



MINISTRY OF HEALTH



UNIVERSITY OF NAIROBI

# African Countries Experience with Digital Health Strategy and Governance

Development and Implementation of Digital Health Policies to Accelerate Attainment of UHC and SDGs: A Case of Kenya eHealth Policy

**2018 Global Digital Health Forum**  
**10<sup>th</sup> December, 2018**  
**FHI360 Academy Hall, Washington DC - USA**

Dr. Stephen Mburu (PhD), UoN  
Mr. Onesmus Kamau, MoH-Kenya



## Problem Domain



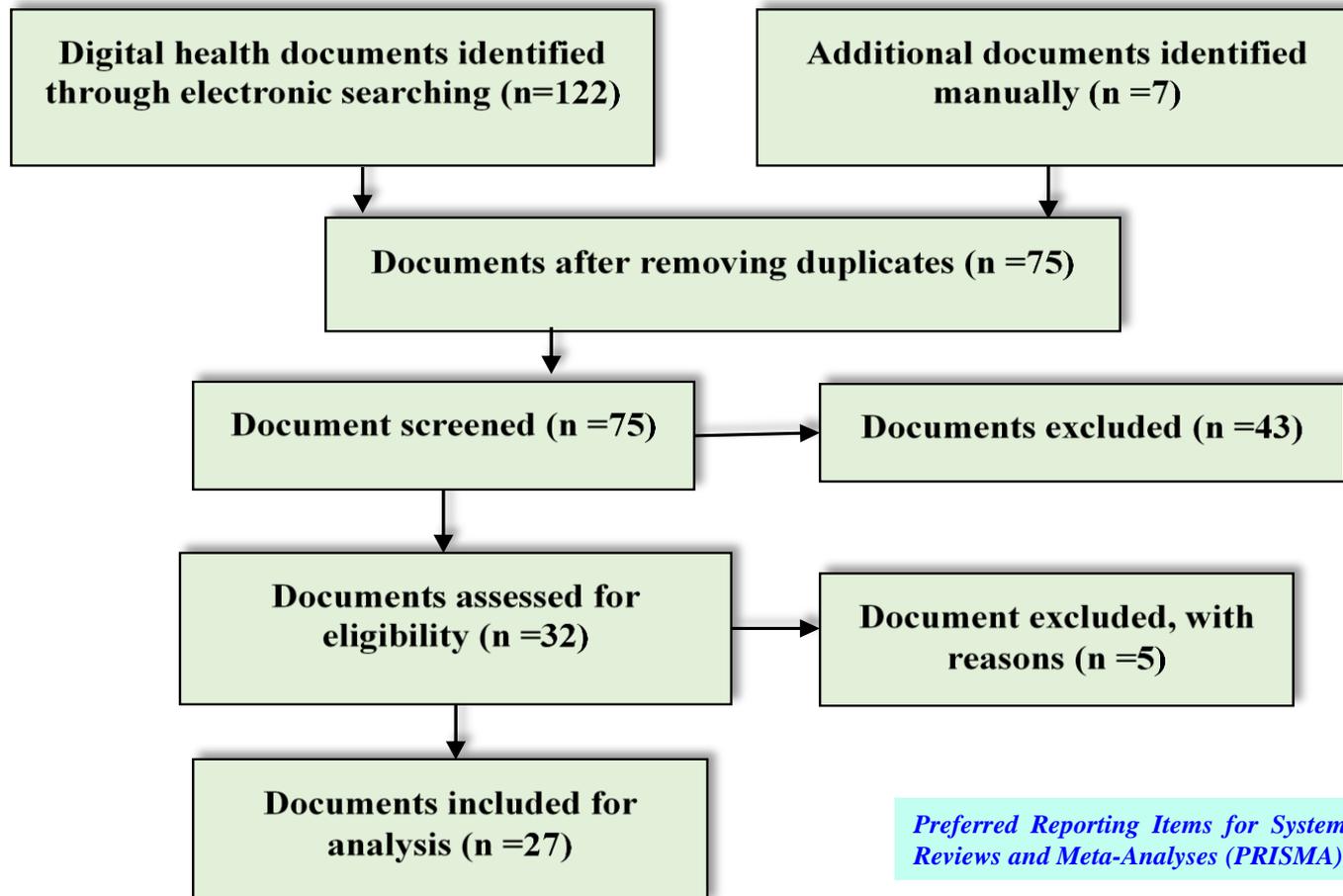
- Most countries are adopting digital health solutions that present opportunity for patient-centred healthcare service delivery
- This is why most countries are investing in ICT infrastructure as the core requirement for the implementation of digital health.
- Due to lack of digital health policies, deployment of eHealth and mHealth interventions in Africa are fragmented with no tangible benefits to subjects of care



# PRISMA - Docs Review



- The search strategy used to net digital policies and strategy related documents was **PRISMA**.



*Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)*





# Digital Health Policy Framework



In this study, we derived a framework for development and implementation of digital health policies; comprising of three components:

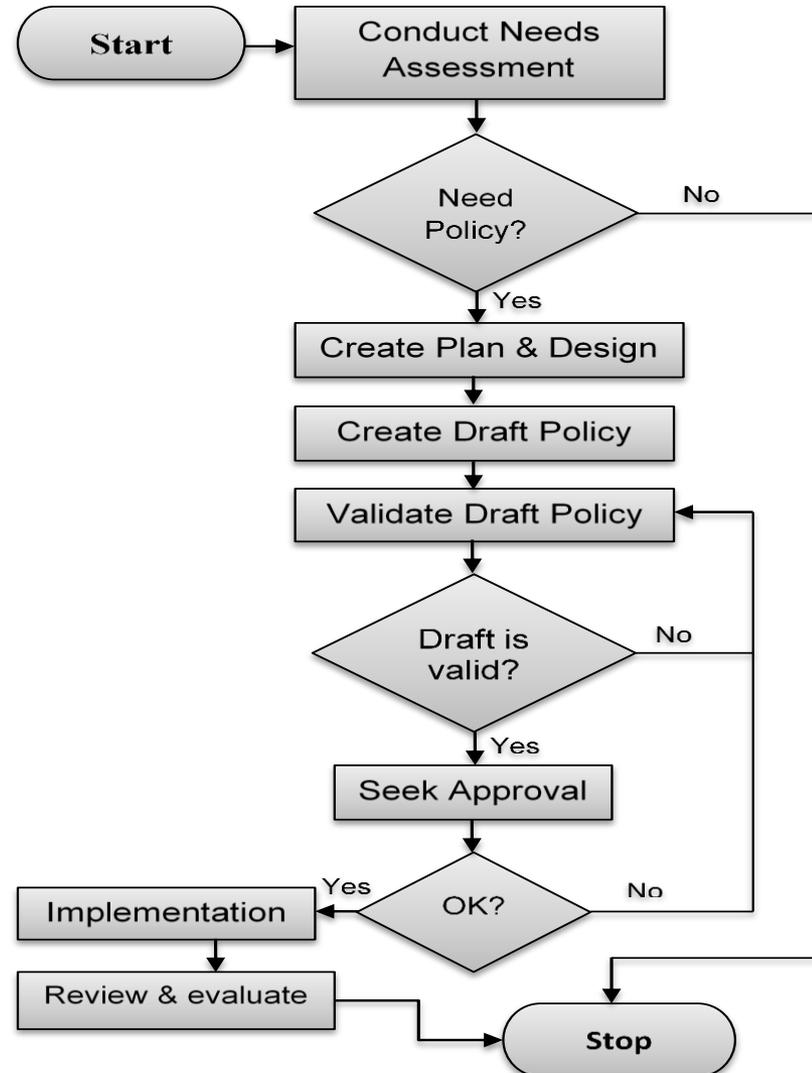
1. **Governance:** Oversight and administrative support that make it possible to develop and implement a digital health policy
2. **Guiding principles:** philosophical ideologies written to support vision, mission, values, priorities, legislations and governing the country's health system
3. **Predictable development process:** The development and implementation should follow a structured process



# Framework Foundations



- Needs assessment:** Justify using research findings, expectations, requirements, innovations initiatives
- Plan and design:** Plan, identify guiding principles, and policy objectives
- Create Draft Policy :** Create policy layout and create content provided by subject matter experts
- Validate Draft:** Subject the draft to stakeholders and experts for review
- Approval:** Submit validated draft to senior Ministry officials for approval
- Implementation:** Launch and disseminate the new policy for implementation
- Review:** Provide clear regulations, and procedures for policy review





# Recommendations



To build an accurate roadmap, governments need to focus on the following:

- Provide clear policy objectives that addresses the needs and expectations of patients and health providers
- Identify technology champions among government staff, healthcare providers and ICT staff who can take ownership of the initiative
- Conduct needs assessment to determine factors that will determine successful development and implementation of digital health policy
- Collaborate with stakeholders to formulate strategies for successful development, and monitoring of policy implementation



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**THANK YOU**  
***Asante Sana***



# ***Key Issues in mHealth Implementation***

***Presented At the Global Digital Health  
Forum; Washington DC 10<sup>th</sup> December 2018***

***By  
Ministry of Health and Population  
MALAWI***

# INTRODUCTION

- In 2017, Malawi conducted an assessment of mHealth Applications being implemented in the Country;
- A questionnaire was sent to organizations and institutions to provide information;
- Assessment was in two steps:
  - Inventory of all mHealth applications. Now available in WHO's Digital Health Atlas;
  - Deep Dive analysis where 5 selected apps were examined in detail;
  - Apps for deep dive were identified on pre-defined criteria.
- This presentation is only highlighting key issues that can drive policy around mHealth Applications.

