

District Health Information System (DHIS) – Specifications for additional features/module

The revision of the DHIS software will enable countries to monitor their HIV (i.e. PMTCT, ART, Male Circumcision) programs and evaluate its effectiveness and impact. The aim of UNAIDS support to the DHIS software’s revision will be of three folds:

1. Provide recommendations to UNAIDS based on the DHIS actual architecture on how best to integrate data (denominators) and visualization needs identified into DHIS
2. Update / revise the software based on these recommendations.
 - a. Adjust/revise the importation features to input denominator from EPP/Spectrum and other data source into the DHIS.
 - b. Develop mechanism within the DHIS to complete coverage calculations based on programme and denominator data inputted.
 - c. Develop data visualizations as per UNAIDS requirements
3. Develop user guide.

This specification document aims to share UNAIDS’ vision of the new features to be included in DHIS software with the firm which will be in charge of integrating these additions features to the software. At this end it provides the description/specification of the following:

- A list of a minimum set of HIV programme indicators (i.e. ART, PMTCT, Male circumcision) to be collected/input to DHIS,
- The format of the form that will be used to import denominators into the DHIS software,
- The specifications of the visualization/dashboard module (including which indicators to be include in the visualization)

1. Minimum set of HIV programme indicators to be generated through the DHIS

In the long run, the DHIS software should be able to generate additional indicators to enable UNAIDS to monitor the post 15 agenda. However, in the short term, it must be able to able to generate this minimum set of indicators presented in table 1.

Table 1: Minimum set of indicators that will need to be generated within the DHIS software

Numerator	Source	Denominator	Source
Number of persons tested for HIV	DHIS 2 / facilities	Estimated population (by sex, age group)	UN Population Prospects / Spectrum
Number of tests conducted at different level (health care center, district, province / region and national level)	DHIS 2 / facilities		
Number of men medically circumcised in the facility	DHIS 2 / facilities	Estimated number of men in need of circumcision	prevR (?) or National estimates based on DHS data on circumcision

		Target on male circumcision	National reports (?)
Number of HIV+ pregnant women receiving PMTCT	DHIS 2 / facilities	Estimated number of HIV+ pregnant women	Spectrum (national, disaggregated to second administrative level)
By regimen		Estimated number of HIV+ pregnant women	Spectrum (national, disaggregated to second administrative level)
Having started PMTCT before or during current pregnancy			
Number of pregnant women who received an HIV test	DHIS 2 / facilities	Estimated number of expected pregnancies (?)	
Number of people receiving ART	DHIS 2 / facilities	Estimated number of people living with HIV (by sex, age group) Estimated number of people in need of treatment (WHO criteria) Estimated number of people in need of treatment (national criteria)	Spectrum (national, disaggregated to second administrative level) prevR
Newly started on ART	DHIS 2 / facilities		
Number of people receiving ART 12 months after initiation	DHIS 2 / facilities	Total number of persons who initiated antiretroviral therapy in the 12 months prior to the reporting period	DHIS 2 / facilities (?)

2. Template/form to be used for denominators that will need to be imported into the DHIS software

An initial list of denominators has been provided in the table 1. However, a mechanism should be put in place to import those denominators into the DHIS software. To ease the process, it will be helpful to develop a template/spreadsheet in Excel (.xlsx, .xls, .csv) that could be easily imported in the software. Based on the firms' experience in DHIS implementation in some countries and the importation protocol built within the software, a review of existing mechanisms and templates for data export from Spectrum and other sources should be conducted, based on which the import function to the DHIS would be revised or recommendations for a draft of form/template for inputting data to the DHIS will be made and shared with UNAIDS. UNAIDS could revised the form/template based on both the nature and the structure of the data that will need to be imported into the software. This draft template will be the outcome of a review of existing templates for data export from Spectrum and other sources based on which the import function to the DHIS would be revised or recommendations for a modified template for inputting data will be made.

Once imported into the DHIS, an internal linkage process within the software between the numerator (program data) and the denominator will compute the indicators in terms of percentage or number for some units (example: XX number for 1000 or 10000). It is worth insisting that the numerator for each indicator will be HIV program data collected at the facility/district/national level while the denominator will come from various source and will have to be imported into the DHIS.

3. The specifications of the visualization/dashboard module (including which indicators to be include in the visualization)

The visualization module will be the most important features of the DHIS software as it will enable health workers, community health workers and stakeholder to use the data for action and make rational decisions based on facts and figures. At this aim, the visualization module needs to include at least the following:

- **Maps:** Maps at different administrative/service delivery levels (service delivery GPS coordinates, districts, province / regions and national) should be included. Users should be able to visualize any indicators (single or multiple indicators) at any administrative level on maps. The maps should be user-friendly with the possibility to change the mapping color gradation, to zoom in and to zoom out (which will change the layers / administrative level), to export as image for further use in reports or presentations. It must be flexible by allowing user to update shape file and imports additional shape files into the system as administrative/health systems revision take place.
- **Graph:** the module should include graphs and not limited to line, pie, bar, bubble graphs. The number of indicators to graph should be unlimited to allow a combination of any indicators (for example graph number HIV positive women and number of pregnant women attending antenatal care in a specific district to compare the cascade). The charts as the maps should be user friendly and allow the user to change the axes gradations (numbering) and font size and color, modify the chart title (font color, size) as well as the legend position (size and color) In addition the user should be able to change the chart items color. The aim is to have within the system a ready-to-use charts and avoid the burden to redo the same graph in third party software. An exportation options need to be included
- **Table:** The user should be able to construct a table within the visualization module. As mention above, most of the property of the table should be able to be modified by the user.

The company which will in charge of revising the DHIS software will propose a layout for the visualization module. UNAIDS will review the layout and make recommendation for its improvement.