Integrated HIS architecture of interoperable systems: Sierra Leone and West Africa

Johan Saebo
Edem Kossi
Jorn Braa
Overview

- Two levels of integration of HIS in Sierra Leone
  - All aggregate data into a data warehouse
  - An architecture of interoperable softwares
- Information use
- Scaling from Sierra Leone to West Africa
1) Integrating aggregate data sources in Sierra Leone: A central data warehouse (2007-)
Old system:
Fragmentation of information

National:
• Fragmented info
• Difficult access

District:
• Fragmented data management
• Paper-based transcription and transmission
• Not fully disaggregated

Facility:
• Many reports
• Little feedback
• Little use at facility
• No hospital reports
Following HMN Framework for HIS
2) Integration of different data domains in Sierra Leon: An interoperable architecture (2010-)
SDMX-HD – Statistical Data and Metadata Exchange for the Health Domain

**OpenMRS**: Medical records

**DHIS2**: Data warehouse

**SDMX-HD**: Metadata “order” From DHIS to OpenMRS, e.g.: #deliveries @health centre X for month of May

**DHIS** is calculating: Deliveries per midwife

**iHRIS**: Human Resource records

**SDMX-HD**: Developed and piloted in Sierra Leone

**SDMX-HD**: Metadata “order” From DHIS to iHRIS, e.g.: #midwives @health centre X for month of May
3) Information use: Transparency and accountability

<table>
<thead>
<tr>
<th>Chiefdoms</th>
<th>% Full Immunized 2nd Quarter</th>
<th>% PHU Delivery 2nd Quarter</th>
<th>% 3rd ANC Visit</th>
<th>% 2nd Dose of IPT</th>
<th>% MMRC Submitted</th>
<th>% Exclusive Breastfeeding at Penta3</th>
<th>Average Score</th>
<th>Ranking</th>
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Anecdotal evidence...

Women giving birth in health facilities, Western District, Sierra Leone, 2009

- Percentage of pregnant women giving birth in facilities

- Freetown
- Rural Western Area
4) Scaling from Sierra Leone to West Africa

- West African Health Organization/ Organisation Oest Africaine de Sante (WAHO/OOAS)
- 15 member countries
- Centre of Excellence in Health Informatics, a Champion for HIS strengthening
- Support countries
  - Policies
  - Standards
  - Project-based
- Part of global network
Integrated Health Information Systems
- Collaborating Network of Countries and Institutions

**Health Information Architecture**
Integration, standards, interoperability
Use of information for action
HIS /HMIS /M&E, management

**Free & Open Source Software**– Sharing across the world
Distributed development knowledge & support

**Capacity Building**
Training, Education, Research
Training of health workers
Graduate courses, Masters, PhD

Network of Action in West Africa:
*HIS Centre of excellence WAHO*
Concluding remarks

• A proof of concept exists of sharing data between DHIS2, OpenMRS, and iHRIS
  – An interoperable architecture of open source HIS applications

• This architecture is at the core of the work by WAHO to support member countries to strengthen HIS.

• WAHO is in for the long run