DHIS2 Software Operational Guideline Nepal

Government of Nepal
Ministry of Health
Department of Health Services

Management Division

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Contents

DHIS2 Background

DHIS2 is a tool for collection, validation, analysis, and presentation of aggregate and patient based statistical data, tailored (but not limited) to integrated health information management activities. It is a generic tool rather than a pre-configured database application, with an open meta-data model and a flexible user interface that allows the user to design the contents of a specific information system without the need for programming. DHIS2 is a modular web-based software package built with free and open source Java frameworks. DHIS2 is open source software released under the BSD license and can be obtained at no cost. It runs on any platform with a Java Runtime Environment (JRE 7 or higher) installed. DHIS2 is developed by the Health Information Systems Programme (HISP) as an open and globally distributed process with developers currently in India, Vietnam, Tanzania, Ireland, and Norway. The development is coordinated by the University of Oslo with support from NORAD and other donors. The DHIS2 software is used in more than 40 countries in Africa, Asia, and Latin America, and countries that have adopted DHIS2 as their nation-wide HIS software include Kenya, Tanzania, Uganda, Rwanda, Ghana, Liberia, and Bangladesh. A rapidly increasing number of countries and organisations are starting up new deployments. The documentation provided herewith, will attempt to provide a comprehensive overview of the application. Given the abstract nature of the application, this manual will not serve as a complete step-by-step guide of how to use the application in each and every circumstance, but rather will seek to provide illustrations and examples of how DHIS2 can be implemented in a variety of situations through generalized examples. Before implementing DHIS2 in a new setting, we highly recommend reading the DHIS2 Implementation Guide (a separate manual from this one), also available at the main DHIS2

Key features and purpose of DHIS2

The key features and purpose of DHIS2 can be summarised as follows:

- Provide a comprehensive data management solution based on data warehousing principles and a modular structure which can easily be customised to the different requirements of a management information system, supporting analysis at different levels of the organisational hierarchy.
- Customisation and local adaptation through the user interface. No programming required to start using DHIS2 in a new setting (country, region, district etc.).
- Provide data entry tools which can either be in the form of standard lists or tables, or can be customised to replicate paper forms.
- Provide different kinds of tools for data validation and improvement of data quality.
- Provide easy to use - one-click reports with charts and tables for selected indicators or summary reports using the design of the data collection tools. Allow for integration with popular external report design tools (e.g. JasperReports) to add more custom or advanced reports.
- Flexible and dynamic (on-the-fly) data analysis in the analytics modules (i.e. GIS, PivotTables,Data Visualizer, Event reports, etc).

- A user-specific dashboard for quick access to the relevant monitoring and evaluation tools including indicator charts and links to favourite reports, maps and other key resources in the system.
- Easy to use user-interfaces for metadata management e.g. for adding/editing datasets or health facilities. No programming needed to set up the system in a new setting.
- Functionality to design and modify calculated indicator formulas.
- User management module for passwords, security, and fine-grained access control (user roles).
- Messages can be sent to system users for feedback and notifications. Messages can also be delivered to email and SMS.
- Users can share and discuss their data in charts and reports using Interpretations, enabling an active information-driven user community.
- Functionalities of export-import of data and metadata, supporting synchronisation of offline installations as well as interoperability with other applications.
- Using the DHIS2 Web-API , allow for integration with external software and extension of the core platform through the use of custom apps.
- Further modules can be developed and integrated as per user needs, either as part of the DHIS2 portal user interface or a more loosely-coupled external application interacting through the DHIS2 Web-API. In summary, DHIS2 provides a comprehensive HIS solution for the reporting and analysis needs of health information users at any level.
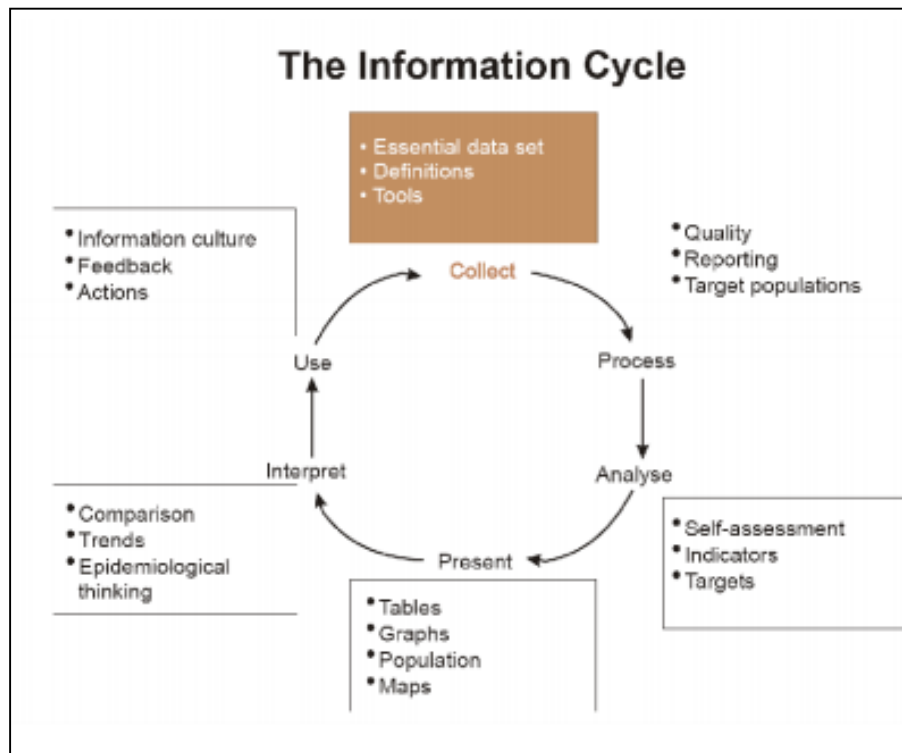
DHIS2 provides a powerful set of tools for data collection, validation, reporting and analysis, but the contents of the database, e.g. what to collect, who should collect it and on what format will depend on the context of use. However, in order to do anything with DHIS2, you must first create meta-data. Meta-data, or data about the data, describes what should be collected (data elements and categories), where it should be collected (organisation units) and how frequently it should be collected (periods). This meta-data needs to be created in the DHIS2 database before it can be used. This can be done through the user interface and requires no programming or in-depth technical skills of the software, but does require a good understanding of the processes which you are trying to collect data form. This section will provide a very quick and brief introduction to DHIS2 database design and mainly explain the various steps needed to prepare a new DHIS2 system for use. Here are the steps to follow:

1. Set up an organisational hierarchy

2. Define data elements

3. Define data sets and data entry forms

4. Define validation rules

5. Define indicators

6. Define report tables and design reports

7. Set up the GIS module

8. Design charts and customise the dashboard

Data management and analytics

DHIS 2 lets you manage aggregate, routine data through a flexible meta-data model which has been field-tested for more than 15 years. Everything can be configured through the user interface: You can set up data elements, data entry forms, validation rules, indicators and reports in order to create a fully-fledged system for data management. DHIS 2 has advanced features for data visualization, like GIS, charts, reports, pivot tables and dashboards which will bring meaning to your data.

DHIS2 Login

Logging on to DHIS2 Regardless of whether you have installed the server version of the desktop Live version, you will use a web-browser to log on to the application. DHIS2 should be compatible with most modern web-browsers, although you will need to ensure that Java Script is enabled.
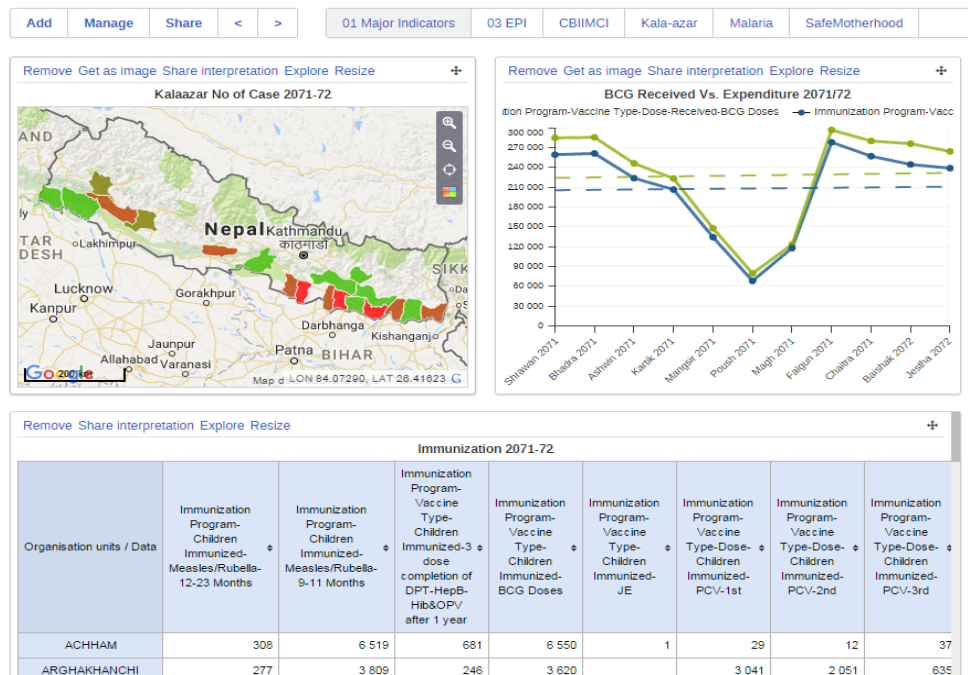

To log on to the application just enter http://localhost:8080/dhis. Once you have started DHIS2, either on-line or off-line, the displayed screen will prompt you to enter your registered user-name and password. After entering the required information click on log-in button to log into the application. The default user name and password are 'admin' and 'district'. They should be changed immediately upon logging on the first time.
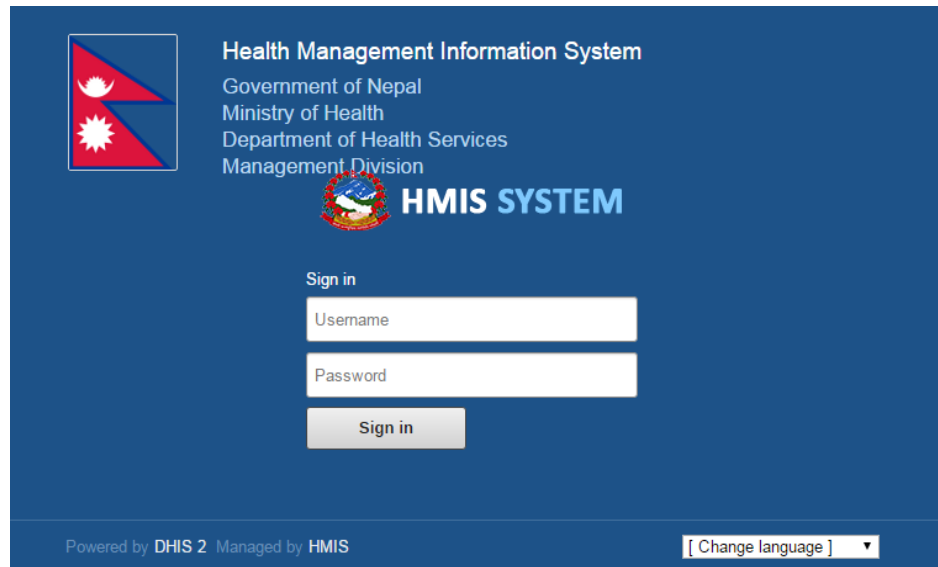
If you have forgotten your password, you can click on the "Forgot password?" link. You must have informed DHIS2 of your email address and the server must be properly configured to send emails. If you want to create your own account (and the server administrator allows this), simply click "Create an account" and follow the directions provided.

