strategy?** Is it implemented? How are health and finance represented? Are digital reforms aligned with DPI principles?
- Is there a **PFM strategy** in place at MOF? Does it include digital reforms and are they aligned with DPI principles? How is health represented?
- Are there other **digital PFM initiatives** underway?
- **Is there a Digital Health Strategy** at the MoH (or ICT)? Is it implemented? How is financing and financial protection represented? What is the architecture proposed and is it aligned with DPI principles?
- For all the above, is there an associated costed roadmap or operational plan along with timelines for implementation of the strategies.

Digital Ecosystem & Governance

- **Digital health teams -** who manages digital health initiatives? How capable and empowered is this team?
- Who maintains **health IT architecture/software?**
- **Is there a coordinating body** across programs' technology in the health sector (or similar efforts)?
- **Is there a Ministry of ICT or similar?** What is their role in digital health and relationship with digital health teams?
- Who is championing and maintaining **digital public infrastructure?**
- **Engagement of MOH with MOF, IT Sector Ministry (if one exists) -** What is the current level and potential ease of coordination and collaboration?
- Is there a strong **local IT ecosystem**?
- How is the **private sector** engaged in govt software development and maintenance?

Digital Systems in Health & Finance

- **PFM systems** (federal/subnational/facility—also noted above)
- **Health resource tracking** tools used, their frequency/use, stakeholders involved (e.g., resource mapping, Health Accounts, etc.)
- **Insurance management** systems used for different schemes and functions
- **Procurement** systems
- **Payroll** systems
- **Human resource** management information systems (general and health-specific)
- **Health** management information systems (HMIS)
- **Decision support** tools (e.g., CommCare for CHWs)
- **Electronic Medical Records**
- **Logistics Management System**
- **Lab Management System**
- **Interoperability and integration of these systems**, incl. across levels

Digital Foundations and DPI

- State of **digital enterprise architecture**, including digital health architecture
- **Core DPI** in place (Digital ID, digital payments, data exchange), and/or efforts underway
- **Key registries** in use or under development (e.g., Health Facility, Health Worker, Immunization, Patient, Product, etc.)
- **Existence of a Data Exchange,** health stack or similar horizontal system integration tools in place (e.g., Health Information Exchange or sector-agnostic data exchange)
- Also see UCL's global map: Digital Public Infrastructure Map - UCL IIPP

Annex 3: Scoping conceptual framework

PFM challenges can impact health service delivery outcomes; and are often caused by fragmented data and amplified by structural constraints

Manifestations

Information bottlenecks

- **Limited standardization**, inability to link expenditures to health results
- **Redundant** data capture, no single source of truth
- Data **incomplete or untimely**
- **Low trust** in data

PFM challenges
(incl. resource bottlenecks)

- **Budget planning, allocation, & prioritization** misaligned with needs
- **Budget execution & financial flow bottlenecks** causing funding delays
- Gaps in **governance & accountability**

Health service delivery

- Essential medicine **stockouts**
- **Unpaid** health workers
- **Non-functional** equipment
- Unfunded **operational costs**
- Patients pay **out-of-pocket**

Structural, political constraints

Digital readiness, e.g.,

- Legacy system limitations
- Internet connectivity gaps
- Lack of data standards, registries
- Analog payment infrastructure

PFM structural rigidities, e.g.,

- Inflexible reallocation rules
- Complex request processes
- Limited local autonomy
- Revenue collection challenges

Underlying factors, e.g.,

- Baseline workforce capacity
- Geographic disparities
- Health system structure and service design

Governance across levels, politics & incentives, fiscal space, donor dependence, state capacity