# KEY ISSUE 1: Need to Focus New Investments on Existing mHealth Investments



- Study found that average lifespan is five years;
- Coincidentally, donor grants and funds average around 5 years;
- mHealth Projects die as funding winds up.

Average project  
lifespan

# KEY ISSUE 2: Need to Increase Efficiency in mHealth Investments

5

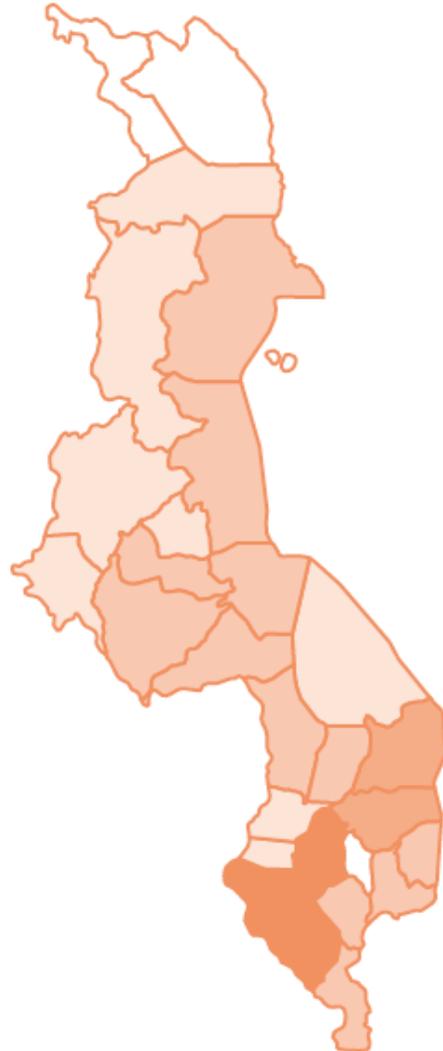
MINIMUM PROJECTS  
PER DISTRICT

8

AVERAGE NUMBER OF  
PROJECTS PER DISTRICT

13

MOST PROJECTS PER  
DISTRICT (BLANTYRE)



- With an average of 8 investments per district and 13 in one district, there is need to address inefficiency;
- Coordination challenges, maintenance challenges, sustainability challenges.

# KEY ISSUE 3: Need to Develop Comprehensive mHealth Applications



Maternal and  
Reproductive  
Health



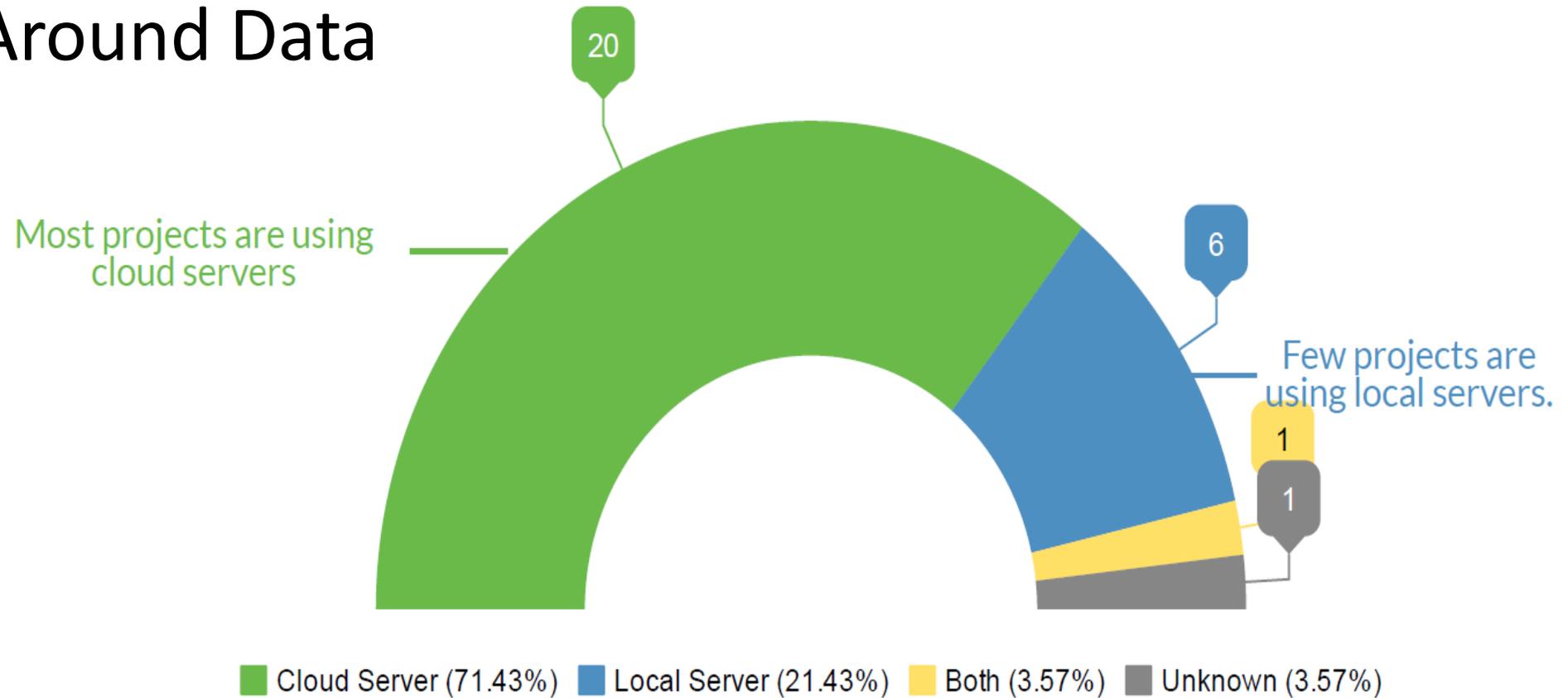
Infant and Child  
Health



Community  
Health

- Assessment found that the majority of mHealth projects in Malawi are currently working in the areas of maternal and reproductive health; infant and child health, and community health;
- There is need for mHealth Applications to shift from narrow health area focus to comprehensive applications.

# KEY ISSUE 4: Need to Implement Comprehensive Policies Around Data



- Access to data post project grant;
- Security of patient level data;
- Ownership of data vis a vis access to and possession of data.

# KEY ISSUE 5: Need to Provide Standards for mHealth Applications

- Study found the following common features in mHealth Applications:
  - Hardware (devices);
  - Software;
    - configuration/customization
    - Maintenance/ updates
  - Hosting/Servers;
  - Internet;
  - Power;
  - Rollout and implementation;
  - Training and technical support.
- There is need to provide standards at national level on hardware specifications; security provisions; power specifications for mHealth applications and devices.

# CONCLUSION

- The mHealth Assessment formed part of the Situation Analysis for the development of the National eHealth Strategy;
- These key issues have been included in the National eHealth Strategy which is currently under development.