Once the login is complete the page to the left hand side will appear which is called the Dashboard
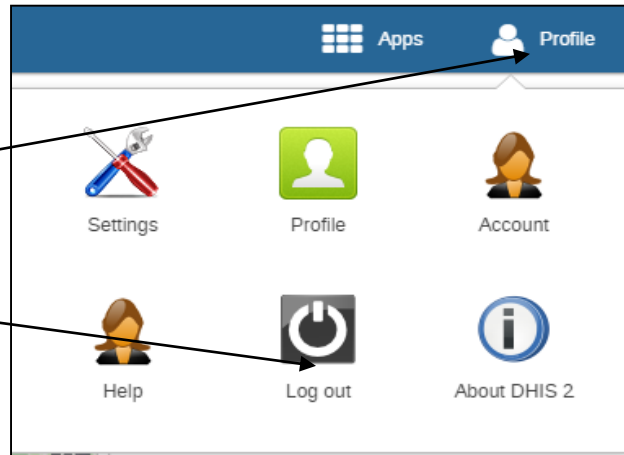
The Dashboard would later display the data of all the important data elements and Indicators as per the user requirements.

Organisation units / Data	Immunization Program-Children Immunized-Measles/Rubella-12-23 Months	Immunization Program-Children Immunized-Measles/Rubella-9-11 Months	Immunization Program-Vaccine Type-Children Immunized-3 dose completion of DPT-HepB-Hib&OPV after 1 year	Immunization Program-Vaccine Type-Children Immunized-BCG Doses	Immunization Program-Vaccine Type-Children Immunized-JE	Immunization Program-Vaccine Type-Dose-Children Immunized-PCV-1st	Immunization Program-Vaccine Type-Dose-Children Immunized-PCV-2nd	Immunization Program-Vaccine Type-Dose-Children Immunized-PCV-3rd
ACHHAM	308	6 519	681	6 550	1	29	12	37
ARGHAKHANCHI	277	3 809	246	3 620		3 041	2 051	635

Logging out of DHIS2

Steps for logout DHIS2 software

1. Click on profile

2. Click on logout

User Management

DHIS2 allows for multiple users to access the system simultaneously, each with a defined set of permissions. These permissions can be finely tuned so that certain users can only enter data, while others may generate reports. Multiple user roles can be created, each with their own set of permissions, and then assigned to users which grant them certain privileges within the system

Creating new user roles:

One can create as many user names according to the requirement. User can be assigned certain privileges, and can be assigned to certain organisation units for which they will be enabled to enter data on behalf of.

1. To access the user module, choose *Users* from the "Apps" menu
2. Click "User" from the menu items on the left-hand pane
3. User role already registered will appear as the list given below
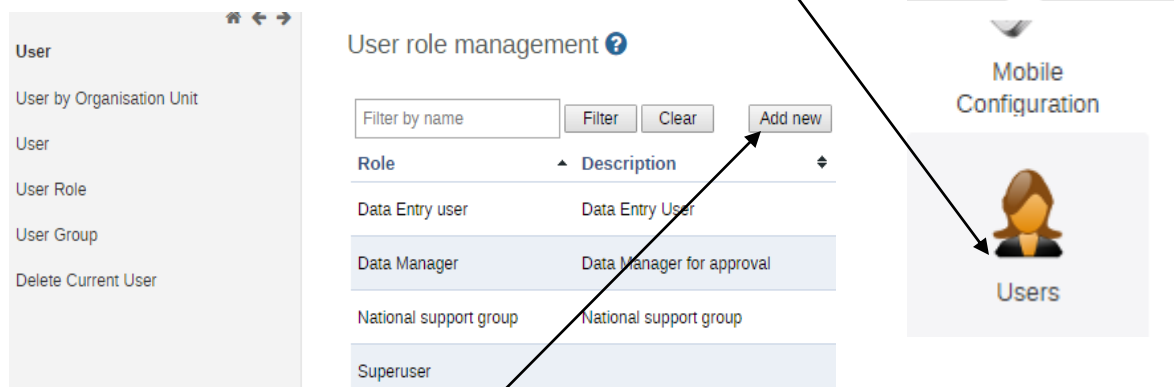
4. To add new user role (click on add New)

5. Type user role name (As part of creating a user name you are required to define the user role), select data sets, Progam & authorities
6. Click on add
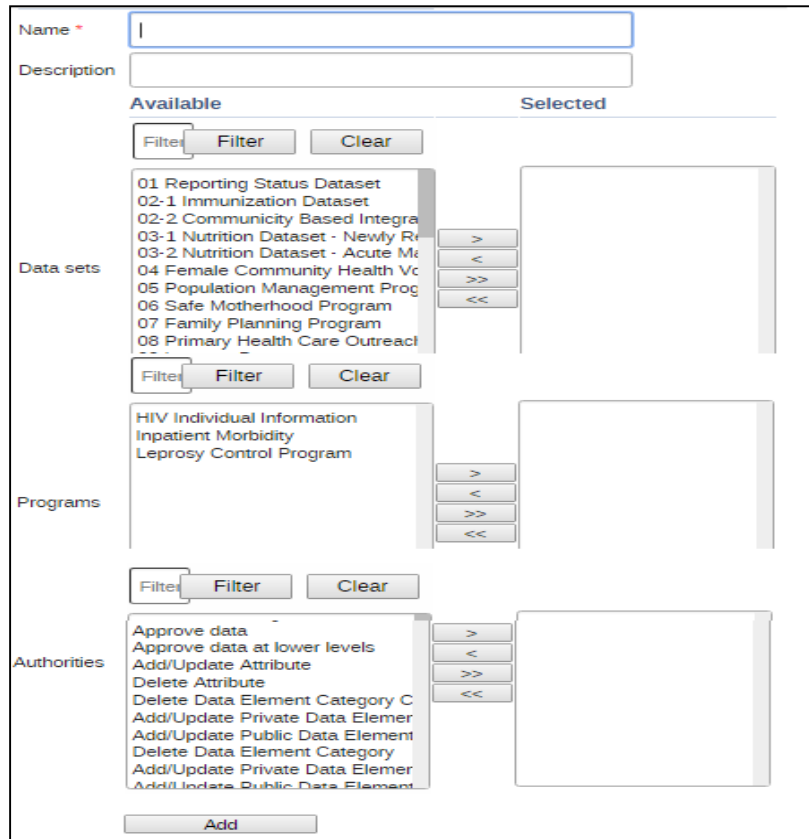

Creating new users:

1. Click on "User" from the menu items on the left-hand pane
2. User accounts already registered will appear as the list given below
3. Click on Add new
   - Choose this if you would like to enter all the details of the new user such as name, password, etc.
   - If you choose this action, then enter the following information: user name, password, surname, first name, E-mail, OpenID account (if any) and mobile phone number (if any).
   - After you finish adding the user, the account will be ready for them to use with the user name and password that you supply.
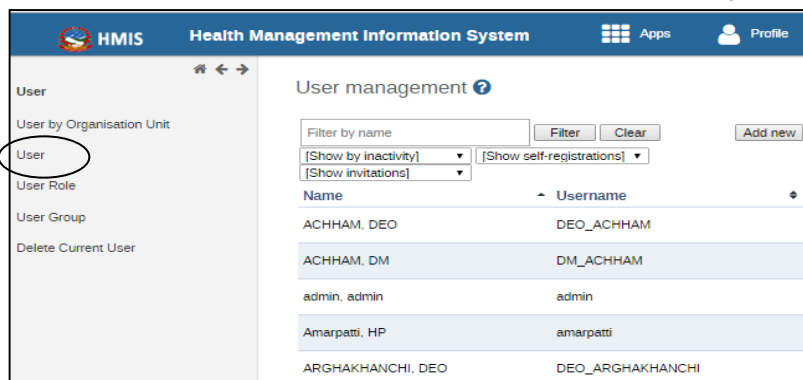
Organisational Hierarchy

The organisational hierarchy defines the organisation using the DHIS2, the health facilities, administrative areas and other geographical areas used in data collection and data analysis. This dimension to the data is defined as a hierarchy with one root unit (e.g. Ministry of Health) and any number of levels and nodes below. Each node in this hierarchy is called an organisational unit in DHIS2. The design of this hierarchy will determine the geographical units of analysis available to the users as data is collected and aggregated in this structure. There can only be one organisational hierarchy at the same time so its structure needs careful consideration. Additional hierarchies (e.g. parallel administrative groupings such as "Facility ownership") can be modelled using organisational groups and group sets, however the organisational hierarchy is the main vehicle for data aggregation on the geographical dimension. Typically national organisational hierarchies in public health have 4-6 levels, but any number of levels is supported. The hierarchy is built up of parent-child relations, e.g. a Country or MoH unit (the root) might have e.g. 5 parent units (Region), and each region again (at level 2) might have 9-19 districts as their children. Normally the health facilities will be located at the lowest level, but they can also be located at higher levels, e.g. VDC/Municipalities.
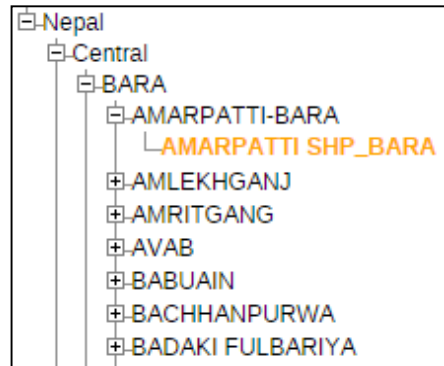
Add Organization Unit

Steps:

1. Click on App
2. Click on Organization Unit
3. Click on ADD New
4. Type Health Fcility Name, Short name and Opening Date (* is compulsory)
5. Click on Add

Data Elements

The Data Element is perhaps the most important building block of a DHIS2 database. It represents the "WHAT" dimension, it explains what is being collected or analysed. In some contexts this is referred to an indicator, but in DHIS2 we call this unit of collection and analysis a data element. The data element often represents a count of something, and its name describes what is being counted, e.g. "BCG doses given" or "Malaria cases". When data is collected, validated, analysed, reported or presented it is the data elements or expressions built upon data elements that describes the WHAT of the data. As such the data elements become important for all aspects of the system and they decide not only how data is collected, but more importantly how the data values are represented in the database, which again decides how data can be analysed and presented.

