National Systems Mapping: Main Findings

1st December 2016

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Reference: Fed/2017/384-901

Disclaimer: The views expressed in this study do not necessarily reflect the views of the European Union
Executive Summary

• A number of significant national systems have been established such as Pharmaceutical Management Information Systems (PMIS), Human Resource Information Systems (HRIS) of MOH and MOLPS, South Sudan Electronic Payroll System (SSEPS/SSEPS II), Integrated Financial Management Information System (IFMIS), and District Health Information System/Health Management Information System (DHIS/HMIS) which are functional

• The Aid Information Management System (AIMS) at the MOFEP (Aid Coordination office) was found non-functional due to a number of associated challenges such as; unfriendliness of the system, failure to integrate well with IFMIS and also being expensive to sustain

• Of all the systems, Nutrition Information System was found still lying outside MOH at cluster level, however it reported to have reports being submitted by 40 partners on a monthly basis. It does not link in to national systems but serves the sector and has prospects for linkage

• The key challenge for all systems is to have regular reporting from all intended units; this is exacerbated by new administrative structures (newly appointed staff who are unfamiliar with the systems, structuring reporting systems), donor support ceasing, or continued follow up to ensure data received

• The cessation of various projects supporting systems in different sectors, coupled with the effects of conflict, fiscal crisis and administrative changes have led to partial divergent geographical coverage for key systems

• Mapping these systems, their purpose, coverage, and management, and providing recommendations for rationalising these can save costs whilst improving efficacy, accountability and strengthening the health sector. A clear understanding of the systems’ functions, status and requirements to reach full operating functionality can help partners prioritise assistance accordingly
Introduction/Background

- The component on information systems mapping in South Sudan is the first of three workstreams of the Health Systems and Facility Mapping Project (1. Information Systems Mapping, 2. Donor and Partner Survey, 3. Facility Survey) funded by the European Union (EU), implemented by the Ministry of Health with technical support from Charlie Goldsmith Associates (CGA).

- The project seeks to improve the availability, flow and usefulness of information regarding the health system. By seeking to map and understand these, and effectively integrate the key data sources onto the MOH’s website, it is expected that oversight can be strengthened and planning aided by better data availability.

- This workstream involves understanding the sector's information management systems, which support the management, delivery and oversight of services, and the use of public funding.

- A number of significant, and sustainable national systems have been established, but there remains a proliferation of different reporting and monitoring mechanisms outside of these; many of which are proprietary, do not link in to national systems, and do not provide transparent data.

- The cessation of various projects supporting systems in different sectors, coupled with the effects of conflict, fiscal crisis and administrative changes is likely to have impacted the geographic coverage and functioning of key systems.

- This activity provides a basis to support MOH to coordinate the various information sources so that data is visible in one place – a ‘one stop shop’ website dashboard is being developed so that MOH and partners can see progress on key indicators.
Methodology

• A structured question guide was developed, reviewed, tested and validated in a quorum of MOH team representing (M&E, HR, Nutrition, Finance & Admin.) and Charlie Goldsmith Associates team

• Authorisation Letters were signed by the Undersecretary and distributed to the MOFEP and MOLPS for the exercise to commence

• A team of six (three from MoH and three from CGA) was formed

• The aim is to have a better understanding of each information system: information flows, how data is collected (what forms are used, who does it?), how is it managed, who is involved, how is it reported, the current state of its data, coverage, use, and ownership.

• The objective is to be able to draw a picture of this, and also understand what the final output looks like

• Interviews are conducted as conversations, not surveys, clarifying answers where needed.