Ethiopia's Experience in implementing a  
**eHealth Architecture (eHA)**

Global Digital Health Forum

December 2018

# *Health Sector Transformation Plan (HSTP)*



## **HSTP Transformation Agendas**

1

***Transformation in  
equity and quality  
of health care***

2

***Woreda  
Transformation***

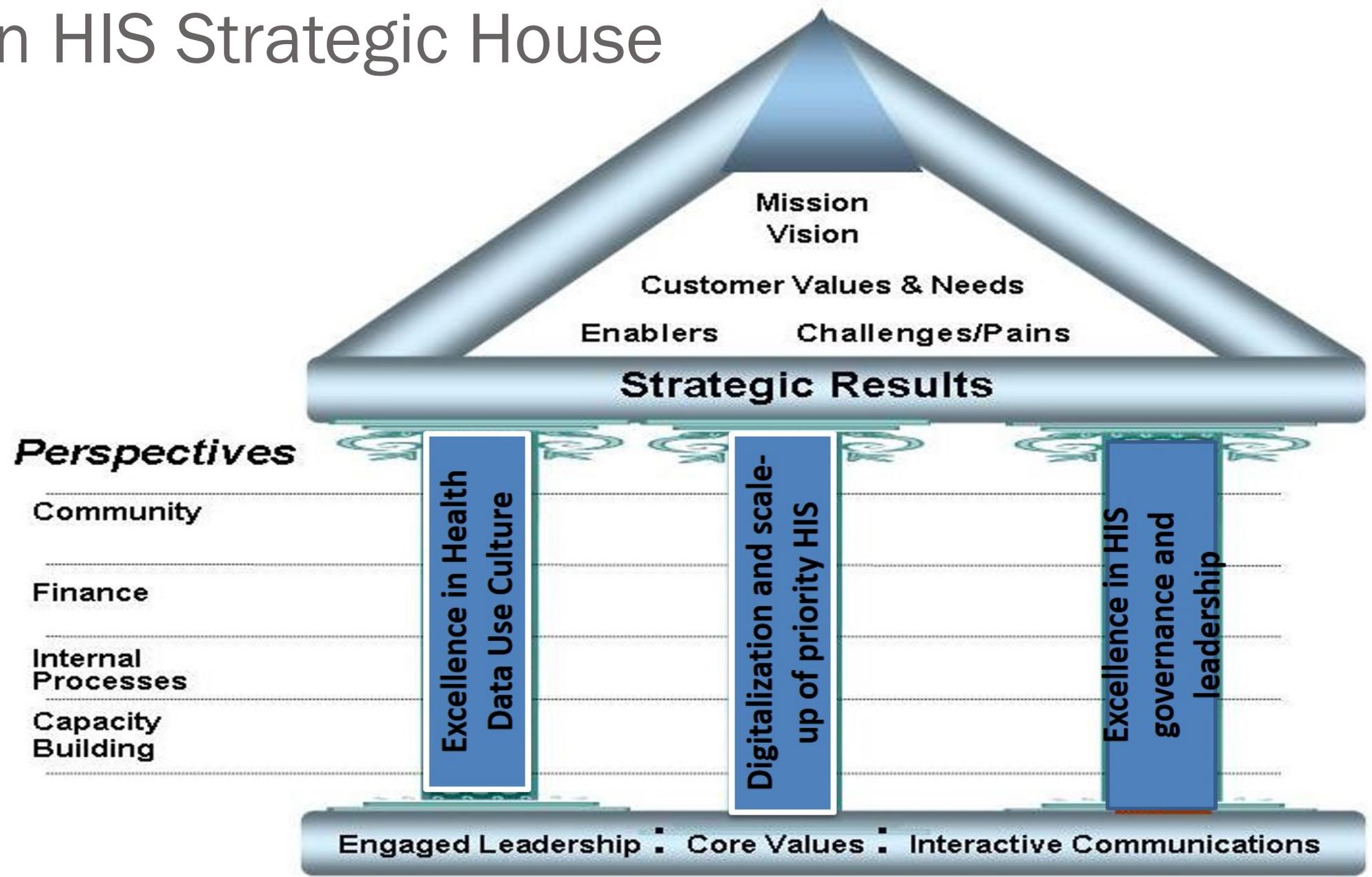
3

***Information  
Revolution***

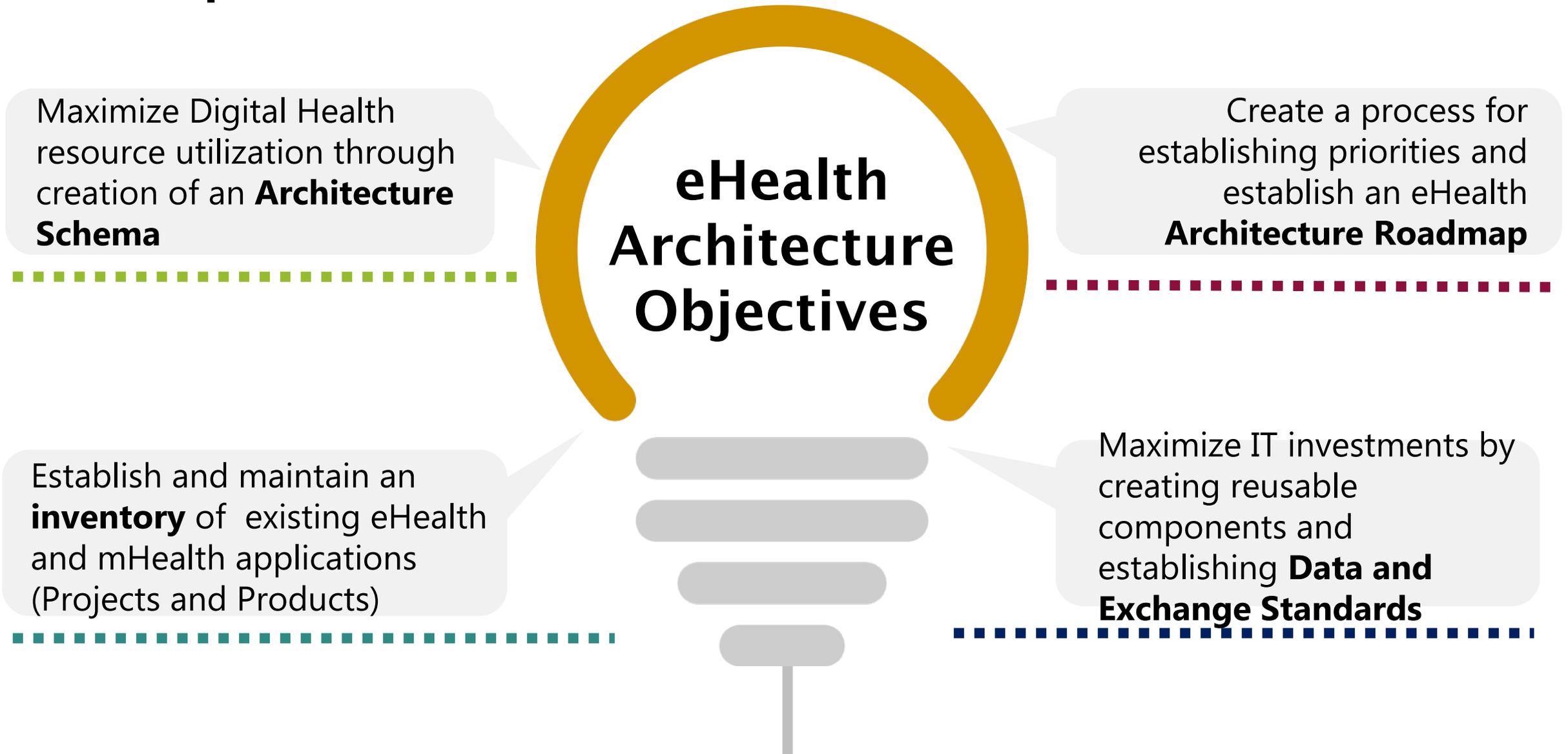
4

***Compassionate  
Respectful and  
Caring Health  
Workforce***

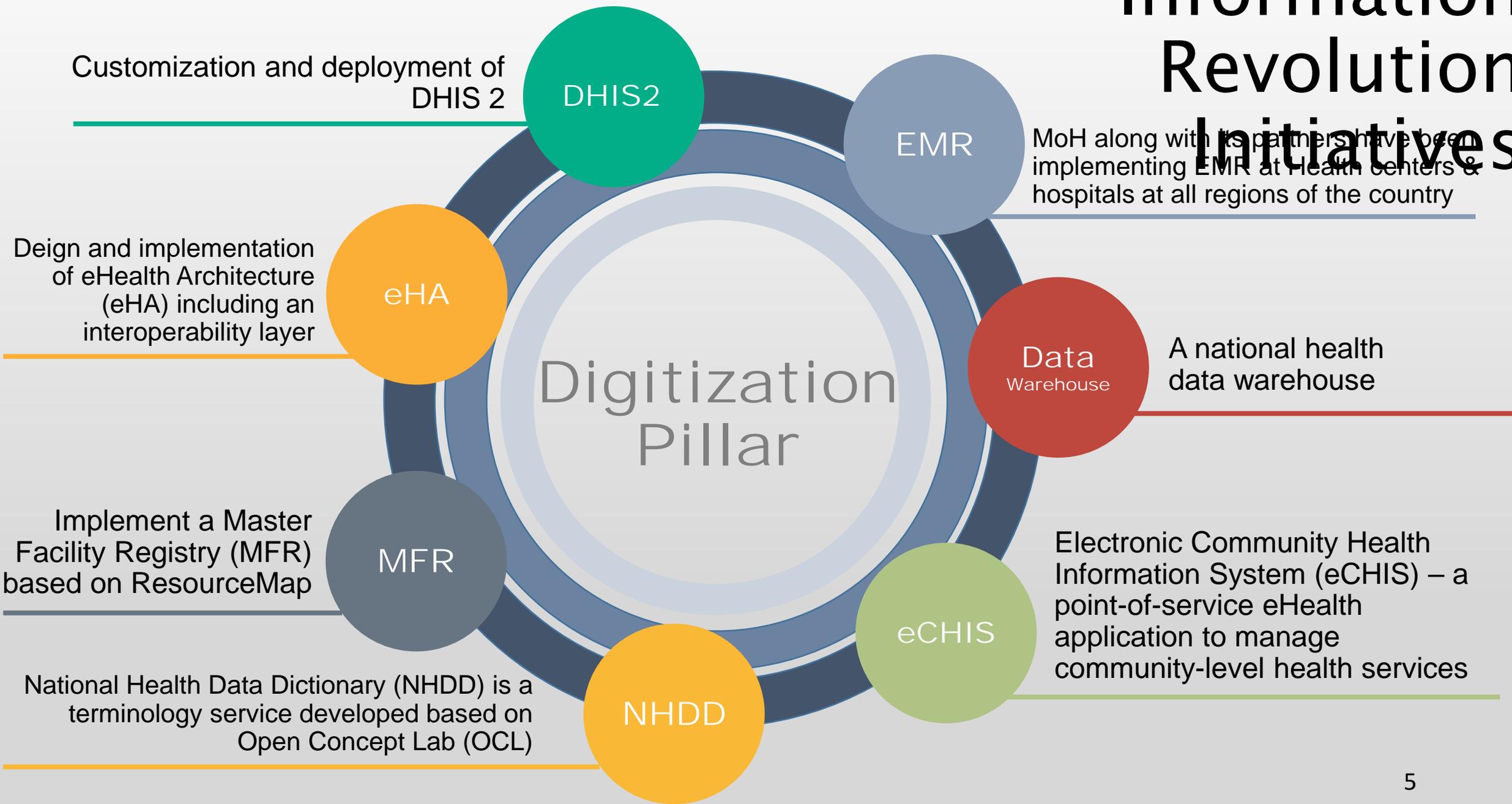
# Ethiopian HIS Strategic House



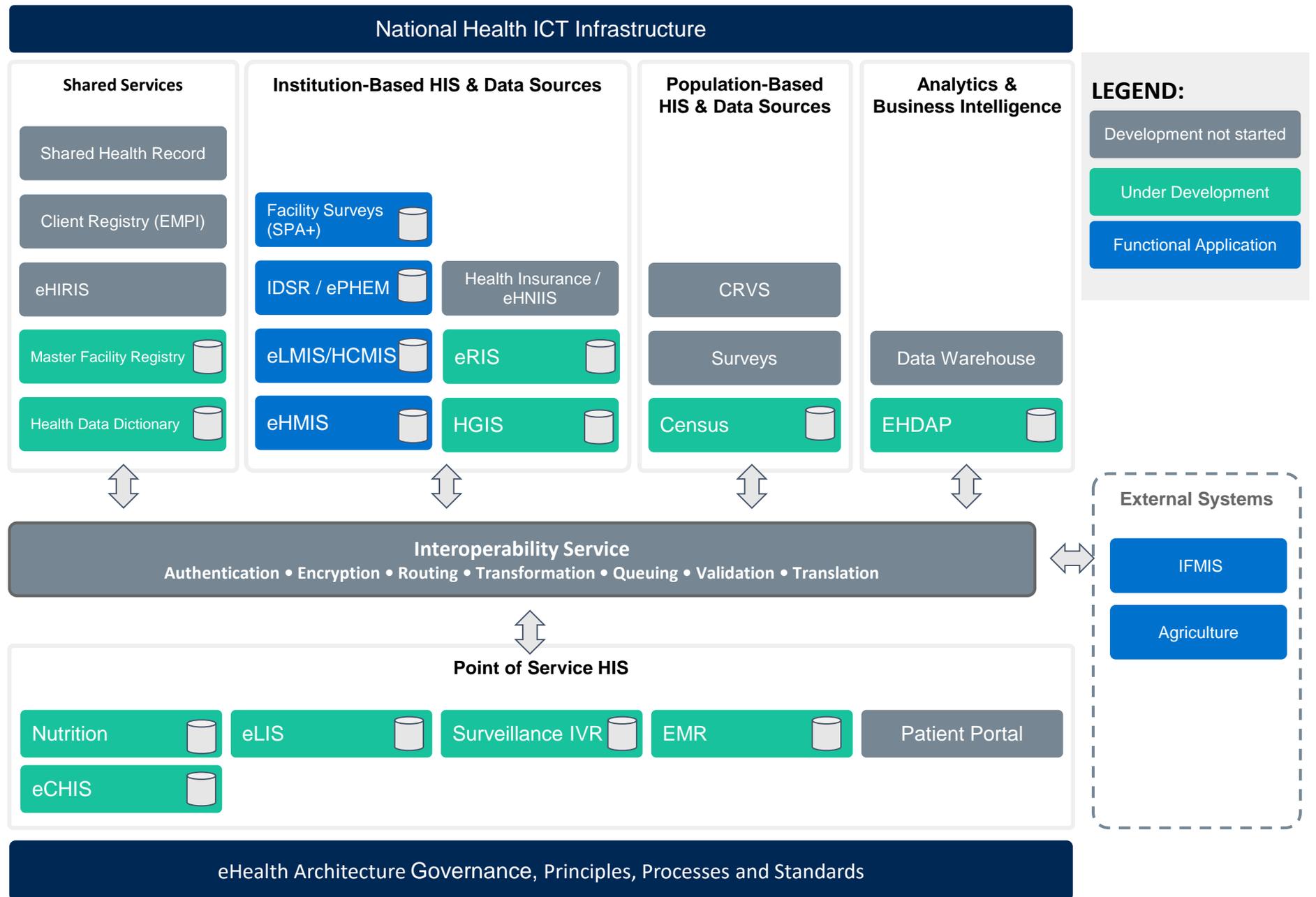