Data sets and data entry forms

All data entry in DHIS2 is organised through the use of Datasets. A Dataset is a collection of data elements grouped together for data collection, and in the case of distributed installs they also define chunks of data for export and import between instances of DHIS2 (e.g. from a district office local installation to a national server). Datasets are not linked directly to the data values, only through their data elements and frequencies, and as such a dataset can be modified, deleted or added at any point in time without affecting the raw data already captured in the system, but such changes will of course affect how new data will be collected. A dataset has a period type which controls the data collection frequency, which can be daily, weekly, monthly, quarterly, six-monthly, or yearly. Both which data elements to include in the dataset and the period type is defined by the user, together with a name, short name, and code. In order to use a dataset to collect data for a specific orgunit you must assign the orgunit to the dataset, and this mechanism controls which orgunits that can use which datasets, and at the same time defines the target values for data completeness (e.g. how many health facilities in a district expected to submit RCH data every month). A data element can belong to multiple datasets, but this requires careful thinking as it may lead to overlapping and inconstant data being collected if e.g. the datasets are given different frequencies and are used by the same orgunits.
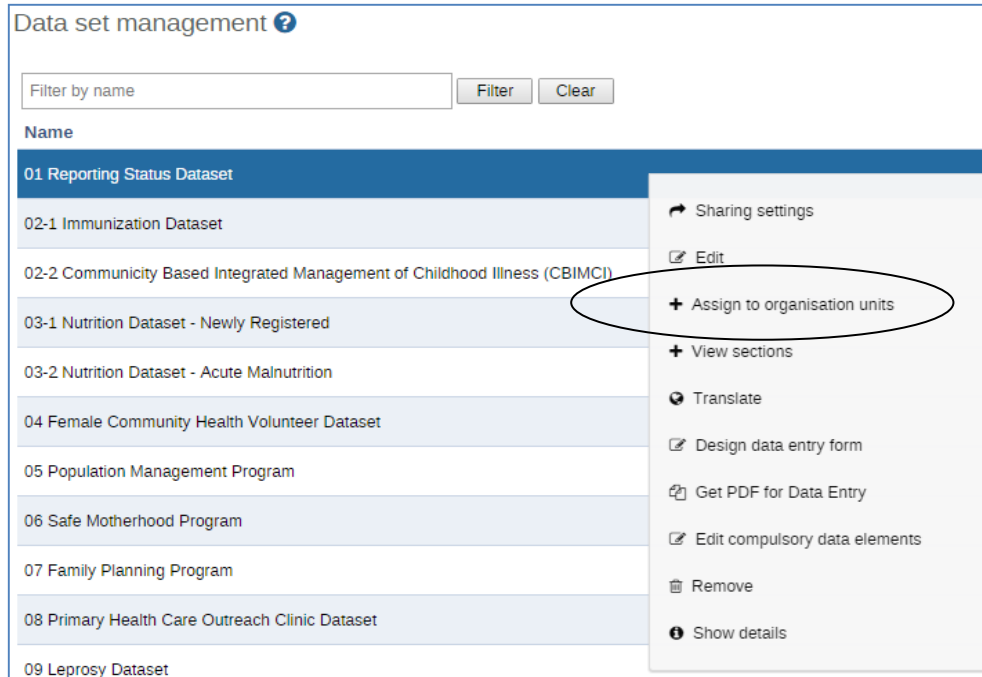
List of Proposed Data set in Nepal

- 01 Reporting Status Dataset
- 02-1 Immunization Dataset
- 02-2 Communicity Based Integrated Management of Childhood Illness (CBIMCI)
- 03-1 Nutrition Dataset - Newly Registered
- 03-2 Nutrition Dataset - Acute Malnutrition
- 04 Female Community Health Volunteer Dataset
- 05 Population Management Program
- 06 Safe Motherhood Program
- 07 Family Planning Program
- 08 Primary Health Care Outreach Clinic Dataset
- 09 Leprosy Dataset
- 10 Malaria
- 11-1 Tubercluosis Dataset
- 11-2 Tubercluosis Treatment Outcome Dataset
- 11-3 Tubercluosis PAL Dataset
- 11-4 DR Tubercluosis Control Program Dataset
- 12 Kala-azar Dataset
- 13-1 HIV Testing and Counseling Dataset
- 13-2 HIV Prevention of Mother-To-Child Transmission (PMTCT) Dataset
- 13-3 HIV Sexually Transmitted Infection Dataset
- 13-4 HIV Anteretroviral Tretment Dataset
- 13-5 HIV/AIDS Opportunistic Infections
- 14 Gender Equity and Social Inclusion Dataset
- 15-01 OPD: Communicable, Immunizable
- 15-02 OPD: Communicable, Vector/Water Borne
- 15-03 OPD: Other Communicable/ Infactions Diseases
- 15-04 OPD: Nutritional & Metabolic Disorder
- 15-05 OPD: Skin Diseases
- 15-06 OPD: Ear, Nose and Throat Infection
- 15-07 OPD: Oral Health Related Problems
- 15-08 OPD: Eye Problems
- 15-09 OPD: Obstetrics Complications/Gyne Problems
- 15-10 OPD: Mental Health related problems
- 15-11 OPD: Malignancy
- 15-12 OPD: Cardiovascular & Respiratory Related Problems
- 15-13 OPD: Other Diseases & Injuries
- 15-14 OPD: Orthopaedic Problems
- 15-15 OPD: Surgical Problems
- 16 Laboratory Services Dataset
- 17-1 Hospital Services Part 1 Dataset
- 17-2 Hospital Services Part 2 Dataset
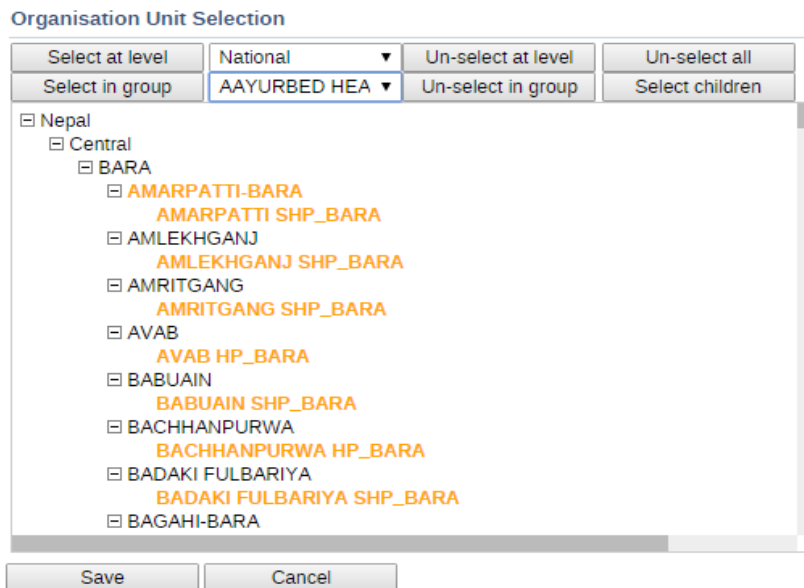- Target Population Dataset

Data Set Assignment with Organization unit

Steps

1. Click on App
2. Click on Data Sets

3. Click on required Data Set
4. Click on Assign to organization units
5. Select required Organisation Units
6. Click on Save

Data set management ❓

| Filter by name | Filter | Clear |

Name

01 Reporting Status Dataset

02-1 Immunization Dataset

02-2 Communicity Based Integrated Management of Childhood Illness (CBIMCI)

03-1 Nutrition Dataset - Newly Registered

03-2 Nutrition Dataset - Acute Malnutrition

04 Female Community Health Volunteer Dataset

05 Population Management Program

06 Safe Motherhood Program

07 Family Planning Program

08 Primary Health Care Outreach Clinic Dataset

09 Leprosy Dataset

- ➡ Sharing settings
- ✎ Edit
- ➕ Assign to organisation units
- ➕ View sections
- 🌐 Translate
- ✎ Design data entry form
- ⎘ Get PDF for Data Entry
- ✎ Edit compulsory data elements
- 🗑 Remove
- ℹ Show details

01 Reporting Status Dataset

Organisation Unit Selection

| Select at level | National ▼ | Un-select at level | Un-select all |
| Select in group | AAYURBED HEA ▼ | Un-select in group | Select children |

⊟ Nepal
  ⊟ Central
    ⊟ BARA
      ⊟ **AMARPATTI-BARA**
          AMARPATTI SHP_BARA
      ⊟ AMLEKHGANJ
          AMLEKHGANJ SHP_BARA
      ⊟ AMRITGANG
          AMRITGANG SHP_BARA
      ⊟ AVAB
          AVAB HP_BARA
      ⊟ BABUAIN
          BABUAIN SHP_BARA
      ⊟ BACHHANPURWA
          BACHHANPURWA HP_BARA
      ⊟ BADAKI FULBARIYA
          BADAKI FULBARIYA SHP_BARA
      ⊟ BAGAHI-BARA

| Save | Cancel |

Data entry

Data entry forms Once you have assigned a dataset to an orgunit that dataset will be made available in Data Entry (under Services) for the orgunits you have assigned it to and for the valid periods according to the dataset's period type. A default data entry form will then be shown, which is simply a list of the data elements belonging to the dataset together with a column for inputting the values. If your dataset contains data elements with categories such as age groups or gender, then additional columns will be automatically generated in the default form based on the categories. In addition to the default list-based data entry form there are two more alternatives, the section-based form and the custom form.

