Improving Interoperability of Health Information System in Tanzania

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Background

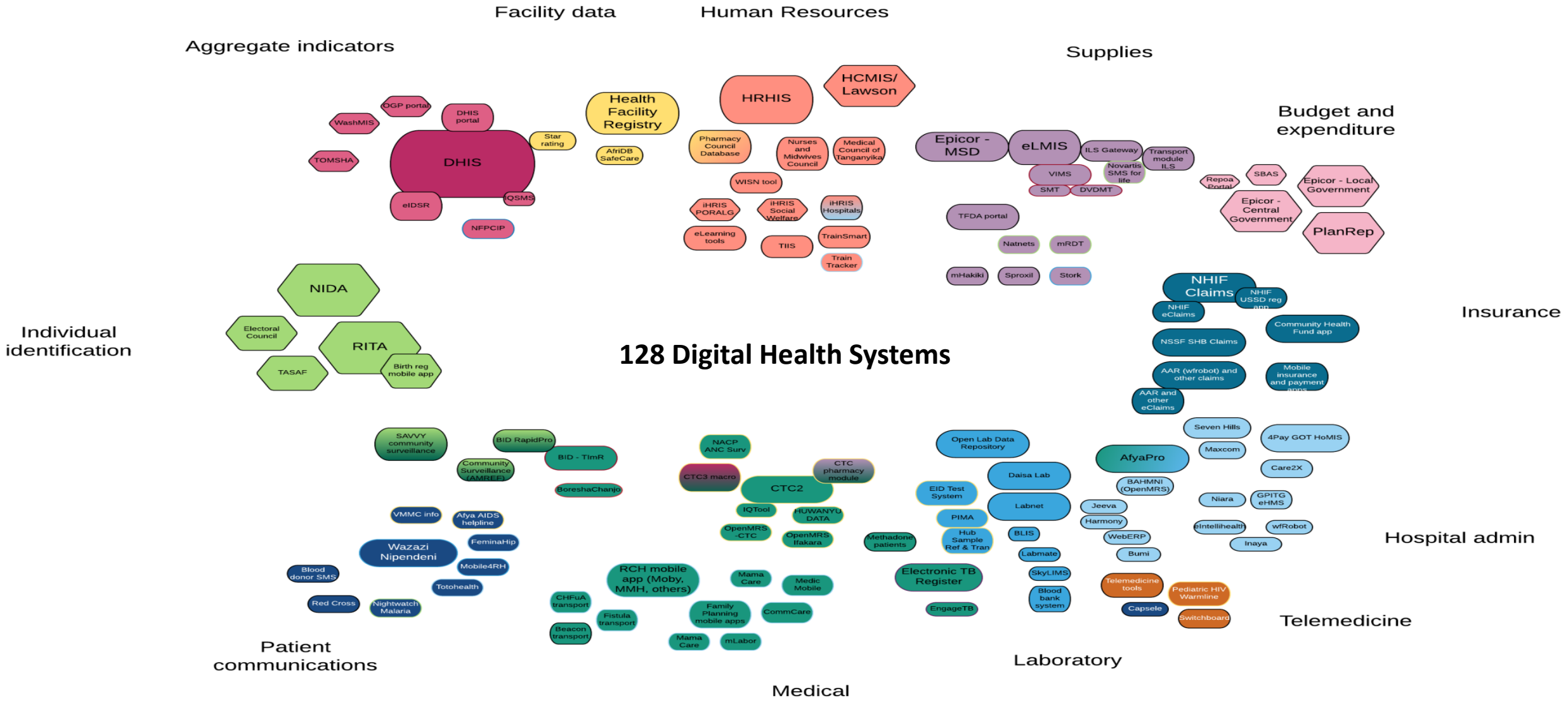
Vision:

National integrated health information system (NHIS)

Issues in consideration:

- Fragmented ICT pilots and numerous HIS silos
- Need of an interoperability Layer – Inadequate sharing/exchange of health information across the sector
- Fragmented and uncoordinated business processes
- Inexistence of common investment framework
- Governance and partner coordination
- Need for a Holistic Approach

Available systems - Across Health sector

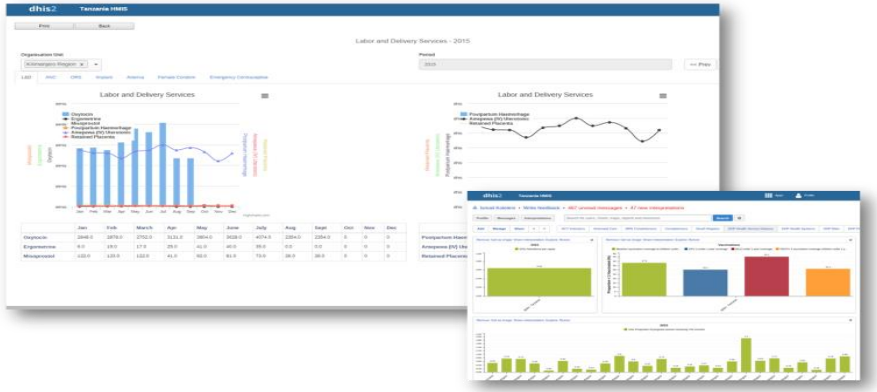


Source: DUP Assessment findings, 2016

Current Situation: Example

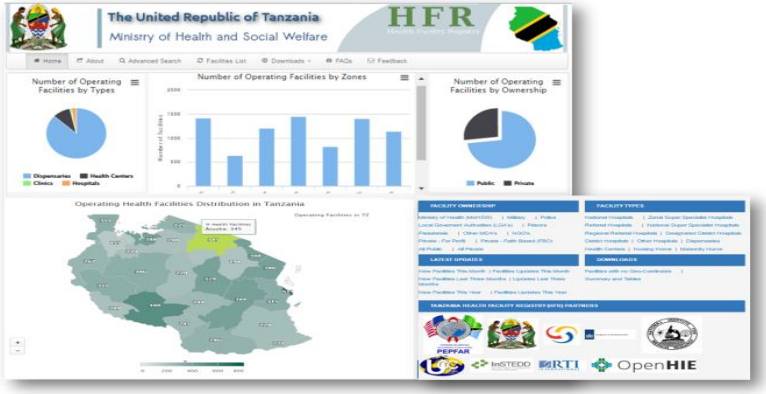
Current Situation: Data We Have

- We know *what* **service** (eg. ANC) is provided (DHIS2)



