LMIS from the HMIS perspective

Experiences from HISP

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Overview

Health Information Systems Programme (HISP) background
Lessons from 20 years of HMIS development
Our experiences with LMIS
Lessons from HMIS applied to LMIS
Some conclusions
HISP and DHIS

HISP coordinates development of open source DHIS2 software

- 47 countries
- 23 NGOs
- 8 global health agencies
- 40,000+ monthly users

DHIS2 originally developed to support HMIS/M&E. M&E the dominant use still
Role of HMIS

What health services exist for whom? Where? When? Why?


health commodities

From “Helping Health Workers Learn” by David Werner
Lessons from 20 years of HMIS development

The installed base is important: never a green-field. Cultivation of what exists must be blended with what is new

Architecting: Which parts will do what. Integration and interoperability often need organizational change

Bottom-up vs. Top-down: information needs differ. Systems should be flexible to serve varying needs

Role of technology: Information systems are socio-technical. Non-technical problems can not be solved by technology

Sustainability: capacity building by far the largest cost.

Evolution: adaptation and change is key. Technology should be flexible
**Logistics management on DHIS**

Can we use DHIS2 for logistics management?

We need to have an ordering system.

We need to track where the commodities are.

### Commodity Availability

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Stock out of any essential drug for 7 days consecutively in the last one month?</td>
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<td>Stock out of vaccine supplies in the past one month?</td>
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<td>Stock out of family planning commodities in the past one month?</td>
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<td>Stock out of Antiretroviral Drugs in the past one month?</td>
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<td>Stock out of ACTs for 7 days consecutively in the past one month?</td>
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<td>Stock out of RDTs for 7 days consecutively in the past one month?</td>
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<td>Stock out of SPs for 7 days consecutively in the past one month?</td>
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<td>Stock out of LNFs for 7 days consecutively in the past one month?</td>
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<td>Stock out of HIV test kits for 7 days consecutively in the past one month?</td>
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<td>Stock out of anti-TB drugs for 7 days consecutively in the past one month?</td>
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<td>Stock out of INH for 7 days consecutively in the past one month?</td>
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<td>Stock out of Female Condoms in the past one month?</td>
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<td>Stock out of Implants in the past one month?</td>
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<td>Stock out of Emergency Contraception in the past one month?</td>
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<td>Stock out of Oxytocin in the past one month?</td>
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<td>Stock out of Misoprostol in the past one month?</td>
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<td>Stock out of Magnesium sulfate in the past one month?</td>
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<td>Stock out of Injectable antibiotics in the past one month?</td>
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<tr>
<td>Stock out of Antenatal Corticosteroid (ANCs) in the past one month?</td>
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<tr>
<td>Stock out of Chlorhexidine in the past one month?</td>
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What are we talking about?

Logistics Management Information System, Supply Chain Information System, Pharmacy Information System, Warehouse Information System...

A logistics management information system (LMIS) is a system of records and reports - whether paper-based or electronic - used to aggregate, analyze, validate and display data (from all levels of the logistics system) that can be used to make logistics decisions and manage the supply chain.
- Roll Back Malaria Partnership

Quite open-ended. What are we REALLY asked to do?
Different needs at different levels: - a simplified view

National level: Forecasting, procurement, customs, quality assurance, warehouse, finances, fleet management, pick-lists, distribution planning,…

Regional level: warehouse, distribution planning, pick lists

District level: Do the facilities have what they need? Where is it? Are there stock-outs?

Facility level: Do I have what I need soon? Forecasting, ordering, inventory balance
Different needs at different levels:
- a simplified view

What are we asked to make?
Not clear. One system? Two (?) interoperable systems?

Facility Inventory

Warehousing. National and regional
Challenges of combining all in one

- Warehousing. National and regional
- Inventory
- Costly
- Complex
- Limited
- Many users
Typical configurations

Commercial ERP

Inventory and ordering

dhis2
Challenges with such configurations

- ERPs are costly, typical with fees per-user. Can't cover all users
- There are "free" options for facility inventories and ordering systems. But none with well established interoperability with ERPs
- What do these two systems need to share? Consumption, forecasting. Financial data?
- What role do other systems play? HMIS, HRIS, Lab systems etc
Linking to other systems?

Commercial ERP

HMIS

Inventory and ordering

dhis2

HRIS

What data to share?
Our lessons from HMIS applied to LMIS

The installed base: there are existing routines, technologies etc that must be taken into consideration

Architecting: A mix of "heavyweight" ERPs and "lightweight" inventory/ordering system seems to be common

Bottom-up vs. Top-down: Both strategies applicable, for each of the sub-systems

Role of technology: Integration of LMIS, HMIS, HRIS etc "easy". But what data needs to be shared? To whom? Why?

Sustainability: Costly ERPs a challenge. Lightweight open source LMIS at lower levels a good solution

Evolution: As system matures, likely to see increased demand for functionalities also at lower levels, and for integration with other systems
Conclusions

Supply chain information pyramid is "top heavy": more features needed at national level and warehouses

LMIS: an ecology of different subsystems. Different technological solutions available, with pros and cons for the different uses/users

Technology will not solve problems. Routines, organizational structures, local capacity equally important