DHIS 2 lets you capture aggregate data on a variety of devices - it even works offline. If Internet connectivity drops during capture, data will be stored locally in the browser and you can continue working as before. When connectivity is back you can push data up to the online server. DHIS 2 can generate data entry forms automatically based on your data model, or you can design highly customized forms to cater for special needs. You can define auto-calculated fields inside the form, logical validation rules and set min and max values to improve data quality.

Data entry

Data entry with DHIS2

To open the data entry window hover over the Apps button. A drop down menu will appear listing the apps provided by DHIS 2. Click on the Data Entry option. The data entry module is where aggregated data is manually registered in the DHIS 2 database. Data is registered for an organisation unit, a period, and a set of data elements (data set) at a time. A data set often corresponds to a paper based data collection tool.
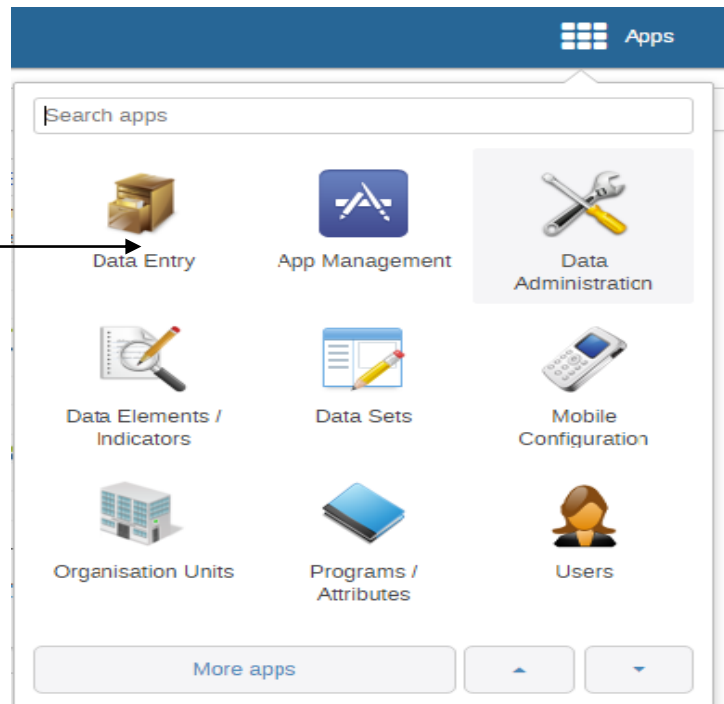
Selecting the data entry form

To start entering data the first step is to open the correct form by following these steps:

1. Locate the orgunit you want to register data for in the tree menu to the left. Expand and close branches by clicking on the +/- symbols. A quick way to find an orgunit is to use the search box just above the tree (the green symbol), but you need to write in the full name to get a match.
2. Select a data set from the dropdown list of data sets available to your selected orgunit.

3. Select a period to register data for. The available periods are controlled by the period type of the data set (reporting frequency). You can jump a year back or forward by using the arrows above the period.

By now you should see the data entry form. From a form design perspective, there are three types for forms: default forms, section forms and custom forms. If a custom form exists, it will be displayed, followed in order of precedence by a section form, and finally a default form. Data entry Entering data

Entering data
Start entering data by clicking inside the first field and type in the value. Move to the next field using the Tab button. Shift+Tab will take you back one step. You can also use the "up" and "down" arrow keys, as well as the Enter key, to navigate between the form cells. The values are saved immediately and do not require to be saved at a later stage. A green field indicates that the value has been saved in the system (on the server).

Editing and deleting Data
If you wish to enter data which has already been entered, simply replace the data entry value with the update values. If you want to delete a data value completely, you should select the value of interest, and press "Delete" on your keyboard. If you enter a zero and the data element has been configured to not store zeros, the previous data value (i.e. the one you wish to modify) will not be overwritten with the new value. Therefore, it is better practice to delete the data value completely (waiting for the cell to turn green) and then to enter the new value.

Off-line data entry

The data entry module will function even if during data entry the Internet connectivity is not stable. In order to utilize this functionality, you must login to the server while Internet connectivity is present, but if during data entry, the Internet link between your computer and the server becomes unstable, data can still be entered into the data entry form, saved to your local computer, and then pushed to the server once the Internet connectivity has been restored. Data can be entered and stored locally while being off-line and uploaded to the central server when on-line. This means that the on-line deployment strategy will be more viable in areas with unstable Internet connectivity. The total bandwidth usage is greatly reduced since forms no longer are retrieved from the server for each rendering. When the server is able to be reached through the Internet connection, a message is displayed at the top of the data entry screen below.
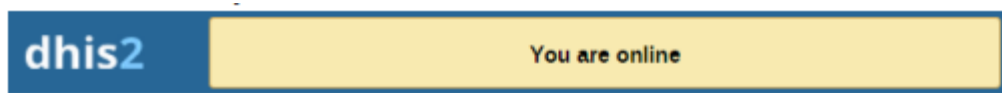
If the Internet connection should disconnect for some reason during the data entry process, this will be detected by the application, and you will be informed that your data will be stored locally.
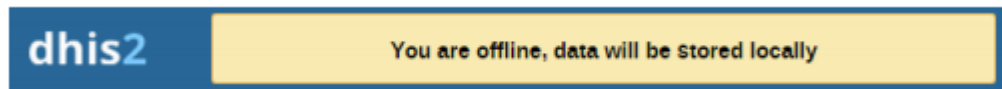
Data entry Multi-organisation unit data entry 12 Data entry can proceed as normal. Once you have entered all of the necessary data, and the application detects that the server is back on-line, you will be informed that you have data which needs to be synchronized with the server.
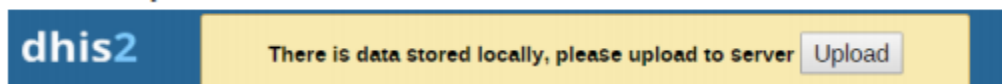
Once the data has successfully synchronized with the server, you will receive a confirmation message that the data has been successfully uploaded to the server.
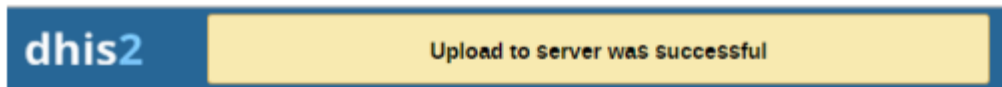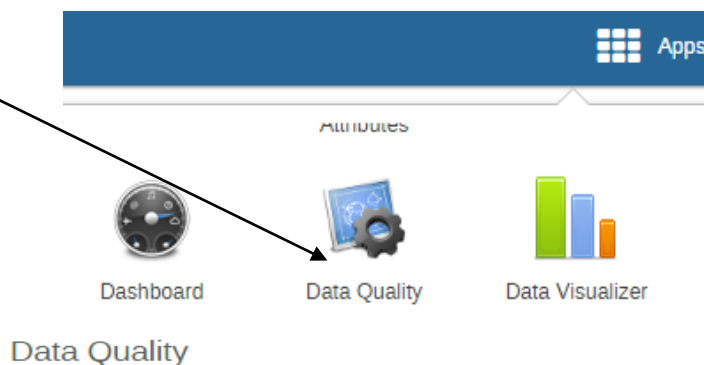
Validation rules

Once you have set up the data entry part of the system and started to collect data then there is time to define data quality checks that help to improve the quality of the data being collected. You can add as many validation rules as you like and these are composed of left and right side expressions that again are composed of data elements, with an operator between the two sides. Typical rules are comparing subtotals to totals of something. E.g. if you have two data elements "BCG Immunized" and "BCG vaccine expinduture" then you know that in the same form (for the same period and organisational unit) the total number of tests must always be equal or higher than the number of positive tests. These rules should be absolute rules meaning that they are mathematically correct and not just assumptions or "most of the time correct". The rules can be run in data entry, after filling each form, or as a more batch like process on multiple forms at the same time, e.g. for all facilities for the previous reporting month. The results of the tests will list all violations and the detailed values for each side of the expression where the violation occurred to make it easy to go back to data entry and correct the values.

Steps:

1. Click on Data Quality
2. Click on Validation Rule
3. Click on Add New
4. Type Name, Description, Instruction
5. Select Importance (Medium, High, Low)
6. Select Period type
7. Select Operator
8. Click on Edit left/Right side
9. Type left/Right side Description
10. Select required Data Element
11. Click on Save, Save

Validation Rule
Add, modify, view and delete validation rules. Anomalies can be discovered by running validation rules against the data.

Validation Rule Group
Add, modify, view and delete validation rule groups. Provides the ability to group and run validation rules together.

Validation Rule Analysis
Run validation rules in order to unveil anomalies and errors in the data in the database.

Std Dev Outlier Analysis
Analyze potential outlier values based on standard deviations. Outlier values can be examined and marked for follow-up.

Min-Max Outlier Analysis
Analyze potential outlier values based on min and max values. Outlier values can be examined and marked for follow-up.

Follow-Up Analysis
View or edit data values marked for further follow-up during data entry or analysis.

Sample of validation rule using in Nepal

- Current users of IUD reported less than the new users of the IUD

- Current users of Depo reported less than the new users of the Depo

- Current users of pills reported less than the new users of the pills

- Delivery by C/S exceeds the total delevery by SBA at health facility

- Delivery by Spontaneous exceeds the total delevery by SBA at health facility

- Delivery by Vacuum exceeds the total delevery by SBA at health facility

- Family planning user exceeds no. of safe abortion cases Medium

- FHS-HP/SHP Total OPD should be less than FHS reported data

Individual data records / Tracker

DHIS 2 enables you to collect, manage and analyse transactional, case-based data records. It lets you store information about individuals and track these persons over time using a flexible set of identifiers. You can capture information about anonymous events and cases as well. DHIS 2 lets you configure SMS-reminders, track missed appointments and generate visit schedules. You can create dynamic reports based on cases and generate on-the-fly statistical reports. For all programs you can easily create statistics and summaries on participation and completeness.