• A series of consultations and interviews were conducted and results shown in the subsequent slides
Summary of consultations (1 / 2): findings will be triangulated with partners as necessary in the next stages

<table>
<thead>
<tr>
<th>Information System</th>
<th>Who was consulted</th>
<th>When</th>
</tr>
</thead>
</table>
| PMIS               | • Dr Moses Malual, DG Pharmaceuticals  
                   • Dr. Bortel, Executive Director, CMS  
                   • Dr Neni Daniel  
                   • Moro Lawrence-LMU Coordinator  
                   • Sunday Kilara (Distribution Manager- CAIPA) | 17/11/16  
                   18/11/16  
                   21/11/16  
                   24/11/16  
                   29/11/16 |
| HRIS – Public Service | • Mathilda Eladio Ajidiru – Director Human Resources, MoLPS  
                           • Dr Malek Santo- Senior Inspector, HR | 21/11/16  
                           23/11/16 |
| HRIS - MoH         | • Payroll Manager, MoLPS  
                           • Juan Suzan, Assistant Inspector of Accounts, MoH | 18/11/2016  
                           30/11/2016 |
Summary of consultations (2 / 2): findings will be triangulated with partners as necessary in the next stages

<table>
<thead>
<tr>
<th>Information Systems</th>
<th>Who was consulted</th>
<th>When</th>
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</thead>
</table>
| IFMIS               | • Paulino Bok Guk, MoFEP  
• Ocum Genes (DG Budget MOFEP)                                                    | 31/10/16, 21/11/16 |
| DHIS                | • Victor Misaka  
• (MOH Data Manager)                                                                | 28/11/16      |
| NIS                 | • Qutab Alum (Systems Manager)                                                     | 24/11/16      |
| AIMS                | • Lwiza Deng (MoFEP Aid Coordination Office)                                       | 23/11/16      |
## Summary of systems data flow findings

<table>
<thead>
<tr>
<th>System</th>
<th>Means of data collection at lowest level</th>
<th>Date of most recent submissions, as reported</th>
<th>Number of states/counties reported at most recent submission date</th>
<th>Denominator # of reports expected from states/counties</th>
<th>Accesed by MoH?</th>
<th>Accesed by SMoH?</th>
<th>Accesed by CHD?</th>
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<td>PMIS</td>
<td>Monthly reporting form</td>
<td>Nov. 2016</td>
<td>3 counties</td>
<td>79</td>
<td>Y</td>
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<td>N</td>
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<td>HRIS PS</td>
<td>Form 40 &amp; Form1</td>
<td>Sporadic</td>
<td>ALL line ministries</td>
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<td>N</td>
<td>N</td>
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<td>HRIS MoH</td>
<td>Data form</td>
<td>Dec. 2015</td>
<td>6 HPF1 states</td>
<td>79</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>NIS</td>
<td>Data form</td>
<td>Nov. 2016</td>
<td>40 partners</td>
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<td>N</td>
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<td>IFMIS</td>
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<td>10 former states</td>
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<td>6 former states</td>
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<td>SSEP S2</td>
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<td>4 former states</td>
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<td>DHIS 1</td>
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<td>Y</td>
<td>Y</td>
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<tr>
<td>DHIS 2</td>
<td>Summary of reports</td>
<td>Sept. 2015</td>
<td>All ten states</td>
<td>79</td>
<td>Y</td>
<td>N</td>
<td>N</td>
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<td>System</td>
<td>Which authority has overall responsibility for the system?</td>
<td>Who developed the system?</td>
<td>Who provided support to develop the system?</td>
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<td>PMIS</td>
<td>Directorate of Pharmaceuticals, MoH</td>
<td>SIAPS supported by USAID through MSH and now Chemonics is taking over</td>
<td>USAID through MSH</td>
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<td>USAID; Deloitte</td>
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<td>HRIS MoH</td>
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<td>Charlie Goldsmith Associates</td>
<td>HPF donors</td>
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<td>SSEPS 1</td>
<td>Directorate of Human Resources, MoLPS&amp;HRD</td>
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<td>GRSS</td>
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<td>World Bank through DAI</td>
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<tr>
<td>DHIS 1</td>
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<td>HISP</td>
<td>HPF; UNDP; WHO; MSH; HealthNet</td>
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<td>DHIS 2</td>
<td>Directorate of Planning and Budgeting, MoH</td>
<td>University of Oslo</td>
<td>HPF; UNDP; WHO; MSH; HealthNet; Global Fund</td>
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</table>
PMIS : Findings (1 of 2)

• Current status of system

  • The system’s name is Logistics Management Unit (*because it covers in country logistics of drugs distribution and reporting*)
  • Database operating on a dashboard, sits in MOH premises
  • Developed by SIAPS through MSH funded by USAID
  • The system currently captures 15 of the essential primary healthcare drugs
  • Dashboard data focuses on stock levels and predominately to trace potential stock outs while the main information recorded is if reports have been received