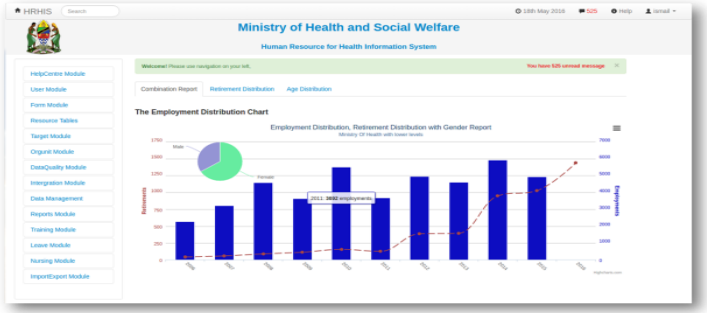
Current Situation: Data We Have

- We know *where* a **facility** provides services (HFR)



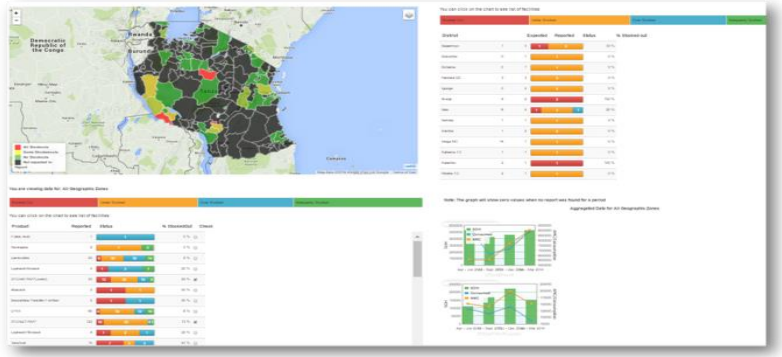
Current Situation: Data We Have

- We know the **provider** *who* provides services (HRHIS)



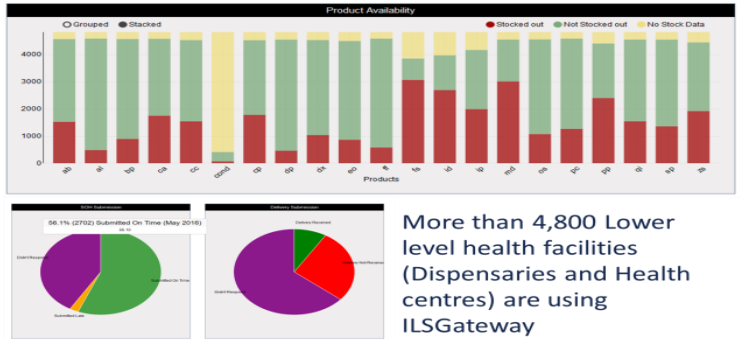
Current Situation: Data We Have

- We know *which* **commodities** are available at HF (eLMIS)



Current Situation: Data We Have

- We know *tracer* **commodities** availability (ILSGateway)



More than 4,800 Lower level health facilities (Dispensaries and Health centres) are using ILSGateway

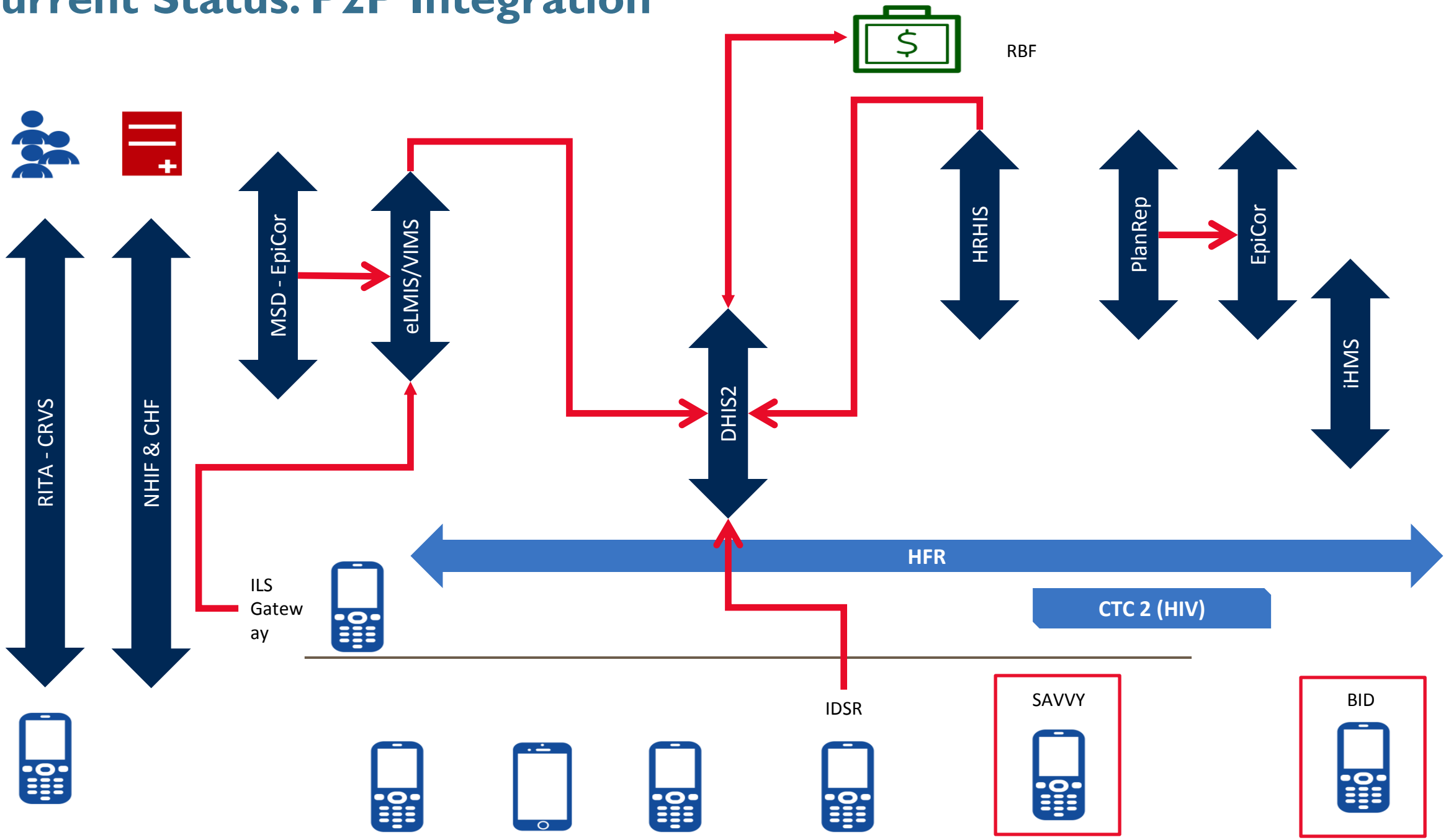
Current Situation: Data We Have

- We know *how much* **money** is available (District ERP, & MSD)