# Ethiopia eHealth Architecture (eHA)



# Information Revolution Initiatives



# Ethiopia eHealth Architecture: Future State

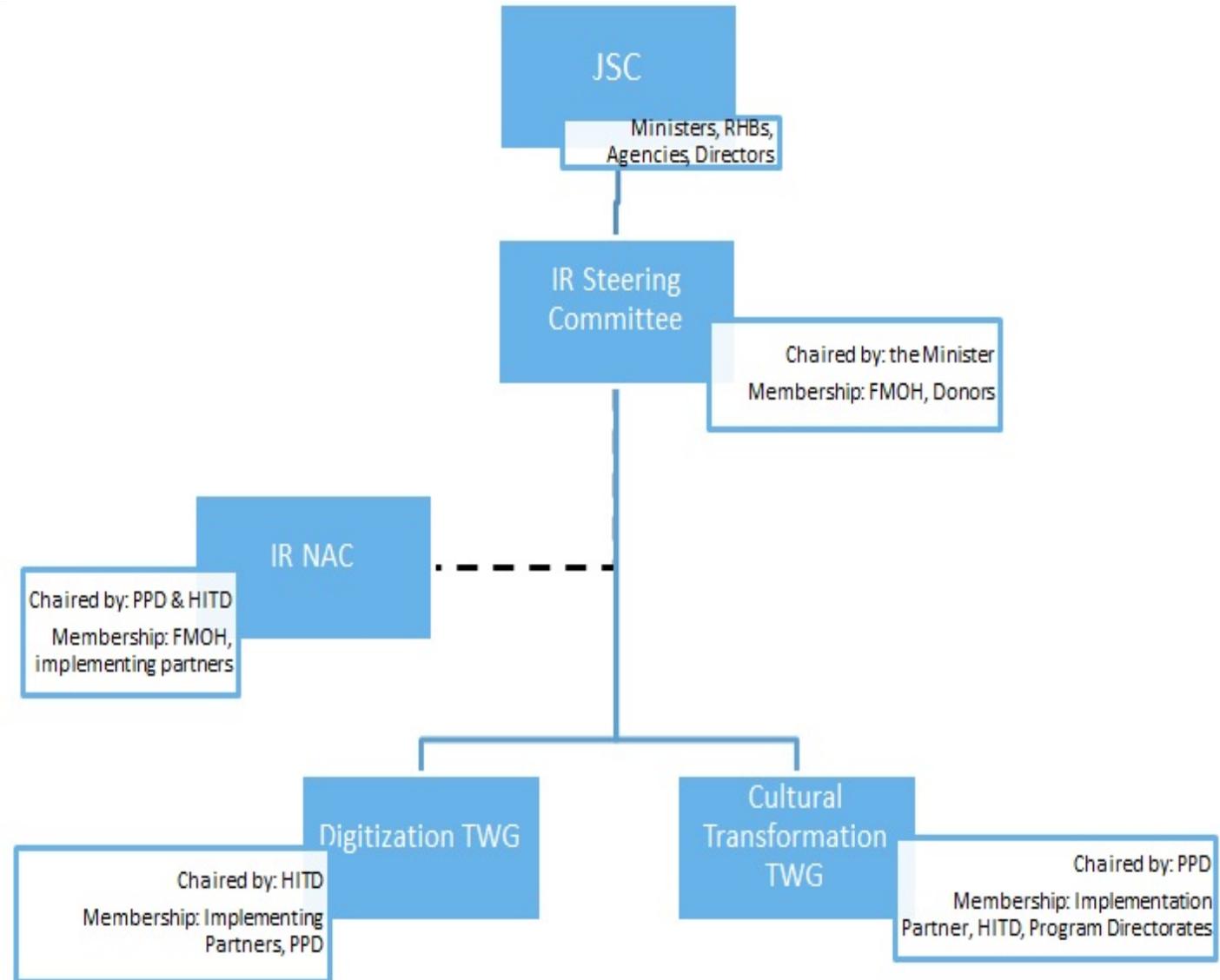


# eHA Governance

## Governance structure and accountability

eHA governance is derived from the larger HIS governance framework

eHA Technical Working Group – in charge of Development and Implementation of eHA



# eHA Roadmap Plan

## (2017-December 2018)

### Governance & Guidelines

Develop establishing key eHealth Architecture Governance and Guidelines

---

1

### Scenarios

Identify and prioritize scenarios for data sharing in support of the Ethiopian DUP data use priorities