• Current status of data

  • Data received sporadically between June and September 2016 from HPF states.
  • Data should be collected and reports sent monthly but currently not the case in practice due to creation of 28 states and lack of infrastructure
  • Last updated on September 2016, for Morobo, Lainya and Kajo Keji
  • No data for Jonglei and Upper Nile
PMIS : Findings ( 2 of 2)

Planned system
  • To extend the product list beyond the 15 current essential tracer medicines
  • Plan to integrate the dashboard ARTs, anti-malarials and family planning commodities
  • Plan to rollout the system to all other states
  • MoH to encourage the pull system as opposed to the push system to ensure accountability

How proposed MOH Mapping Dashboard could interface with the system:
  • Link to PMIS dashboard (most simple)
  • Show how much data has been received/how current
  • Provide summary data from PMIS on MOH Mapping Dashboard (e.g. place on map where data has been received from, where stock outs have occurred, etc)
PMIS: Data flow as it *should be*

- **MOH DG Pharmaceuticals & Drug Supplies**
  - Quarterly Reports
  - Patients and Stock Reports
- **LMU/CMS**
  - Drugs & Reporting Tools
  - Consumption Reports
- **County**
  - Drugs and Reporting Tools
- **Server**
  - Reporting

- **PHCCs, PHCU & County Hospitals**
  - Drugs and Reporting Tools
  - Referral and State Hospitals
  - Undersecretary MOH
  - MOH DG

Different Report types & Drug flow
PMIS: Data flow as reported

MOH DG Pharmaceuticals & Drug Supplies

LMU/CMS

MOH

Quarterly Reports

Undersecretary

Referral and State Hospitals

Consumption Reports

Drugs & Reporting Tools

Server

County

No reporting

PHCCs, PHCUs & County Hospitals

Different Report types & Drug flow

Reporting

No reporting (as of Dec 2016)
HRIS Public Service

Current status of system
• Access database (online using a server)
• Developed by STSPE with funding from USAID through Deloitte
• The system is maintained by Directorate of Human Resource Management, MoLPS

Current Status of data
• Data from system was previously exported into excel for analysis, however functionality not available due to system overload
• Data entered at National level, no state or county data entry

Planned system
• To expand capacity of the system to be able to withstand overload and still maintain its functionality requiring technical and financial support

How proposed MOH Mapping Dashboard could interface with the system:
• Make use of data within MoH HRIS
HRIS Public Service: Data flow as reported

Undersecretary MOLPS -> Decision on files -> DG HRM

Staff files Verification

HRM Department

Verification of staff files and numbers

Files move back for stamping and signoff

Files back for entry into HRIS

Director HRIS

Files returned

Staff files with allocated Establishment numbers

Public Service Data Clerks

Staff File with either Form 40 or Form1 & all relevant credentials

All Line Ministries (Establishment Officers)
HRIS – MoH: Findings

Current status of system
- Web based database
- Data entered at the county (by CHD HR officers), accessed by SMoH & MoH
- Managed by Policy, Planning and Budgeting Directorate, HR department
- Data maintained up until December 2015 (for five HPF former states – EES, LKS, NBG, WBG, WRP, and UTY data collected but not uploaded) however not updated since then

Current status of data
- Stores scans of qualifications, training, appointment letters, photo, as well as data on payroll and grading
- Data not updated since December, 2015

Planned system
- HRIS needs to be rolled out in remaining former states (CES, JGL, UNS, WES)
- Reinforce monthly reporting from counties that HRIS was rolled out (updating staff promotions, new staff, staff that have left)

How proposed MoH Dashboard could interface with the system
- Link to HRIS website
- Reports on how much has been received/how current
- Summary data reports
HRIS MOH: Data flow as it *should be*

- **MOH/HR**
  - Reporting
  - Data from the server

- **SMOH/HR**
  - Reporting
  - Data from the server

- **CHD/HR**
  - Data goes to and comes from the server
  - Data on facility Staff