EPICOR @ msd & District Councils

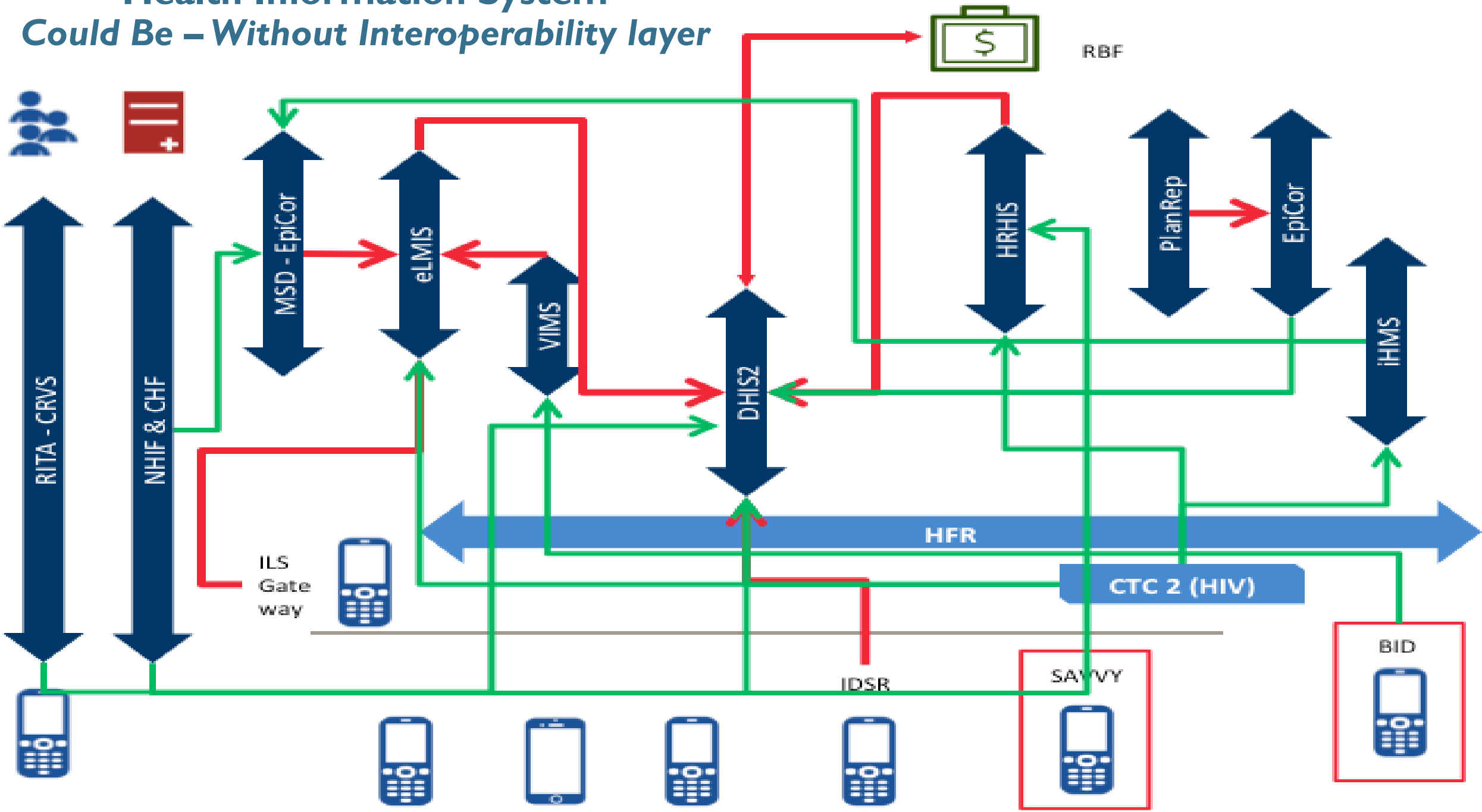
- We don't know *to whom* (**beneficiary**) services are provided (EMR) except HIV care (CTC2) and some Hospitals through iHFeMS
- We cannot easily compare *what, where, who, which, or how much*