---

3

### Pilot-test

Pilot interoperability service (layer)

---

5

### Shared Services

Identification and Implementation of Shared Services consistent with eHealth architecture

---

2

### Interoperability Layer Evaluation

Identify requirements and evaluate interoperability layer software

---

4

### Instantiation

Instantiate the interoperability layer

---

6

# eHA Roadmap Plan

completed through step 7; step 8, 9 and 10 currently in process

## App Inventory

Create inventory of existing eHealth and mHealth applications

7

## eHA Roadmap

Create detailed eHealth Architecture (eHA) roadmap

9

## Publication

Formalize publication and dissemination of Ethiopian eHealth Architecture

11

## Interoperability Standards

Identify and approve core interoperability standards

8

## Capacity Building

Development of eHA processes, capability assessments and training documentation

10

## Review

Review and update eHealth Architecture

12

**THANK YOU!**



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# **eHealth Strategy Implementation in Tanzania: Successes, Challenges and Opportunities**

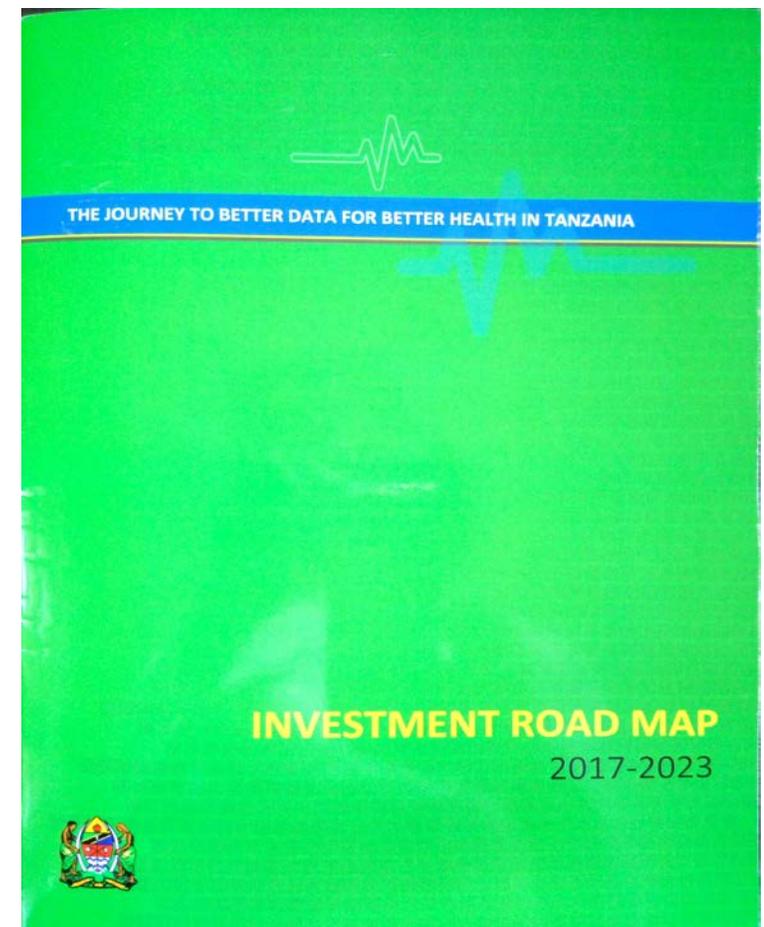
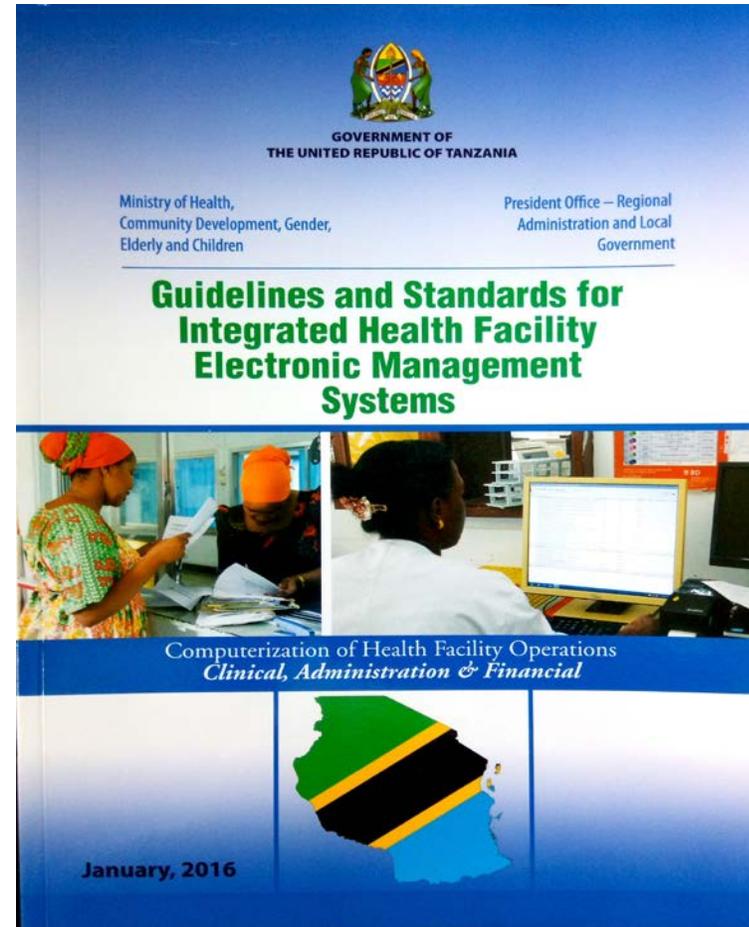
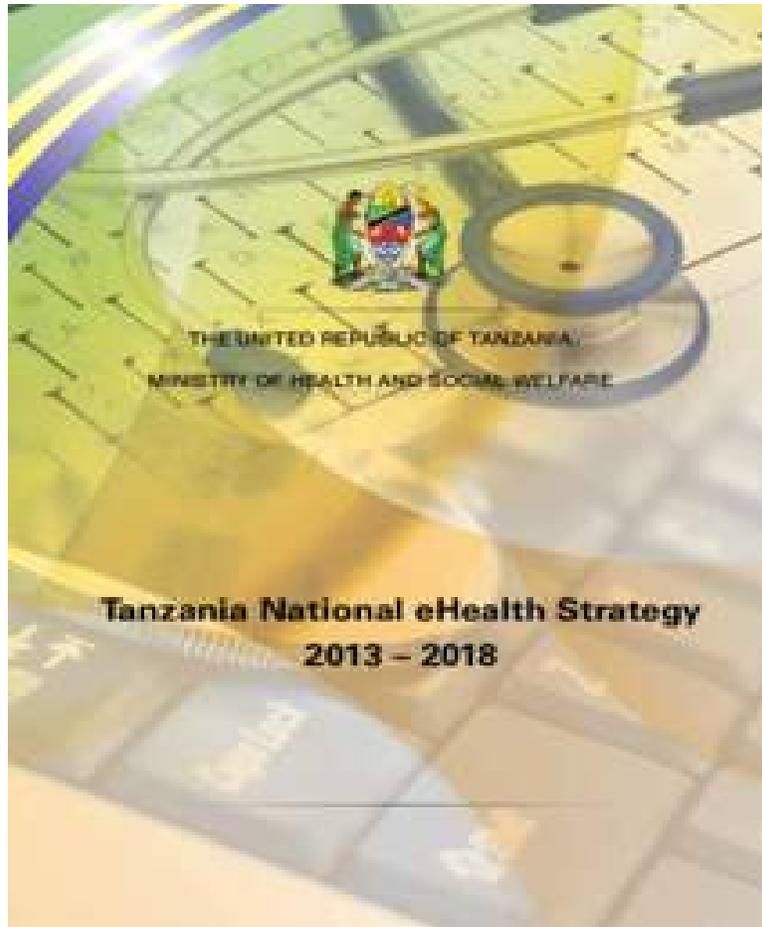
**GDHF2018**

