Unique Patient Identification in Zimbabwe

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Introduction

The Zimbabwe Electronic Health Care System (Impilo E.H.R) consists of two types of facilities.

1. Online Facilities:
   - They have connection to central repository and can transmit data in real time.

2. Offline Facilities:
   - They do not have direct connection to central repository and data is manually uploaded to the central repository

Zimbabwean Health system does not enforce the use of national identifiers like ID Number, Passport Number to be used as mandatory identifiers of patients in Impilo E.H.R

- Patient identification is done at both facility level and central level
- A person id (System generated) is used to identify patients in E.H.R
- MoH currently pursuing legislation on the use of National ID or Patient ID
Zimbabwe HIE Technology Stack

Point of Service

Interoperability & Data Pipelines

Infrastructure, Maintenance, & Security

Registries and Repositories

An **HIE in a Box** with a context-specific collection of components that fit required roles as described in the OpenHIE architecture specifications.

**Principles:**
- Horizontally Scalable
- Configurable and Extensible
- Standards-based

**Analytics and Reporting**
Use Cases

Patient Level

Continuity of care:

• To ensure that all relevant information about a patient's health history, diagnoses, allergies, and treatments is readily available to any healthcare professional involved in their care.

Service Delivery Level

Public health management:

• Accurate identification helps public health agencies track the spread of diseases, monitor outbreaks, and implement appropriate interventions to protect communities' health.
Current Implementation at Facility

Patient walks into health facility

Systems checks for patient in local Impilo E.M.R

Patient Found

No

Systems checks for patient in central Impilo E.M.R

Yes

Open patient record

Yes

Patient Found

No

Register new patient
Current Implementation at Facility

Patient Demographics
  e.g.
  First Name
  D.O.B
  Sex
  Nationality

Adaptive Machine learning based Patient Identification Model

Matching Records with % Similarity
Current Implementation at Central Level

Online Facilities

Real time data transmission

Central Repository

Deduplication Engine

Central Database

Client registry

Offline Facilities

Data manually uploaded
Challenges with Patient identification

• No unique identifier for patients
• Some Zimbabwean regions have very similar names which makes it difficult to deduplicate.
• Most of the facilities are offline hence making it impossible to deduplicate in real-time at the central level.
• Unlike Malawi or Zambia, the Zimbabwe Government is yet to implement a VPN or government-wide area network connecting facilities
  • There is one used by a legacy system (connected to 350 sites) currently being resuscitated
• A lot of nomadic patients
Future plan for Patient identification

**Use of biometrics:**

- **Fingerprint reader**
- **Iris Scanner**

### Advantages in Zim Context

**Improved patient identification:** Biometrics can increase accuracy in uniquely identifying patients

**Time savings:** Biometric authentication increase speed of searching for patients.

**Accessibility:** A good use case for unconscious patients, it’s easy to use the fingerprint to identify the patient (for already registered)

**Scalability:** Biometric systems can easily scale up to accommodate large numbers of patients without compromising accuracy or efficiency.

**A prototype has already been developed**

### Disadvantages in Zim Context

**Cost:** Implementing biometric technology can be expensive. The cost of purchasing and maintaining biometric devices, software, and infrastructure can be a significant barrier.

**Infrastructure limitations:** Biometric use will have a limitation on facilities that are offline.
Thank You!