Current Status: P2P Integration



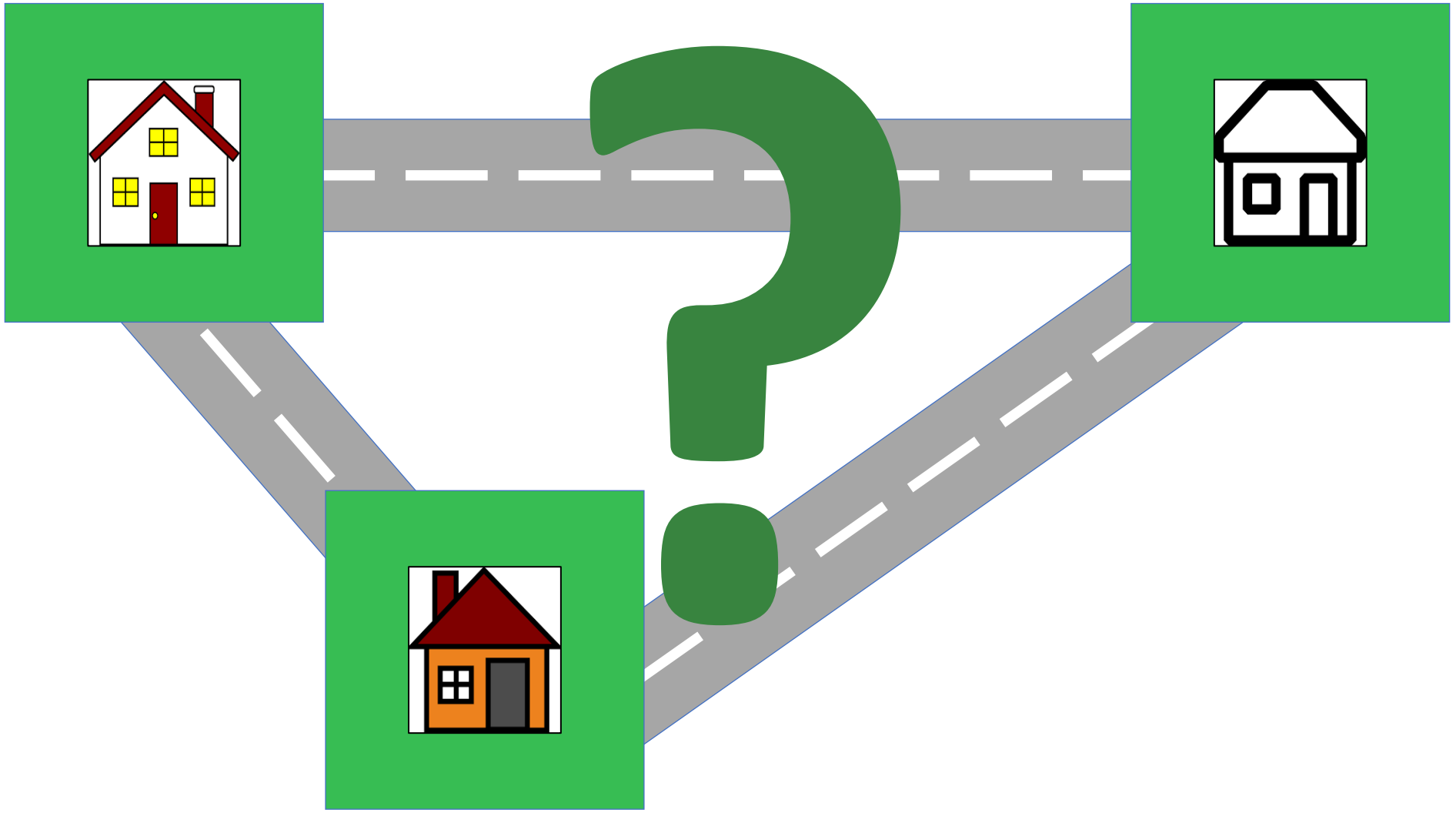
Health Information System

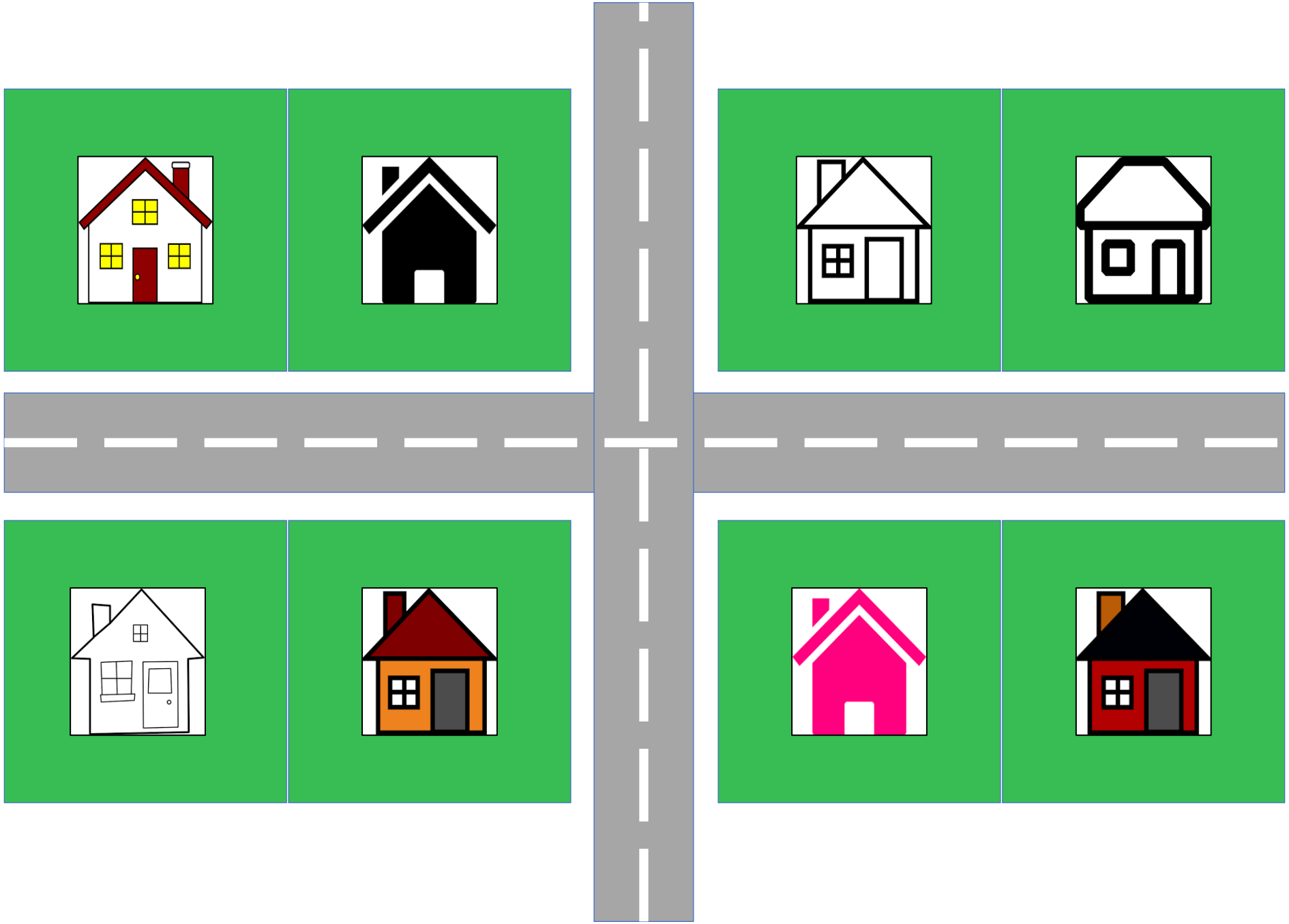
Could Be – Without Interoperability layer



THE QUESTION?