**10 -13 DEC 2018**

**Dr. Otilia Gowelle – Director of Human Resource Development  
and Chair eHealth Governance Unit**

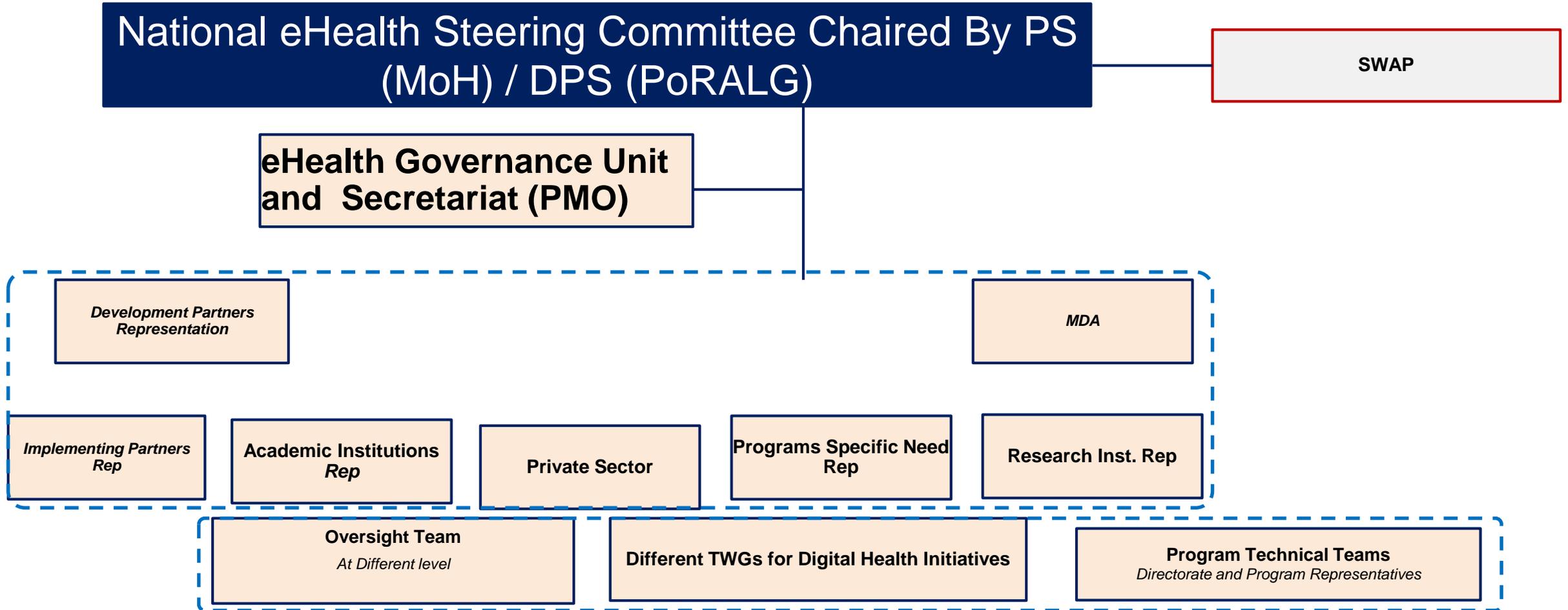
# Our Journey

## Tanzania Digital Health Strategies



# Our Journey

## Established Governance and Coordination



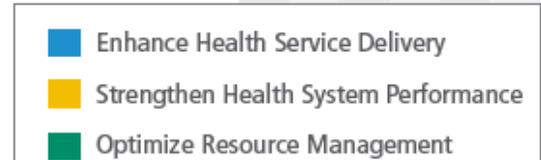
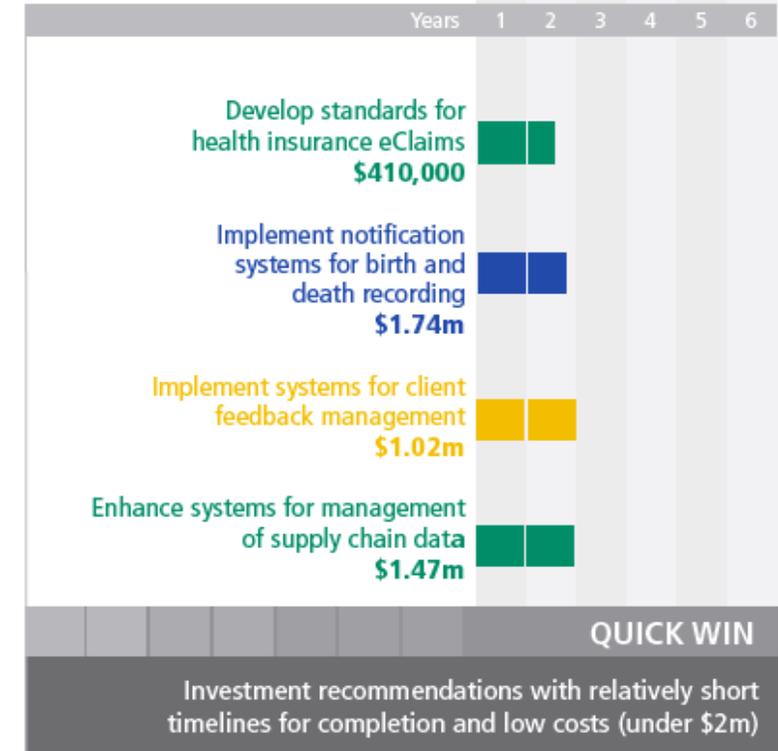
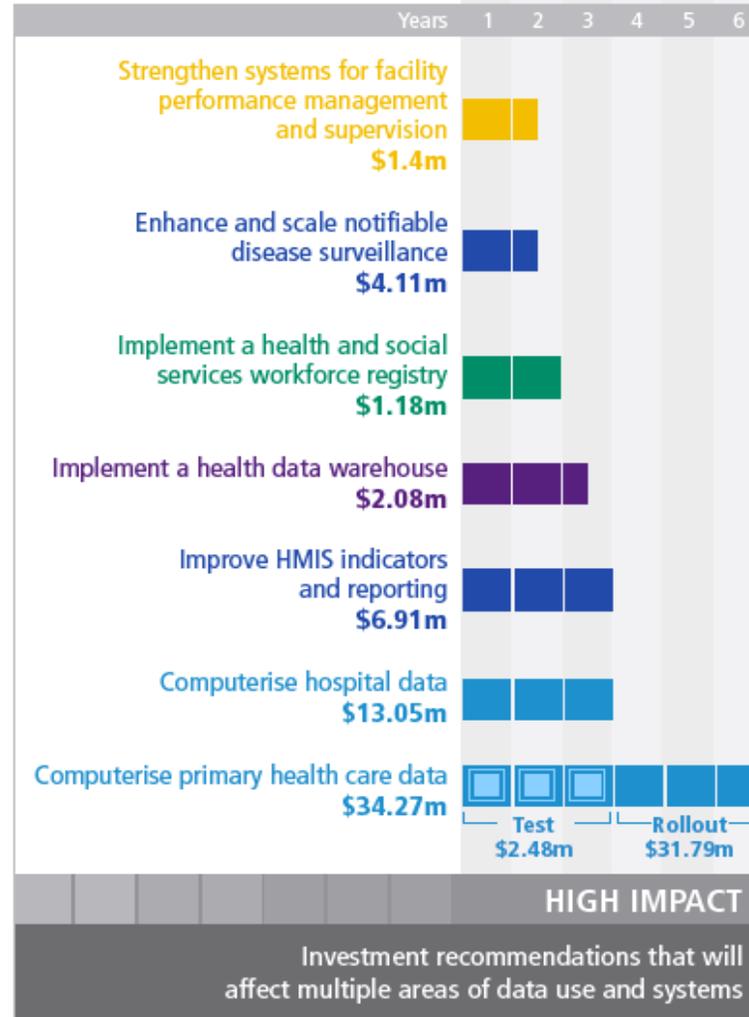
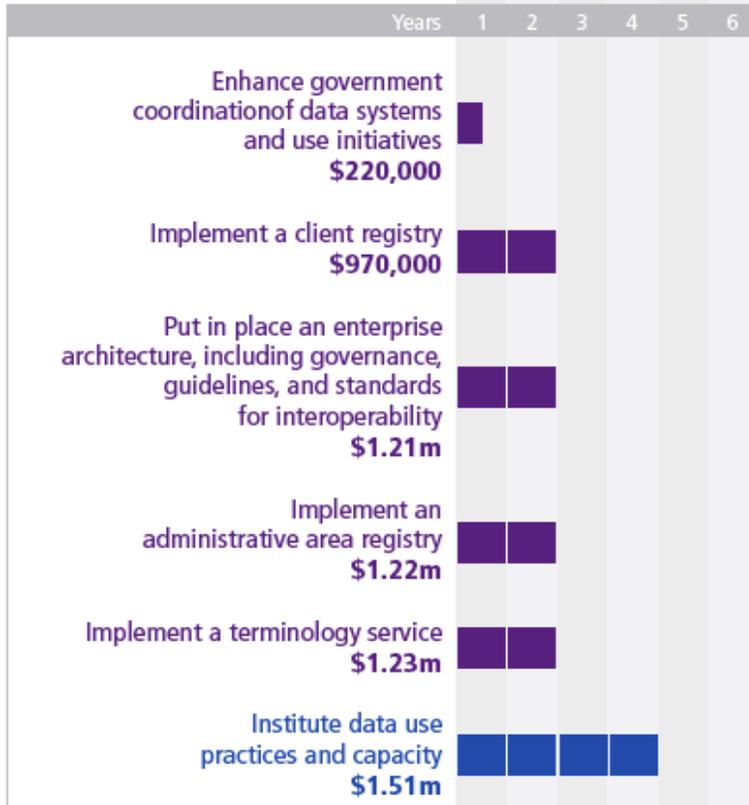
*“Good Will from Political Leaders at all Levels including President himself”*

# Our Journey

## Develop Costed Tanzania Digital Health Investment Roadmap

### ROAD MAP: THE JOURNEY

With these priority investments, Tanzania will be able to effectively use data to improve health.