The DHIS 2 Tracker is an extension of the DHIS 2 platform and supports management, data collection, and analysis of transactional or disaggregated data. The Tracker shares the same design concepts as the overall DHIS 2 - a combination of a generic data model and flexible metadata configuration through the user interface that allows for rapid customization to meet a wide range of use cases.

Common for all the use cases is that the transactional data can be easily aggregated and fed into the main aggregated data warehouse in the same DHIS 2 system, making complicated inter-operability setups redundant.

In addition to being a powerful HMIS tool for following up health programs, DHIS2 Tracker is also a simple tool for sharing critical clinical health data across multiple health facilities. The DHIS 2 tracker currently does not aim at becoming an advanced EMR system to support clinical care, but rather a basic transactional system that is easy to set up and that builds on an existing and proven platform and available technical capacity. On a national level, one may wish to combine the use of DHIS Tracker for some facilities with more advanced EMR systems for other facilities.

Key features

- Collect transactional data - set up automated aggregation queries - populate the aggregated data warehouse directly - all in one system!
- Enroll individuals into longitudinal and chronic programs - schedule visits - set up automated SMS reminders - track missed appointments - improve retention.
- Define your own programs with stages - decide what to collect at each stage - all through the user interface.
- Generate daily or weekly visit schedules (work plans) for your facility or community health workers.
- Tools for tracking and following up patients who do not come to scheduled visits.
- Collect detailed ICD-10 codes for inpatient admissions and deaths to enhance data analysis of morbidity and mortality.
- Set up detailed maternal or neonatal death audits - analyse your data using the tabular reports with both case-based data and ad-hoc aggregation.
- Collect detailed health facility surveys (e.g WHO's SARA) - link to aggregated indicators - analyse your results on maps, dynamic charts, and pivot tables
- Collect data using mobile phones - online in web browser or offline with java clients

Pivot Table

DHIS 2 features a fully web-based pivot table which lets you analyse data along all data dimensions and arrange these on columns, rows and as filters at demand. You can include totals and subtotals and remove empty rows, and control display density, font size and digit group separator. Pivot tables can be saved as favorites and be downloaded and used as basis for offline MS Excel pivot tables.

How to use Pivot table module

<u>**Step one**</u>

Click on the Pivot Table Icon
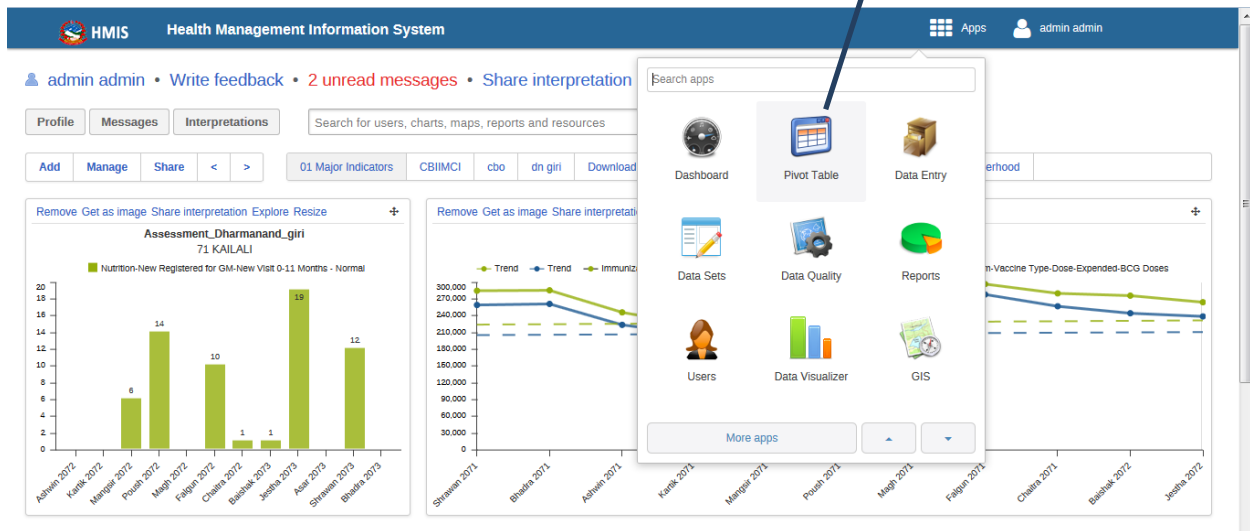
The following screen will after clicking on the "Pivot Table" icon
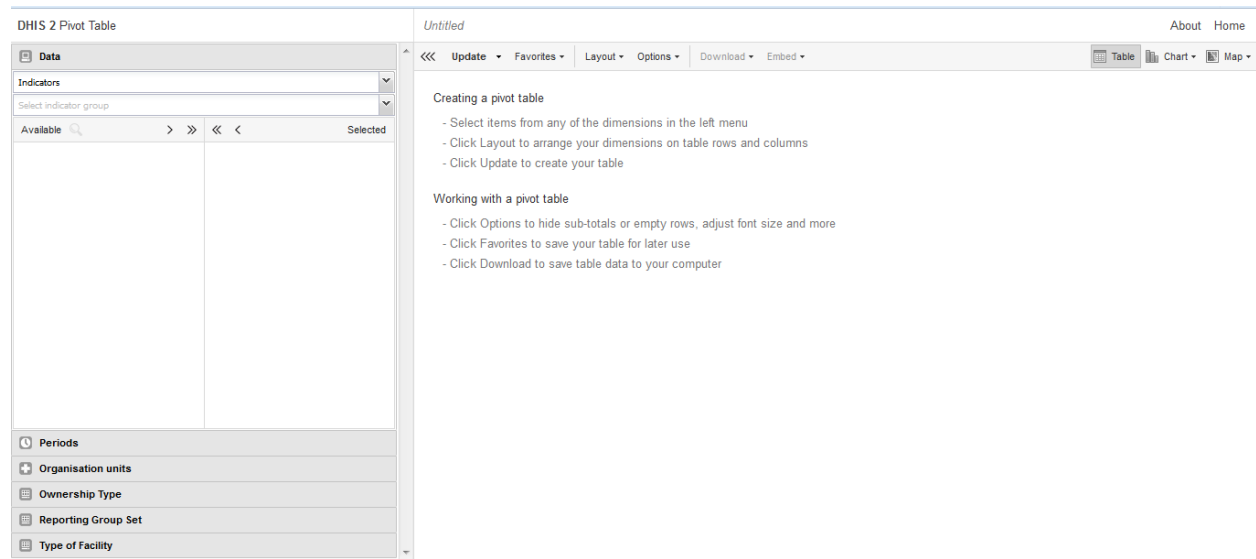
Step two
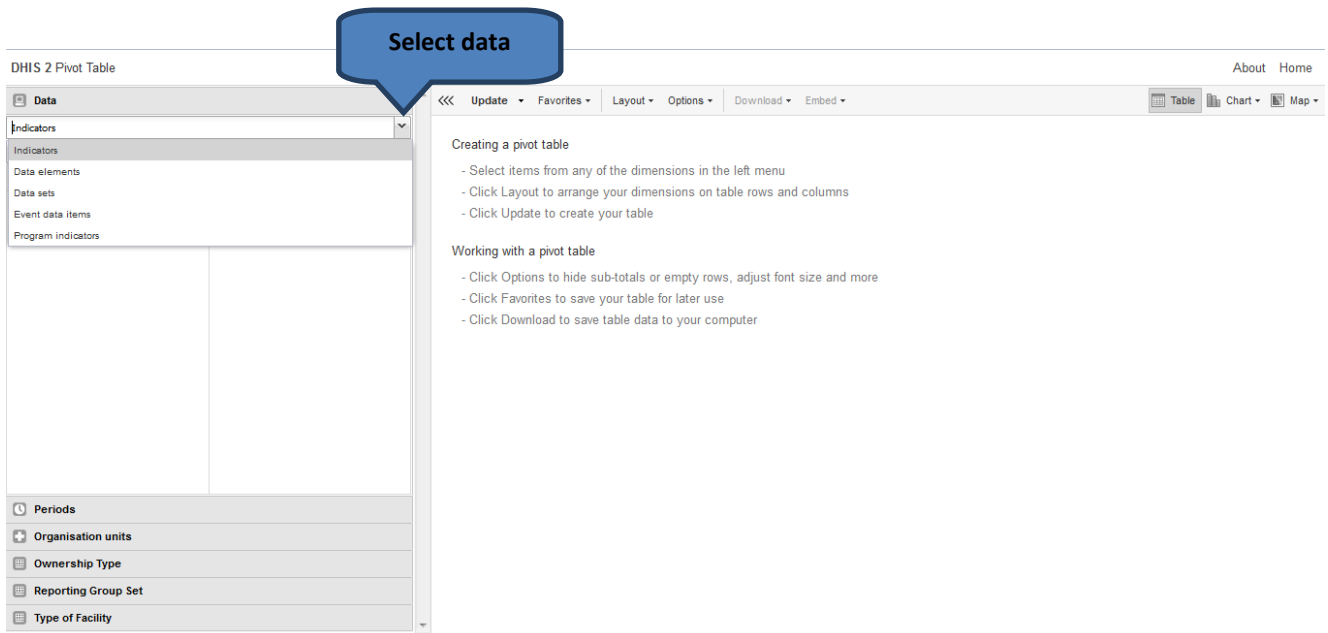
After clicking bellow data section you will see 5 options.

1. Indicators – If you want to analyze or create report based on indicator then select this option.

2. Data Element – If you want to analyze or create report based on data element then select this option.

3. Reporting Rates – If you want to analyze or create report based on the reporting status then select this option.

4. Event data items – If you want to analyze or create report based on event data collected through event capture then select this option.