How do we harmonize HIS?





MOHCDGEC and Health Information Exchange (HIE) Commitment

Health Sector Strategic Plan (2015 – 2020)

- The health sector will embrace rapid development of ICT for improving administrative processes, patient/client recording and communication.
- The MOHCDGEC will stimulate development and guide interoperability of systems

The eHealth Strategy (2013 – 2018)

- Establish eHealth standards, rules, and protocols for information exchange and protection
- Establish comprehensive health facility, provider, and client registries with complete and current information that meets stakeholders' needs

eHealth Strategy Strategic Objectives

eHealth Strategy identified three strategic objectives as eHealth Foundations:

1. Enhance ICT infrastructure and services to **improve communication and information sharing** across the health systems and at all levels.
2. Establish eHealth standards, rules, and protocols **for information exchange** and protection.
3. Establish comprehensive health facility, provider, and client registries with **complete and current information** that meets stakeholders' needs.

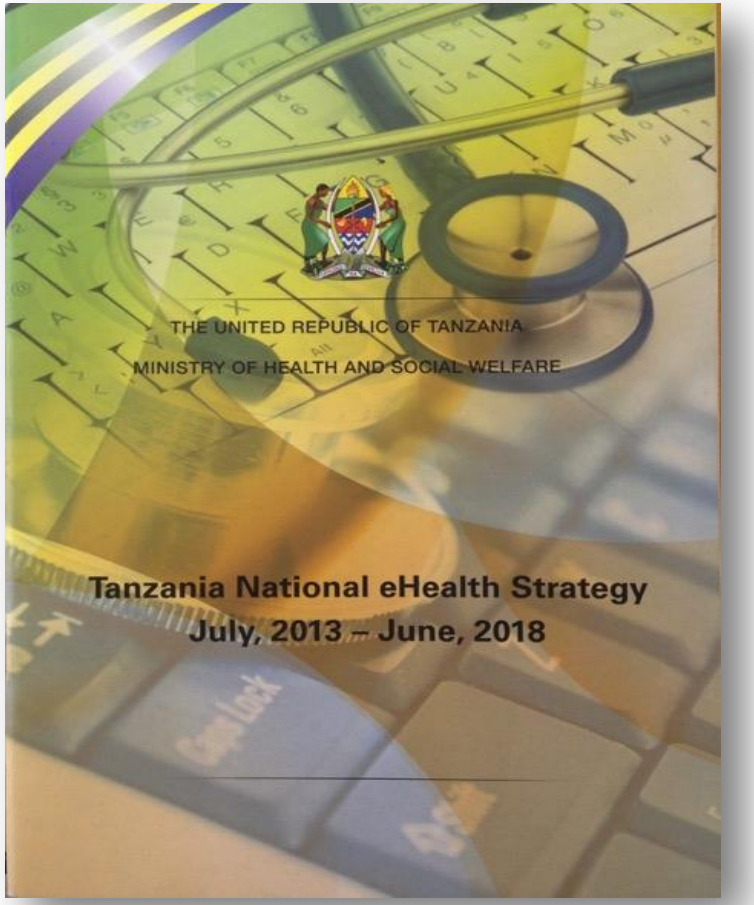
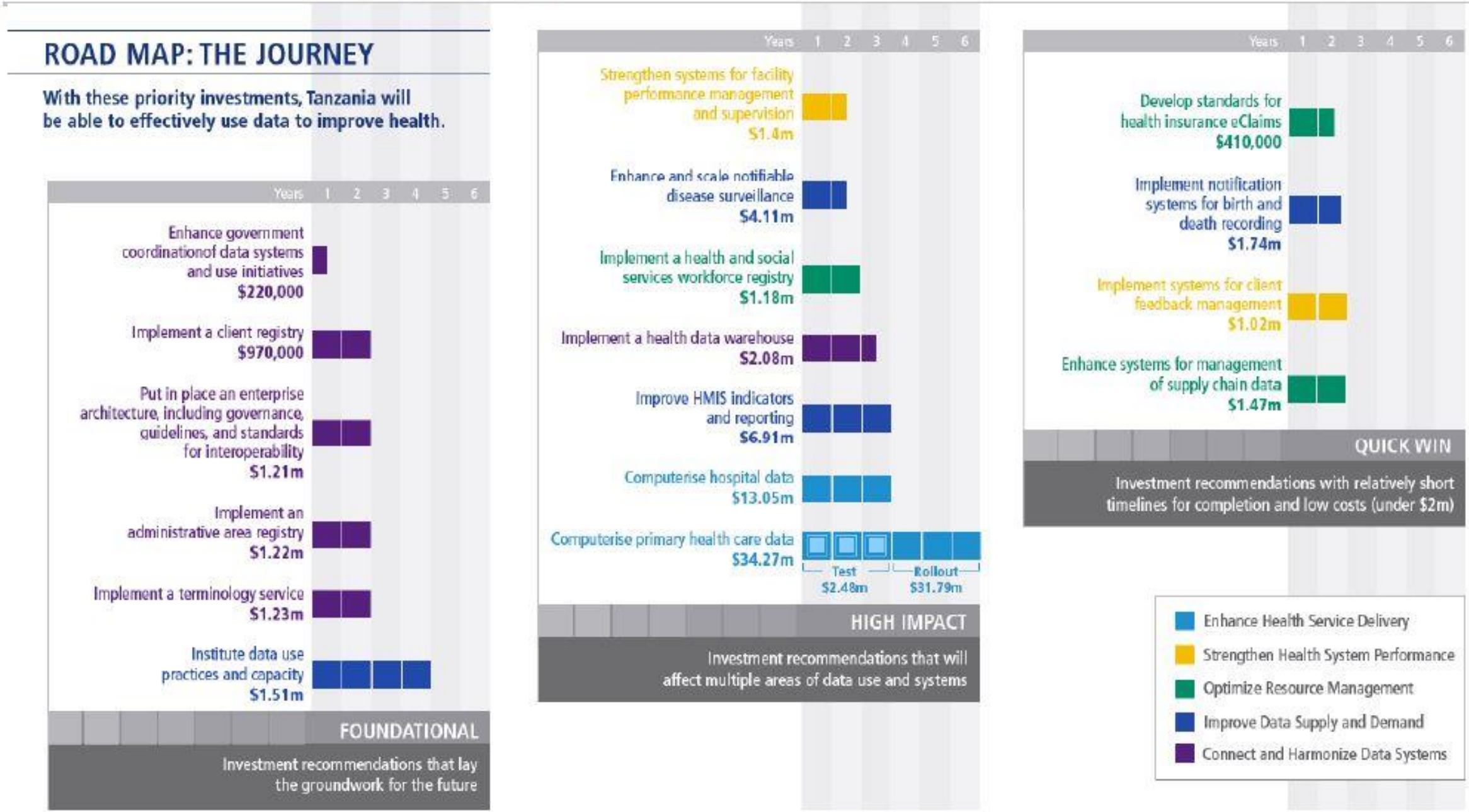