- **HRIS Website**
  - Data goes to and comes from the server

- **PHCCs, PHCUUs & County Hospitals**
  - Data on facility Staff
HRIS MOH: Data flow as reported

- MOH/HR
  - Data from the server
  - No reporting

- SMOH/HR
  - Data from the server
  - No reporting

- CHD/HR
  - Data goes to and comes from the server
  - No reporting

- HRIS Website
  - No reporting (as of Dec 2016)

- PHCCs, PHCUs & County Hospitals
  - Data on facility Staff

DRAFT
IFMIS: Findings

Current status of system
- Free-balance (integrated database server) managed by MOFEP
- Data should be collected by all states but currently no reporting since last year because of changes in the state structure, no CTMCs and partner support withdrawn

Current status of data
- No reporting due to changes in state structures, though funds are being transferred to Hospitals, and Counties.
- Formerly CTMCs would review data before it was sent ‘up’ to STMC, CTMCs no longer exist and reports are not sent (partners no longer involved in supporting this process)

Planned system
- To expand system to capture information on all 28 states (budgets and transfers), and when GRSS 2016/17 budget is approved
- To roll out training to states (currently MoFEP Technical staff are attending training in Uganda)
- Potential links between SSEPS and HRIS to make IFMIS more comprehensive, including budget preparation and resource management

How proposed MOH Mapping Dashboard could interface with the system
- Budgets and tracker (for transfers) could be uploaded onto MoH dashboard
- Reports from states or summary of what has been submitted/how recent
IFMIS: data flow, as reported

Key

- = currently taking place
- = needs verification
SSEPS (1 and 2): Findings

Current status of system

- SSEPS 2 web based database, SSEPS 1 Access database with reports onto website
- MoLPS HRM department responsible, with entry by payroll managers and viewed by finance managers in line ministries
- SSEPS 2 rolled out in 4 former states of WBG, WRP, EES & CES.
- The four states, national hospitals and national ministries were reporting until changes in state structures
- The remaining six former states are using SSEPS 1

Current status of data

- Reports no longer being sent for both SSEPS 1 & 2 since Sept. 2015 from states due to new state structure and no follow up

Planned system

- Intend to roll out SSEPS 2 to all ten former states, but no partner support

Potential links with MOH Mapping Dashboard

- Show how much data is captured/how recently
- Summary reports on number of workers by job type/grade
Nutrition Information System: Findings

Current status of system:
- Frontal part using visual basic (dotnet) while the back uses Access
- Developed and managed by nutrition cluster coordination office
- Permanent Partners (MOH, UNICEF, WFP, SC, ACF and Cluster coordination) access through cluster central email after data is uploaded by systems manager
- 40 nutrition partners maintain monthly reports to an average of 80% reporting

Current status of data
- Reports on cluster established nutrition indicators monthly as well as daily to track the changing status of malnutrition

Recommendations
If the information systems cannot be fully integrated, they should be linked to be able to communicate to one another and be able to generate required information and reports.
All nutrition indicators need to be captured in DHIS2 as of January 2016 since it currently only captures 3 of the indicators.
Nutrition focal point person should be identified in M&E to be trained to use DHIS2 to generate reports on nutrition indicators.
The nutrition focal point should be linked to Nutrition information system to have access to the central email for nutrition cluster.

- How system could map with proposed MoH Dashboard
  - Export report from central email on a monthly basis or daily basis with analysis
  - Reports to show how many reports received and how frequently by state/partner
  - Summary reports
NIS: Data flow as reported

DG Primary Healthcare Service

Weekly updates & Quarterly narrative reports (No statistical data)

Director of Nutrition

No regular reporting only on request

Key Nutrition Cluster partners-WFP, MOH, UNICEF, SC, ACF, Coordination Unit

Aggregated Analysed Reports through central email

Nutrition Cluster Information Systems Manager

Monthly Reports

All Nutrition Cluster Partners

Quarterly Reports

Undersecretary MOH

DRAFT
AIMS: Findings

• **Current status of system:**
  - No longer in use, due to system not being user friendly, expensive and not able to be integrated with IFMIS.