5. Program Indicators – If you want to analyze or create report based on program indicator then select this option.

Step three

After selecting data element option, the next step is to select the data element group. You will see the list of data elements group after selecting data element option. From this you have to select the group by which you want to analyze or create report. As an example we have selected the 'Immunization' data element group.
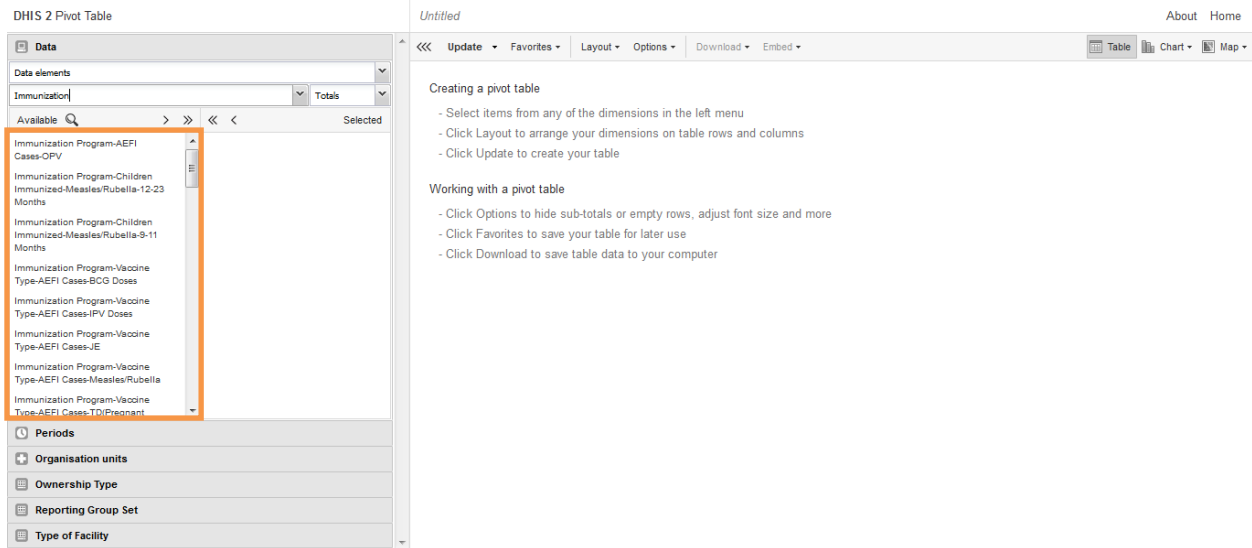
After selecting the group you will see the list of data elements under that group. Please select necessary data elements by which you will create report. In the left side pane, you will see the list of the data elements. Please move the necessary data elements from left side to right side pane by double clicking on one data element or by clicking this icon (>). If you want to select all of the data element then please click on this icon (»).
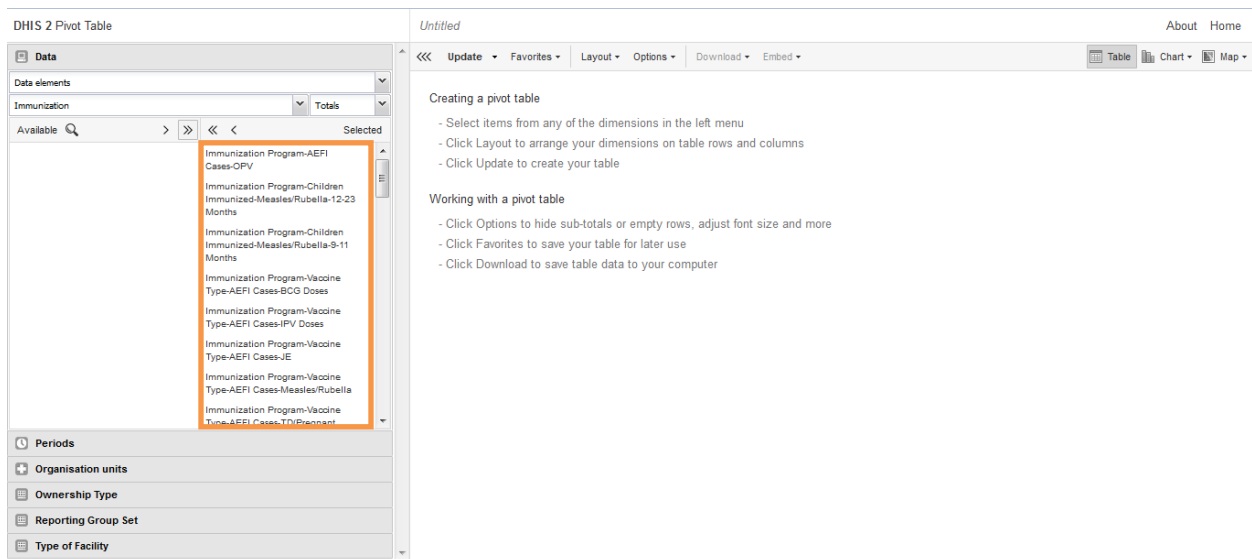
As an example we have selected all the data element under Immunization group.

Step four
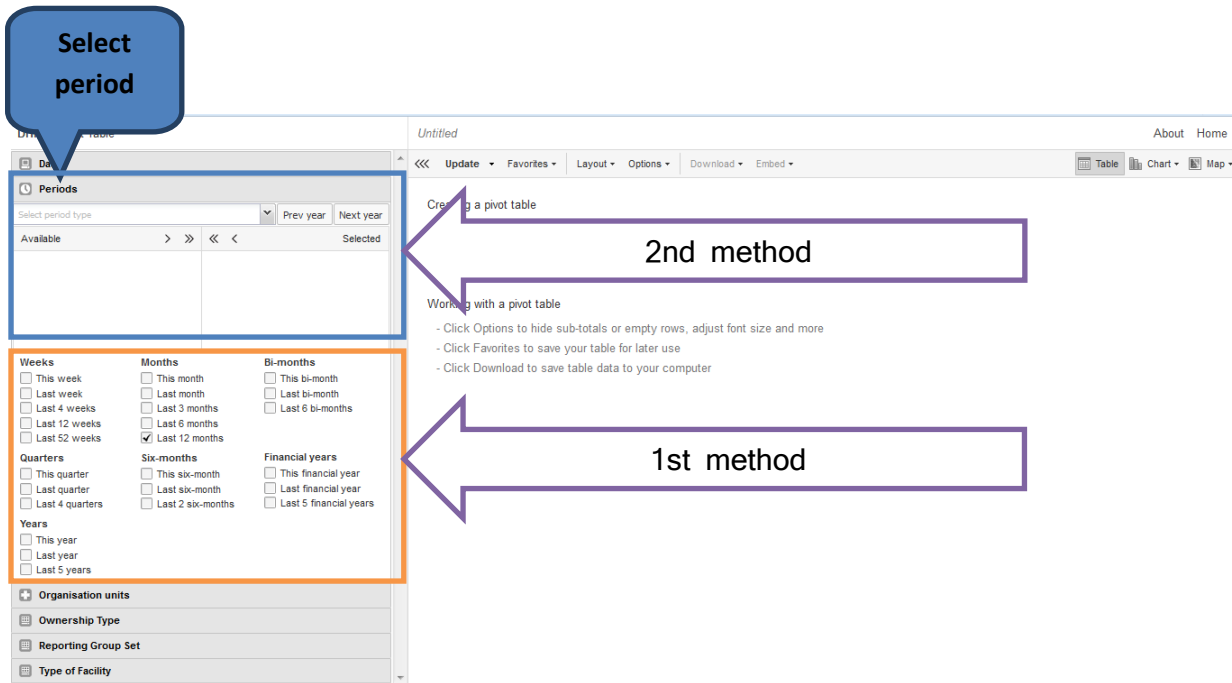
In this step you have to select period. There are 2 ways to select periods.

1st method: you will see a list of specific periods mentioned. Please select according to your criteria. If you want to create a report which will always show the last data then please follow this method.

2nd method: If you want to create report with fixed period then please follow this method. Please follow the steps bellow to create report using this method.
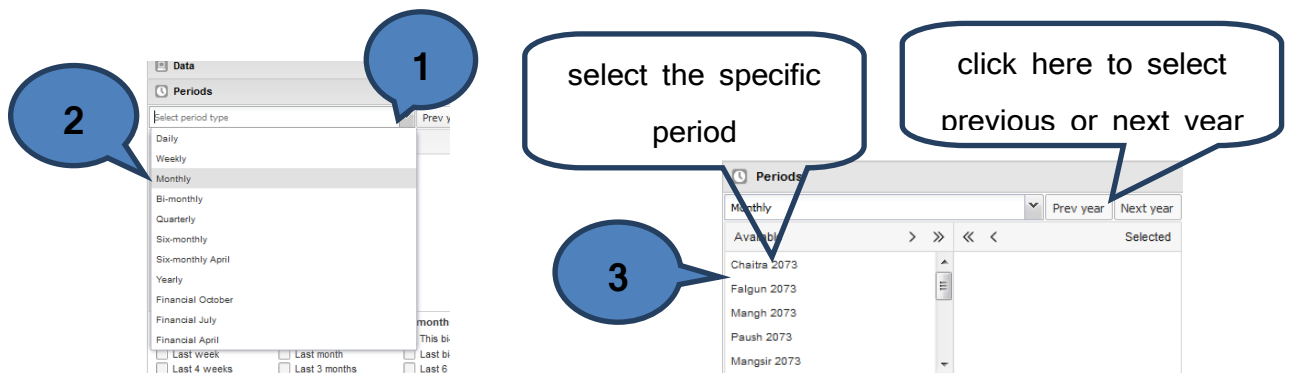
Step five