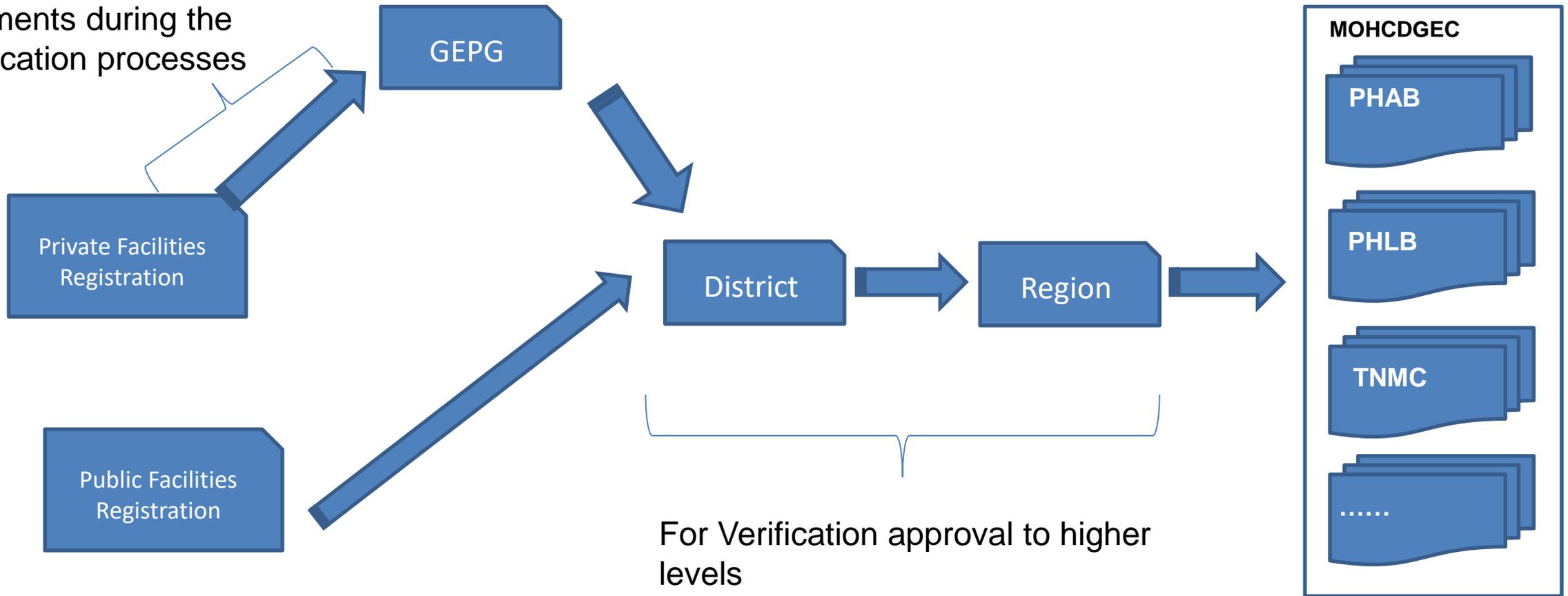


# Implementation Status

- More than 1,400 Health Facilities already implementing EMR & ERP at different stages (Fully computerized, partial and ongoing)
- Health Facility Registry, DHIS2 (as data warehouse), HRHIS/TIIS, eLIS, eLMIS, VIMS, TIMR all web based centralized at National Level
- Health Education:
  - Quality of Healthcare received by Citizen through \*152\*05#
  - Wazazi nipendeni SMS to 15001 code or \*152\*05# Pregnancy mother Registration and education (More than 7 Million registered)
- eIDSR 100% reporting from HF using mobile across the country
- Centralize HRHIS across the Country, TIIS across the country managing Students and Institution resources

# On line HF Registration/Renew License

Payments during the application processes



# Benefits Shown

- The use of eHealth has shown positive impact within health sector. E.g.
  - At the National Hospital revenue collection increased by 400%
  - At one of the Zonal Hospital (Mbeya) revenue increased by 300%
  - Some Regional Referral Hospital revenue increased by 150%
  - Record keeping at the National Hospital has improved from 70 personal files lost per day, to 15 personal files lost per week. However during computerization period physical files lost, but the information is still available. Appointment cancellation were 150/day now its down to a day. Average waiting time to get appointment was 7 weeks, now is 1.4 weeks
  - Today No Record Loss, Appointments are made by the Doctors right away.
  - Improved medication

# Lesson Learnt

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- Government Leadership is the key
- Involvement of Health workers at all levels
- Involvement of DP, IP and Researchers
- Provision of dialog platform to create a good plan that reflect the reality
- Need to have championship from the highest level of the Government
- Focus on the Health outcome and not Technology

# Lesson Learnt

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- Identify and build Foundation aspects of the quick wins
- Having a plan is one thing and alignment of the partners is a different issue (Need Government to take lead with clear and focused plan)
- Human resource need to be capacitated and motivated
- Still need ICT expertise at Health Facility levels
- Computing Infrastructure (Computer and gadgets) is the most limiting factor for quick scaling.

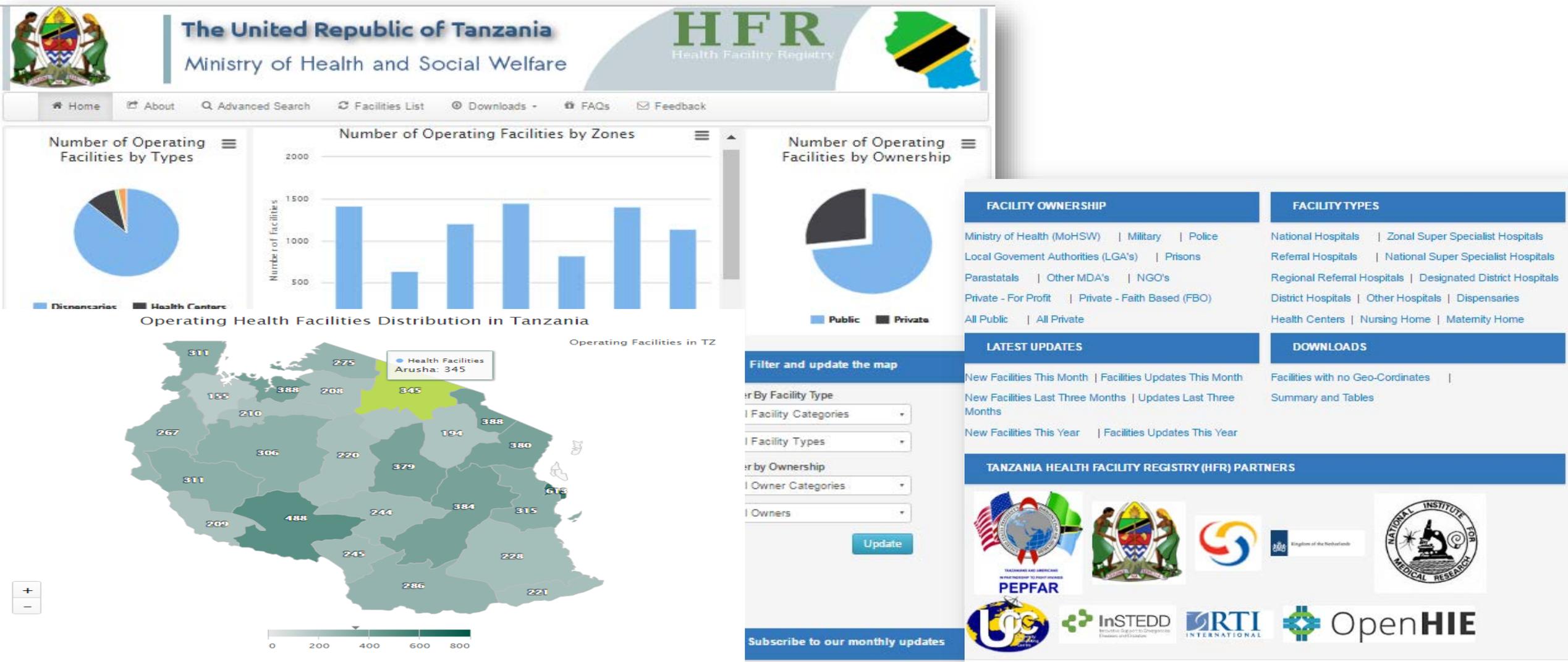
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**ASANTENI SANA KWA  
KUSIKILIZA!**