• **Details of system:**
  - Web based system interface on a server hosted in Nairobi
  - MoFEP Directorate of Aid Coordination
  - Data entered at beginning of 2016
  - Donor focal points collect data, systems manager in Aid Coordination analyses and reports, and line ministries view data
  - Online interface, with feedback sent by email

• **Future plans:**
  - Plan to develop new system closely linked to IFMIS once funding is available

• **How proposed MOH Mapping Dashboard could interface with the system:**
  - When new system integrated with IFMIS, summary reports could be displayed on the Dashboard
DHIS: Findings

Current status of system
- Currently using DHIS 1.4 and it is Access based
- It is managed by the Directorate of Policy, Planning, Budgeting and Research
- Data is exported into xml file and shared
- Currently MoH M&E data manager submits DHIS 1 exported reports to Oslo University (DHIS 2 technical partner) for upload into DHIS2

Current status of data
- There is a significant drop in reporting rate (since creation of 28 states)
- There is weekly submissions for IDSR and the actual reporting is done monthly and quarterly. 2015 report is due for printing
- Latest reports being received are for October 2016 and are so far for only three states-EES, WES and WBG

Planned system
- To migrate to DHIS 2 next year (web based).
- To solicit funds to support technical capacity
- To rollout to the states

Potential links with MOH Mapping Dashboard
- Show how much data is captured/how recently
- Show information on key health indicators mapped by geography
Source: South Sudan Conference Presentation. Bloemfontein, South Africa, April, 2015
## Summary: Key Improvement Areas and Links

<table>
<thead>
<tr>
<th>System</th>
<th>Key areas for improvement</th>
<th>Potential links to be added</th>
</tr>
</thead>
</table>
| **PMIS**     | • Could be expanded to include information on more of the primary healthcare drugs. At present reporting only done on 15 drugs.  
• Enhanced timeliness of data collection across all areas of the country. | • PMIS data incorporated into DHIS2 to utilise information on drug shortages further informing response to disease outbreaks. |
| **HRIS – Public Service** | • Added functionality to aid data analysis and prevent system overload.  
• System expansion to include data at state and county levels as well as national level. | • HR public service data to be linked with HRIS MoH (as below) to create HR health data repository.  
• HRIS public service to link to DHIS2. |
| **HRIS - MoH** | • Enhanced timeliness of data collection – monthly reporting.  
• Data collection rolled out across all areas of the country and at CHD/ SMOH/NMOH levels. | • HRIS data inked to SSEPS payroll system would streamline health salary payments.  
• HRIS MoH to link to DHIS 2. |
| **SSEPS (1 and 2)** | • Reporting across all states for 32 state system and uniformity of SSEPS 2 across partners. | • Link to HRIS MoH (as above) |
| **IFMIS**    | • Reporting established to 32 state system.  
• Expand system to capture all financial information on budget and transfers | • Link to SSHI transfers section to enhance and overlap information on transfers  
• Link to DHIS2, financial information captured as part of reporting. |
| **DHIS (1.4 and 2)** | • DHIS 1.4 to be upgraded to DHIS 2.  
• Requirement that data incorporated into DHIS2 is uniform across 32 state system and has timely reporting.  
• Roll out DHIS 2 (once established) to a state/ county level to allow use of and interpretation of health data. | • Information incorporated onto DHIS 2 from: PMIS, HRIS Public Service, HRIS MoH, IFMIS and NIS. |
| **NIS**      | • NIS access/ reporting made accessible across MOH departments (currently maintained partners). | • All information to be linked to DHIS2 |
| **AIMS**     | • System no longer in use and not able to integrate with IFMIS.                                             | • Integration with/ replaced by IFMIS. |
Recommended next steps

- DHIS 2 is set to commence August 2018. As part of this process links to data sets and systems across the sector will be established.
- Harmonised reporting system to be created with regards to the timeliness and locations covered by systems. To be implemented for systems across the health sector.
- Use and interpretation of DHIS 2 data at a national level for both the MOH and partners.
- Creation of a platform for interpretation of DHIS 2 data at a county level.
- Public financial management processes and structures established/ supported at a national, county and state level to facilitate robust reporting into DHIS 2 and use of data for health sector development.
Thank you