FIGURE 3. INVESTMENT RECOMMENDATION ROAD MAP

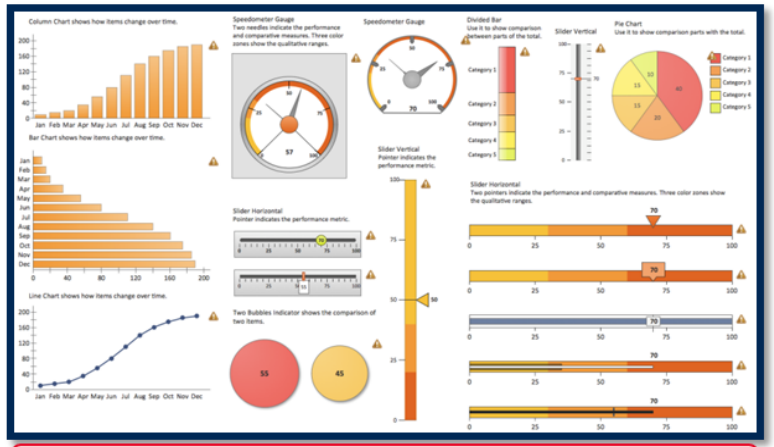


Tanzania HIE 'To Be' Conceptual Model

Shared Information Services Applications

- Health Facility Registry
- Provider Registry (HRHIS)
- Master Client Register
- Shared Health Records
- Program & Products Registry
- Terminology Services

Data Warehouse



Data Visualization

Data rules: Privacy, Confidentiality, Security, integrity and Quality

HEALTH INFORMATION MEDIATOR

Transport | Message Type | Data Elements | Codes

Services: Routing – Transformation – Mediations – Messaging – Security – Validation – Queuing & Staging

ESB

Hospital Information Management Domain
- Data Repository
- iHFeMS
- EMR

HMIS data Domain
- DHIS2
- eIDSR

mHealth data Domain
- mHealth Platform
- mHealth solutions

Immunization data Domain
- VIMS
- TImR

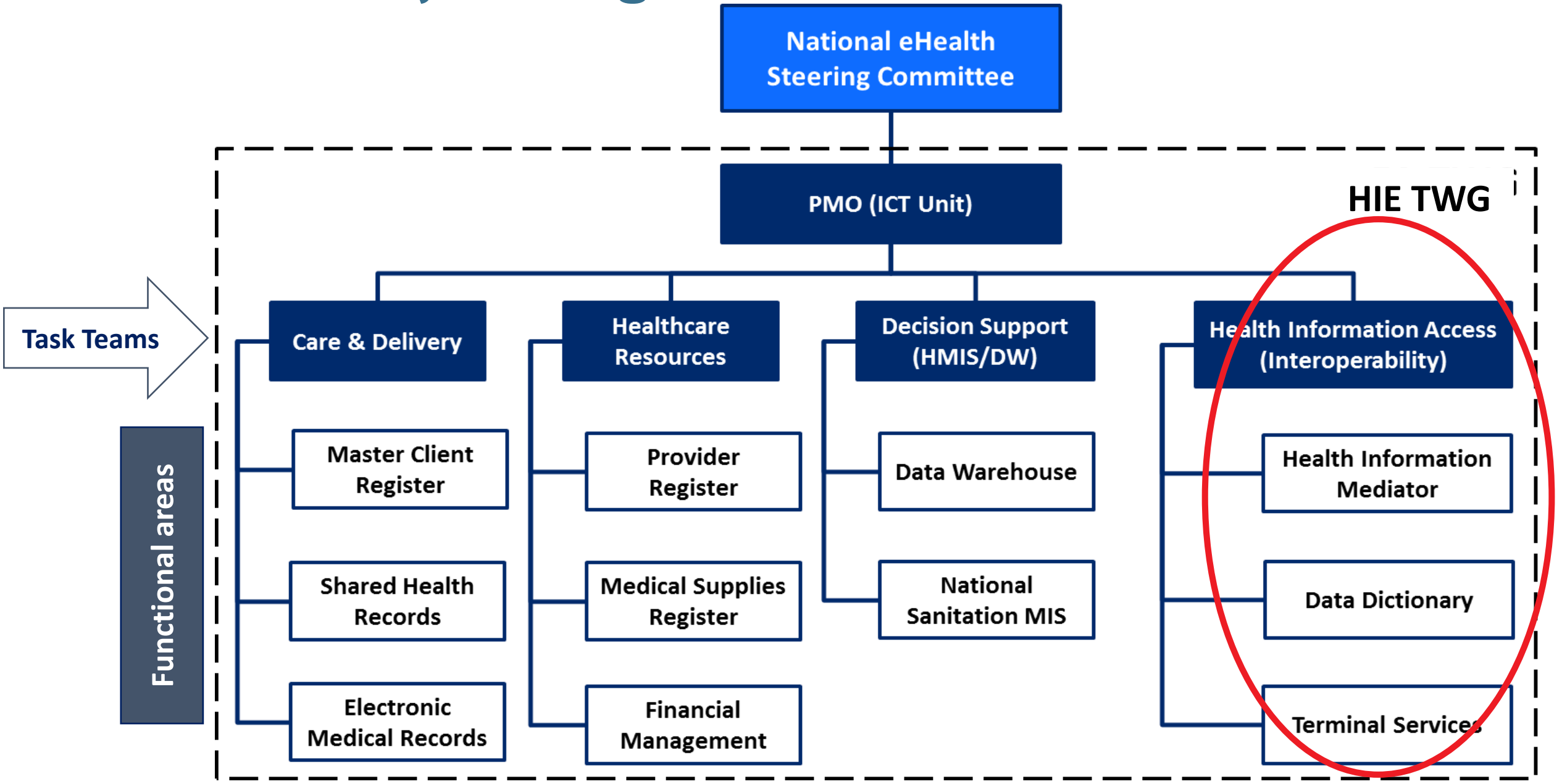
Logistics data Domain
- MSD E9
- eLMIS
- iHFeMS
- ILSGateway