Please select according the steps described bellow.
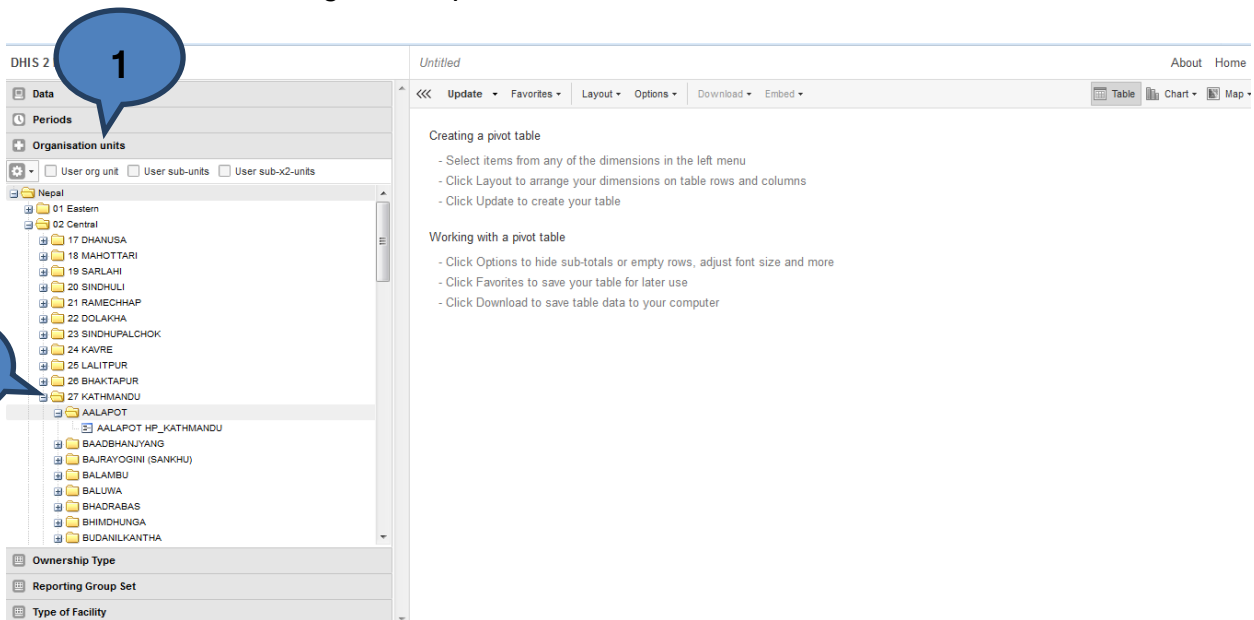
1. Click on "Organisation Unit".
2. Select necessary organization.
3. Selection mode.
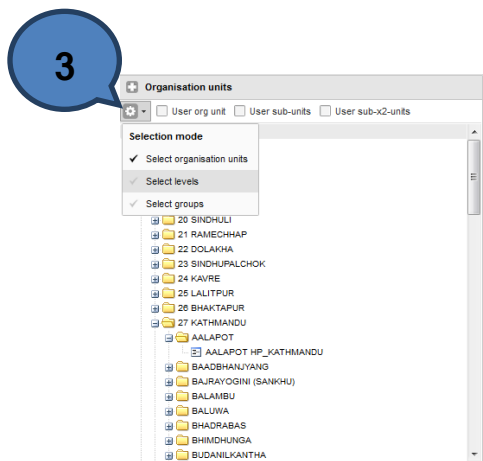
if you click on this icon (⚙ ▾), you will see three option.

a. Select organization unit – if you select this option then you will see the data from that selected organization unit and also the aggregated value of the organization units under the unit.

b. Select levels – if you select this option then you will see the data from that selected organization unit and also the aggregated value of the organization units under the unit.

c. Select groups – if you select this option then you will see the data from that selected organization unit and also the aggregated value of the organization units under the unit.

Screenshot of three options has been given bellow.

Select organization unit – if you select this option then you will see the data from that selected organization unit and also the aggregated value of the organization units under the unit.
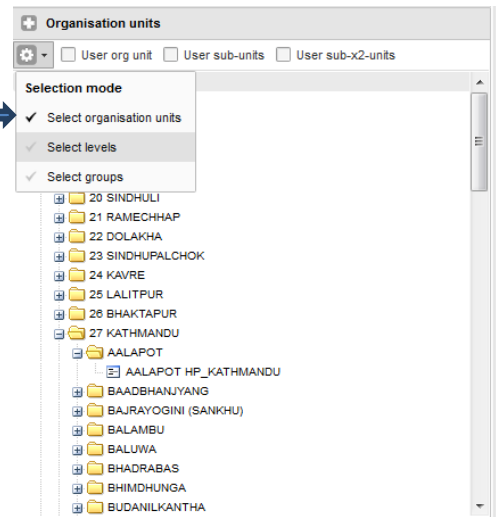
Select levels – if you select this option then you will see the data from that selected organization unit and also the aggregated value of the organization units under the unit.
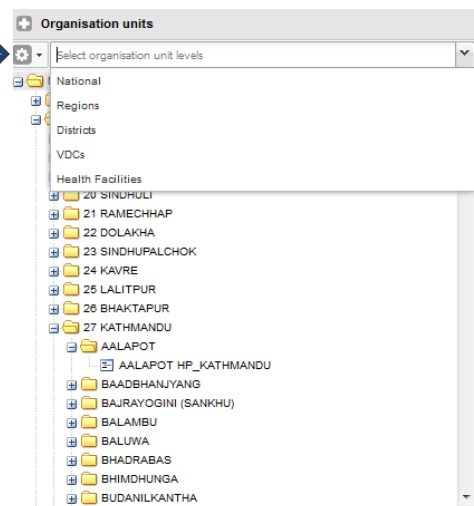
Select groups – if you select this option then you will see the data from that selected organization unit and also the aggregated value of the organization units under the unit.

Step six

Please click on the "update" button to see the report.

If you want to organize the report according to your need then please follow the steps bellow;

Click

You can organize your report based on organization unit / period / data. To do that please click on the item, hold the mouse

Click

Another functionality of Pivot table module is "Option". From this function you can formate the report as per your need. You can show/hide totals or change the style of the report from this function.
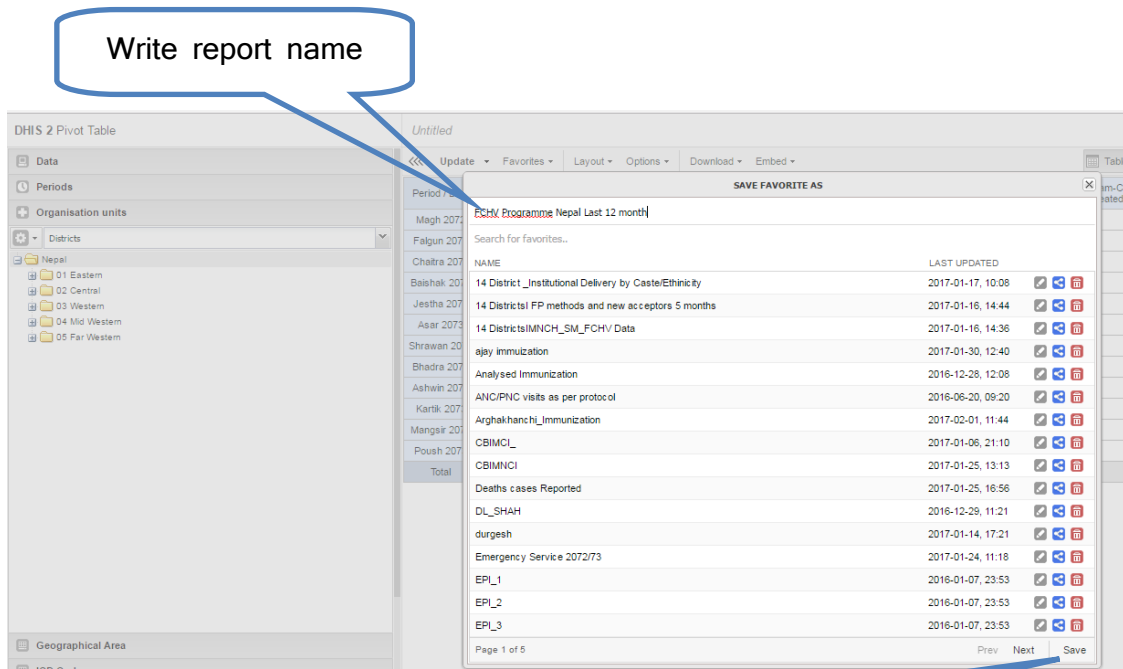
Step seven (Save/Open/Update/Rename the report)

After generating the report it is very important to save the report for future use.

DHIS 2 Pivot Table — Immunization 2071-72 — Click

Organisation unit	Immunization Program-Children Immunized-Measles/Rubella-9-11 Months	Immunization Program-Vaccine Type-Children Immunized-3 dose completion of DPT-HepB-Hib&OPV after 1 year	Immunization Program-Vaccine Type-Children Immunized-BCG Doses	Immunization Program-Vaccine Type-Children Immunized-JE	Immunization Program-Vaccine Type-Dose-Children Immunized-PCV-1st	Immunization Program-Vaccine Type-Dose-Children Immunized-PCV-2nd	Immunization Program-Vaccine Type-Dose-Children Immunized-PCV-3rd	Total
01 TAPLEJUNG		2 545	396	2 861		822	442	285	7 484
02 PANCHTHAR		3 789	578	4 010		1 474	1 043	520	11 714
03 ILAM		5 047	632	5 251		1 292	742	53	13 119
04 JHAPA		17 001	2 848	18 370	14 448	3 825	2 755		60 181
05 MORANG		19 808	1 795	23 375	17 476	5 183	4 083	3 695	76 434
06 SUNSARI		15 819	1 324	16 620	12 786	4 225	2 579	1 734	55 928
07 DHANKUTA	22	3 169	54	3 200		1 068	664	358	8 535
08 TERHATHUM	50	1 864	46	2 032		452	284	62	4 790
09 SANKHUWASABHA	1 080	3 259	265	3 307		1 032	452	194	9 589
10 BHOJPUR	145	3 380	90	3 572		774	420	79	8 460
11 SOLUKHUMBU	88	1 809	92	1 822	4	365	311	219	4 710
12 OKHALDHUNGA	50	2 629	134	2 824		650	359	176	6 822
13 KHOTANG	95	3 837	288	4 002		1 085	756	476	10 539
14 UDAYAPUR	246	6 894	499	7 486	5 924	1 479	960	420	23 908
15 SAPTARI	495	13 665	1 391	14 436	10 641	3 639	2 165	1 515	47 947
16 SIRAHA	225	12 637	1 228	15 402	9 363	2 304	1 187	1 006	43 352
17 DHANUSA	813	15 423	1 812	20 101	10 816	251	94	488	49 798
18 MAHOTTARI	396	13 458	1 930	14 086	10 648	700	419	1 304	42 941
19 SARLAHI	1 010	13 022	2 201	15 358	9 882	477	77	300	42 327

202.70.86.2/hmis/dhis-web-pivot/#

How to "Save" report

- Click "Favorites" -> "Save"

DHIS 2 Pivot Table — Untitled — Click

- Provide a name to the report. There is a naming standard to follow while saving any report. There are three part in the name, what, where and when. First mention what data is being presented in the report then mention about the organization unit and then about the period. For example, Immunization Nepal 2071-72. After that click on the save button.