**THANK YOU FOR  
LISTENING!**

# Benefits Shown

## Centralized access of HF with Dashboard



# Centralize HR for Health across the country (Private and Public)

Welcome! Please use navigation on your left,

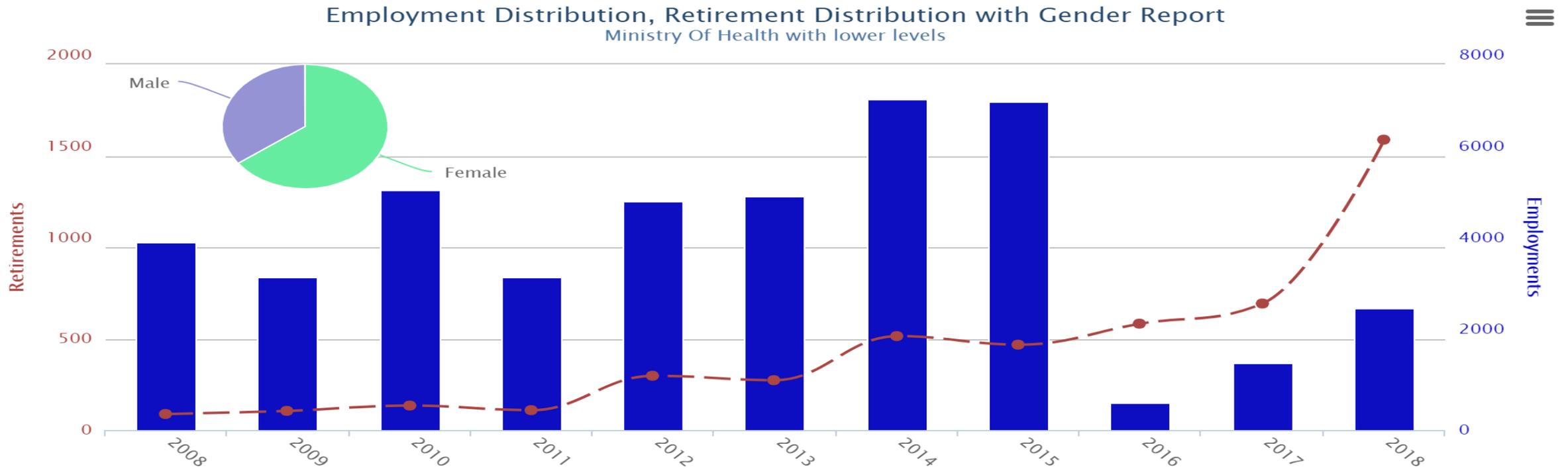
You have 1008 unread message

Combination Report

Retirement Distribution

Age Distribution

## The Employment Distribution Chart



# Benefits Shown

## Easier access of real time data through single Dashboard



THE UNITED REPUBLIC OF TANZANIA  
MINISTRY OF HEALTH, COMMUNITY DEVELOPMENT, GENDER, ELDERLY AND CHILDREN  
HOSPITAL DATA REPOSITORY



Today Wednesday June 7, 2017 | MNH-Jeeva Updated June 6, 2017 | MOI-MediPro May 30, 2017 | JKCI - Jeeva June 6, 2017 | KBIH - Care2X May 30, 2017

REPORTED MONTH **June 2017**

### Monthly Bed Occupancy Rate

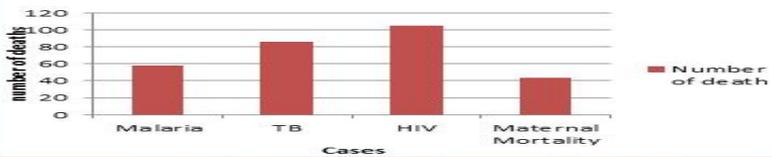


[Click here](#)



### Death by Disease Case

Number of deaths by disease case, June 2017



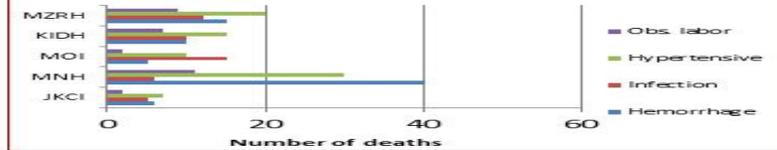
Note: Number of deaths reported from x number of hospitals

Number of deaths per disease case by Hospital, June 2017



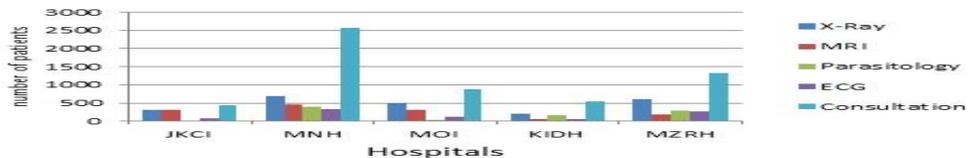
[Click here](#)

Monthly Maternal mortality by case, June 2017



### Patients Received Particular Service

Number of patients per service, June 2017

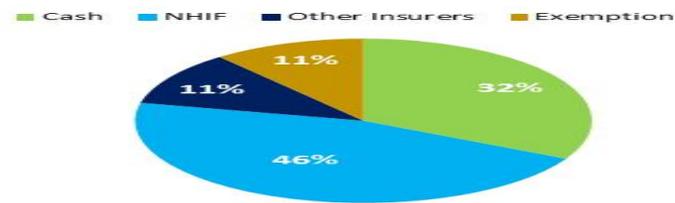


Revenue collected per service, June 2017

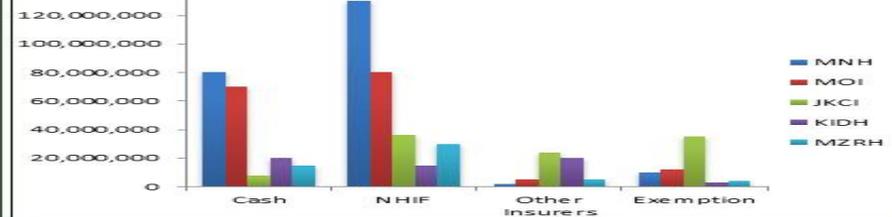


### Revenue Collection

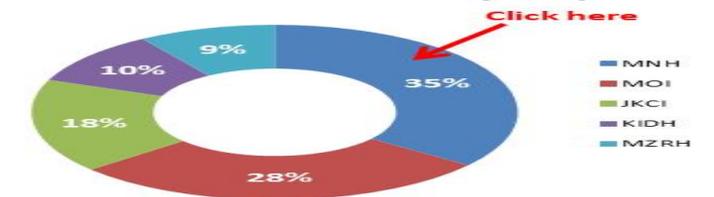
Revenue contribution per sources



Revenue Collection as per 6th June 17



Revenue contribution by Hospital



[Click here](#)

# Improved medication (EMR Dashboard)

The screenshot displays an EMR dashboard for a patient named 'Admitted Test' (ID: 111531-0-47), a 30-year-old male. The dashboard is organized into several sections:

- Header:** Includes navigation icons (people, search, bed), tabs for 'General', 'HIV', and 'TB', a '+', a 'Print' button, and visit information: 'OPD,01 Jun 17' and 'Consultation'.
- Patient Info:** 'Admitted Test (111531-0-47) | Male | 30 Years 2 months 4 days'.
- Navigation:** 'Home Dashboard | Patient Visit Page | Patient ADT Page | Program Management Page | Visit Attributes | Registration'.
- Vital Information:** A table showing vital signs for '04 Sep 17 5:00 pm':

Temperature (36 - 37)	123
BMI	27.68
BMI	27.68
BMI STATUS	Overweight
BMI STATUS	Overweight
Height	170
Weight	80
- Lab Orders Display Control:** A table showing lab orders:

TLC - Total Lymphocyte count	Super Man	28 Aug 17 9:55 am
No observations captured for this order.		
Basophil (Blood)	Super Man	25 Aug 17 4:18 pm
Agranulocyte Count	Super Man	25 Aug 17 4:18 pm
Motility (Semen)	Super Man	22 Aug 17 9:57 am
Calcium	Super Man	18 Aug 17 12:19 pm
- Visits:** A table showing recent visits:

15 Aug 17 ★	IPD
15 Aug 17 - 15 Aug 17	OPD
14 Aug 17 - 15 Aug 17	IPD
14 Aug 17 - 14 Aug 17	OPD
- Diagnosis:** A table showing the current diagnosis:

Malaria mRDT positive	CONFIRMED PRIMARY	15 Aug 17
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- Lab Results:** A section with a link to 'Investigation Chart'.

Activate Windows  
Go to Settings to activate Win

# Benefits Shown

## improved Client Feedback dashboard

