Transitioning to digital case-based surveillance systems: achievements and problems

DHIS-2
MYANMAR
Background

• The MoHS has started the first step towards electronic health information system using the District Health Information System (DHIS-2) as a national reporting platform since 2013.
• Dialogues on using the DHIS-2 as a national reporting platform for the three national programs (HIV, TB, and Malaria) were taken place in early 2016.
• Meanwhile, other components of the Health Information Architecture have been implemented such as:
  – Electronic Medical Recording System for individual patient (Open MRS)
  – Logistic management information system (mSupply)
  – Laboratory information system (GxAlert) and
  – Preparation stage: Master Patient Index (MPI) that help creating unique patient ID and thus linking individual across various components of holistic health information systems were taken place
The current situation of NTP DHIS-2

- Capacity building, configuration (since July, 2016) TA from University of Oslo
- In country fundamental academies and end users trainings in September-December 2016
- Fully rolled-out in March 2017 as a national reporting platform for Aggregate Data Reporting using DHIS-2
- 4 batches of refresher Trainings for end users (NTP, States/Regional TB Officers, TB Team Leaders, Data Assistants, Implementing Partners) in June 2017
- New servers set up in Oct 2017
- NTP data extracted from DHIS-2 and reported since 1st Quarter 2018
Overview of DHIS-2

• Primary purpose of system
  - In line with National HMIS NSP
  - To be part of National HMIS
  - Transition from paper-based to e-surveillance
  - NTP & all Implementing Partners, sending regular reports to NTP
    - For both data entry & reviewing outputs (dashboards, reports)
  - National leadership of HMIS Unit (e-Health focal point), HMIS & ATM share the central server and work together
NTP Data Flow

DATA WAREHOUSE

NTP Central

Subnational NTP Team

Data entry by

States & Regions

District

Townships

@ NTP S/R office

Aggregated Data

Public

@ SR (Field/Headquarter office)

Aggregated Data

Partners A

Partners B

Partners C

Partners D

Source: NTP
Overview of DHIS-2 (cont:)

- Data flow comes from basic management unit at the township level, customized on main data source documents: TB-07 & 08, TB/HIV, GeneXpert & MDR-TB reports.
- NTP DHIS-2 is already linked with National HMIS
- Laboratory results are integrated based on Block-3 of TB-07 & GeneXpert reports
- DHIS-2 is accessed at state/regional and national level (shared central server among HMIS & ATM)
- Data transfer from State/Regional to national/central computers
- Aggregated data is sent to a national HMIS through DHIS-2
Dashboard on NTP DHIS2
# Data set report on DHIS2

## Quarterly Report on TB Case Registration (TB - 07)

### Area population

<table>
<thead>
<tr>
<th></th>
<th>102127526</th>
</tr>
</thead>
</table>

### CNR Quarterly (Bacteriologically confirmed) = \( \frac{\text{Block 1, Row 1-3} \times 100,000}{\text{Population}} \)

\[ \text{Population} \]

|          | 22.7 |

### CNR Quarterly (All TB cases) = \( \frac{\text{Block 1, Row 1-2=3} \times 100,000}{\text{Population}} \)

\[ \text{Population} \]

|          | 52.5 |

### New: All TB cases registered during the quarter except Transfer in patients

<table>
<thead>
<tr>
<th>Type of disease/Type of patient</th>
<th>New</th>
<th>Re-treatment Cases</th>
<th>Total</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary, bacteriologically confirmed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extra pulmonary, bacteriologically confirmed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extra pulmonary, clinically diagnosed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

|          | 60115 | 40187 | 100292 |

### Total TB Case

|          | 60115 | 40187 | 100292 |

### Breakdown by Age Group and Sex

<table>
<thead>
<tr>
<th>Type/ Age/ Sex</th>
<th>0-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-24</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65 and above</th>
<th>Total</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6000</td>
<td>5352</td>
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<tr>
<td>Release</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>6006</td>
<td>5357</td>
<td>5131</td>
<td>5020</td>
<td>4118</td>
<td>5107</td>
<td>5107</td>
<td>5107</td>
<td></td>
<td>6061</td>
<td>5409</td>
</tr>
</tbody>
</table>

### Childhood TB Meningitis by Age Group and Sex

<table>
<thead>
<tr>
<th></th>
<th>0-4</th>
<th>5-9</th>
<th>10-14</th>
<th>Total</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
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<tr>
<td>F</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

|          | 50  | 57  | 15    | 12    | 7           | 55  | 55  | 112  |

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Note: The data in the table is a summary of TB cases registered during the quarter, categorized by various parameters such as disease type, age group, and sex.
Achievements of DHIS-2

- National roll-out was launched since March 2017 as a national reporting platform
- Coverage by all states/regions
- Coverage by all TB patients (aggregate data) (OpenMRS Case-based R & R for MDR-TB patients in (4) Regions: Yangon, Mandalay, Ayeyarwady & Bago)
- Township level DHIS-2 training will be carried out during 2\(^{nd}\) quarter, 2018
Main challenges

➢ Sustainable technical assistance for DHIS2 system and server maintenance
➢ Limited human resource and capacity building for technical persons (dedicated staff)
➢ Sustainable funding support beyond 2020
Future Plan

Priority actions for strengthening the TB information system

➢ To develop the National, Region/States, Township Level Dashboard for data sharing within NTP & all Implementing Partners with strong political commitment
➢ To update/modify the data validation rules and data collection Form
➢ To build up the capacity for Server Administrator and DHIS2 System Administrator
➢ To provide Township level DHIS-2 data entry training
➢ To strengthen data quality assurance & supportive supervision & monitoring at all levels
Next Steps for DS TB case-based R & R

• Funding requires for TA & Customization of developing DS-TB Case-based web application and Software

• To develop the DS-TB Case-based Web application and Software align with Mobile Tablet Application (Existing Technical Assistant or WHO)

• To learn experiences from other countries with already established system in place
THANK YOU