Point of Service and Decision Support Applications

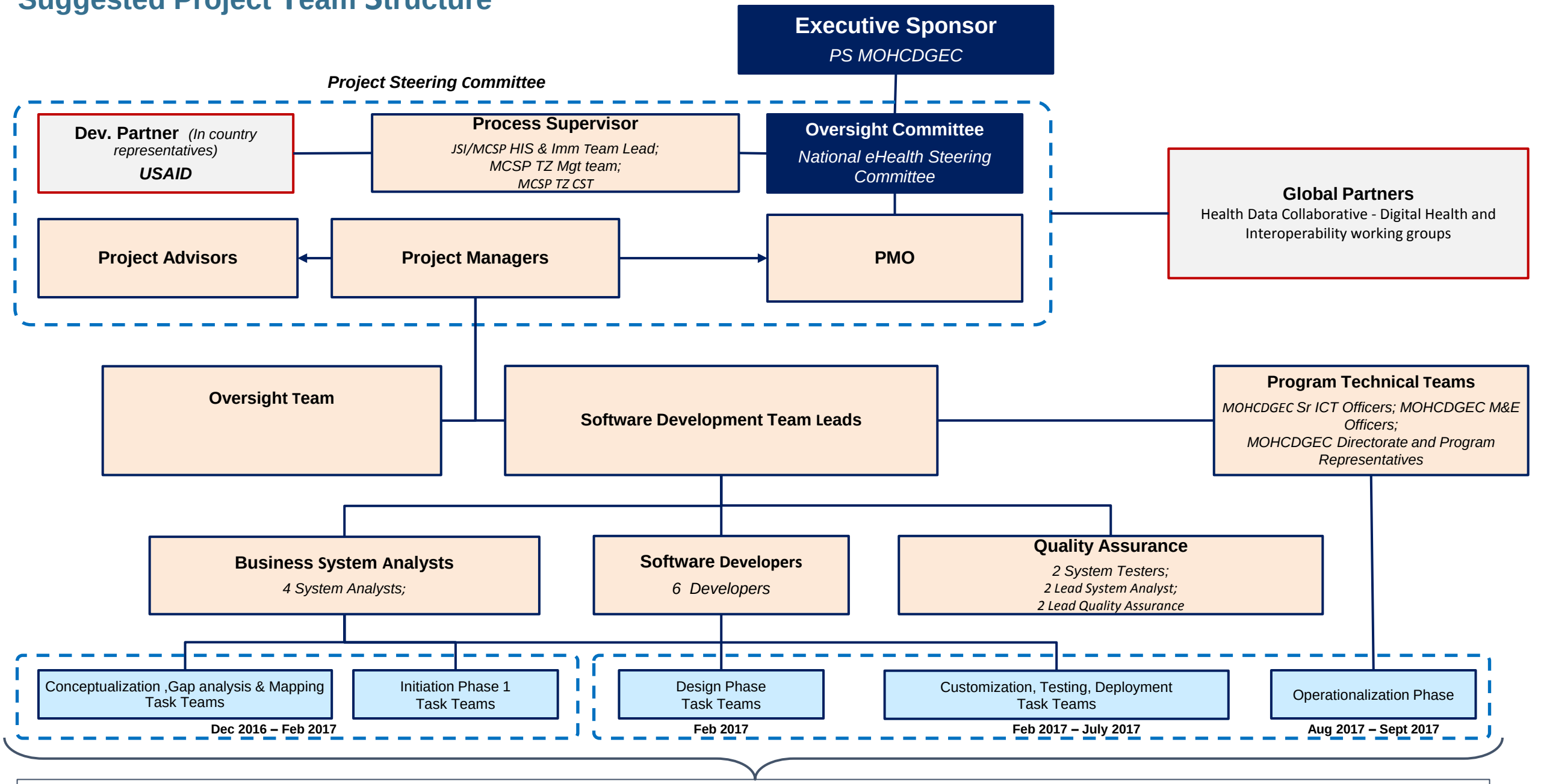
Other Institutions/ sectors Applications

- Plan Rep
- LGA Epicor
- NHIF & CHF
- NIDA
- RITA CRVS

HIE Project Organizational Structure



Suggested Project Team Structure

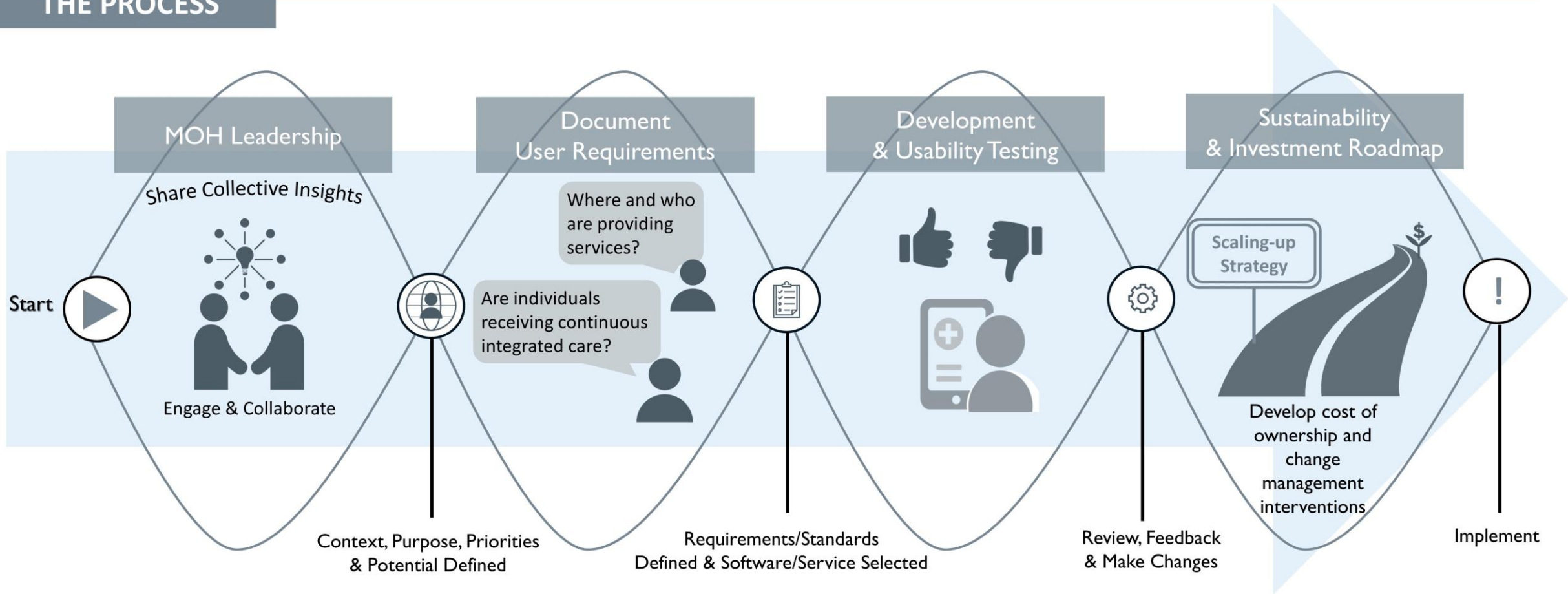


Task teams are organized cross-functionally so that those who needs to work together are on the same team during each phase of the project.

Process for Prioritizing use cases and requirements

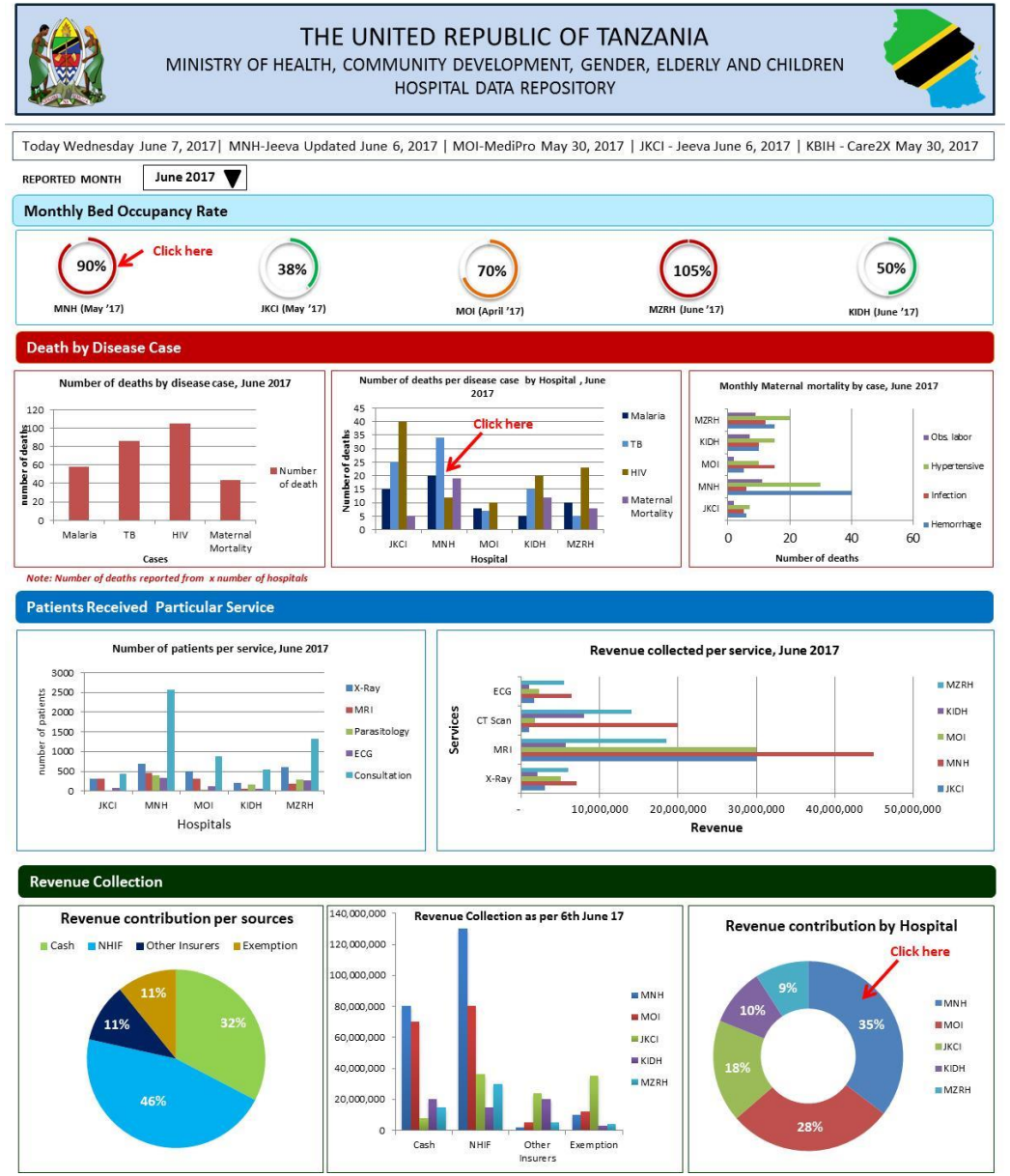
- Management identifies a need (possibilities to make data more easily accessible)
- Engage the decision makers in a participatory process to decide the priority use cases
  - Ministry Management
  - NeHSC/PMO
- Buy in from DPs & IPs
- Technical meetings:
  - Requirements gathering process
  - Digital solution selection process
- Stakeholders meeting to review and agree:
  - Requirements and the proposed digital solution
- Approvals and project initiation:
  - PMO/NeHSC
  - Ministry Management

THE PROCESS


MOH Leadership
Share Collective Insights
Engage & Collaborate
Start
Context, Purpose, Priorities & Potential Defined
Document User Requirements
Where and who are providing services?
Are individuals receiving continuous integrated care?
Requirements/Standards Defined & Software/Service Selected
Development & Usability Testing
Review, Feedback & Make Changes
Sustainability & Investment Roadmap
Scaling-up Strategy
Develop cost of ownership and change management interventions
Implement

Future uses of system

- Data sharing across systems
- e-Registry: Integrated and longitudinal care
- e-Referral from community to facility and lower to higher facility
- Improved decision-making at time of care
- Client feedback based on care received



THANK YOU!