Write report name

Click here to save the

How to "Open" report

Type here to search for any

Click on the report to open

Click "Open"

How to "Rename" report

Click "Rename"
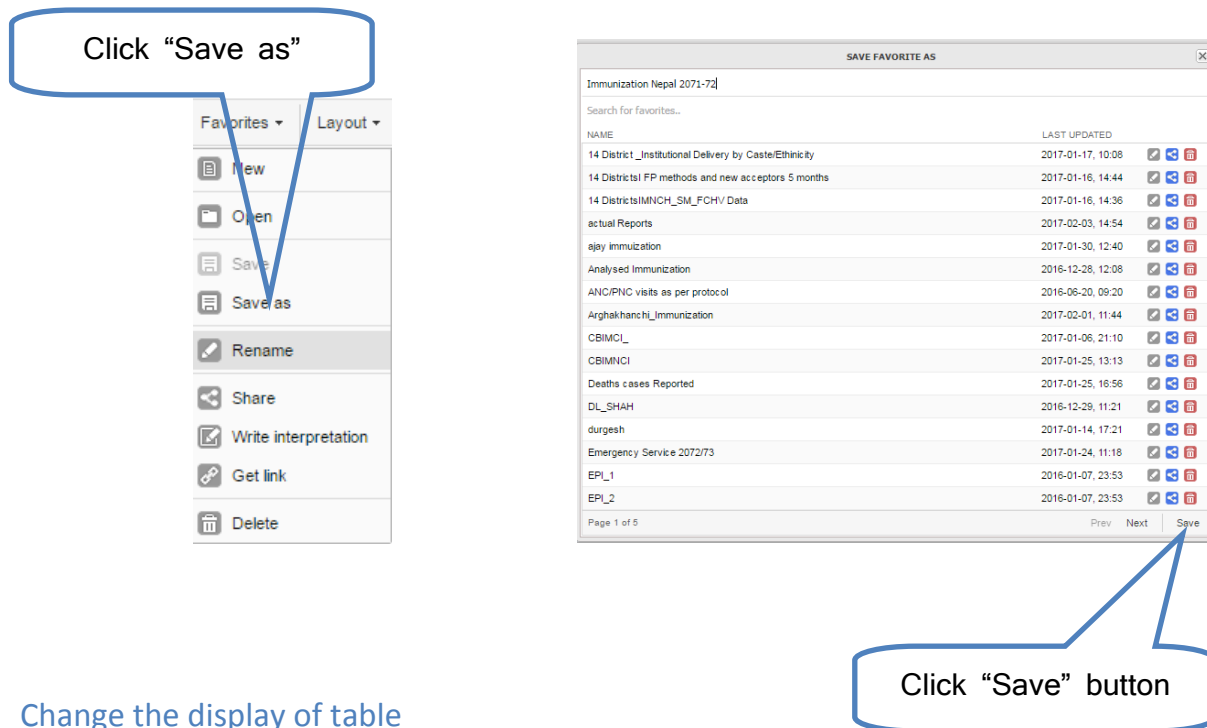
Correct the name here

RENAME FAVORITE

Immunization Nepal 2071-72

Cancel   Rename

How to "Update" report

Click "Save as"

Click "Save" button
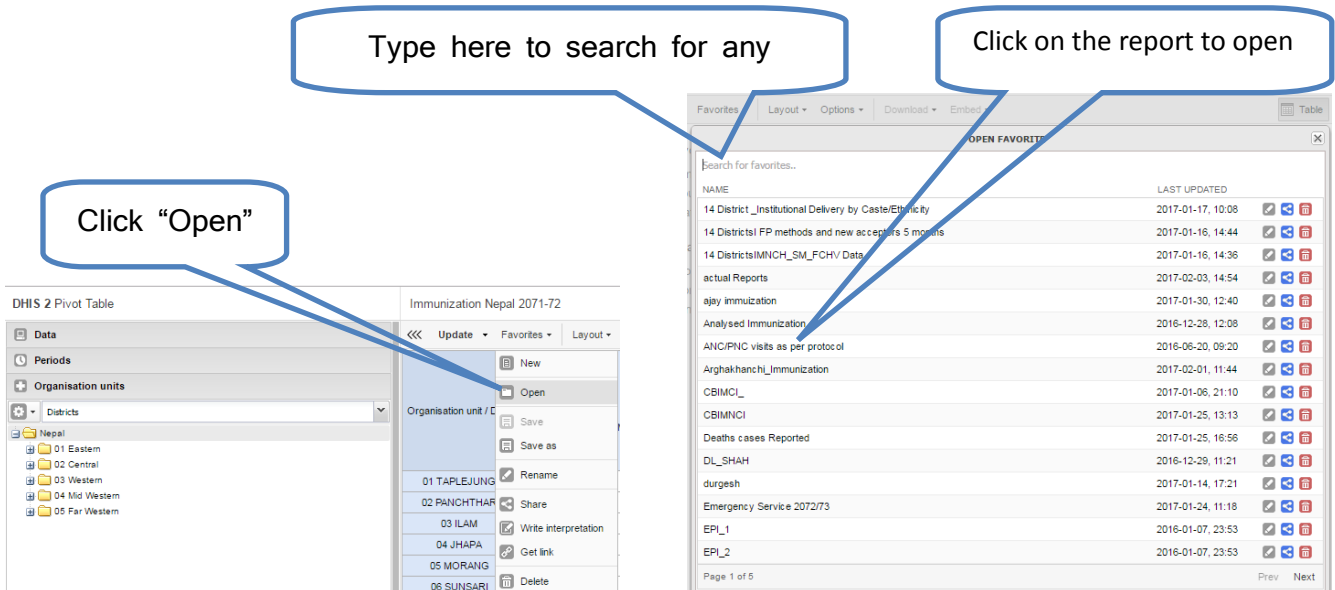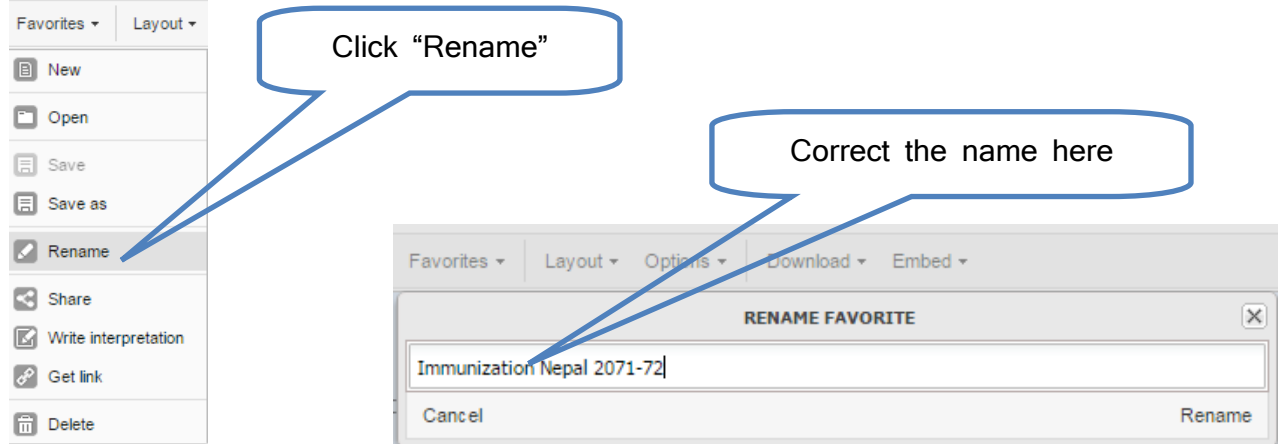
Change the display of table

1. Click Options.

2. Set the options as required.

Show column/Row totals

Show row totals Displays total values in the table for each row and column, as well as a grand total for all values in the table.

Show column sub-totals

Show row sub-totals Displays subtotals in the table for each dimension. In the screenshot above, notice how subtotals are generated for each of the periods in the period dimension. If you only select one dimension, subtotals will be hidden for those columns or rows. This is because the values will be equal to the subtotals.

Show dimension labels

Shows the dimension names as part of the pivot tables.

Hide empty rows

Hides empty rows from the table, which is useful when looking at large tables where a big part of the dimension items do not have data in order to keep the table more readable.

Skip rounding

Skips the rounding of data values, offering the full precision of data values. Can be useful for finance data where the full dollar amount is required.

Aggregation type

The default aggregation operator can be over-ridden here, by selecting a different aggregation operator. Some of the aggregation types are Count, Min and Max.

Show hierarchy

Shows the name of all ancestors for organisation units, for example "Sierra Leone / Bombali / Tamabaka / Sanya CHP" for Sanya CHP. The organisation units are then sorted alphabetically Using the Pivot Table app Manage pivot table favorites 26 Option Description which will order the organisation units perfectly according to the hierarchy.

Include only completed events

Includes only completed events in the aggregation process. This is useful for example to exclude partial events in indicator calculations.

Display density

Controls the size of the cells in the table. You can set it to "comfortable", "normal" and "compact". The "compact" option is handy in order to fit large tables into the browser screen.

Font size

Controls the size of the table text font. Can be set to "large", "normal" and "small". Digit group separator Controls which character to separate groups of digits or "thousands". Can be set to "comma", "space" and "none". Legend set Shows a colour indicator next to the values. Currently the GIS legend sets are being used.

Manage pivot table favorites

Save a pivot table as a favorite To save a pivot table as a favorite:

1. Click Favorites > Save as.

2. In the text field, enter the name you want to give your pivot table.

3. Click Save.

Open a favorite

1. Click Favorites > Open.

2. Find and click the favorite you want to open. You can either use Prev and Next or the search field to find a saved favorite.

Rename a favorite

1. Click Favorites > Rename.

2. In the text field, enter the new name you want to give your pivot table.

3. Click Rename.

Share an interpretation of a favorite

For certain analysis-related resources in DHIS2, you can share a data interpretation. An interpretation is a link to the relevant resource with a description of the data. To create an interpretation of a pivot table and share it with all users of the system:

1. Click Favorites > Write interpretation.

2. In the text field, type a comment, question or interpretation.

3. Click Share.

You can see the interpretation on the Dashboard.

 Modify sharing settings for a favorite

After you have created a pivot table and saved it as a favorite, you can share the favorite with everyone or a user group:

1. Click Favorites > Share.

2. In the text field, enter the name of the user group you want to share your favorite with and click the + icon.

The chosen user group is added to the list of recipients. Repeat the step to add more user groups.
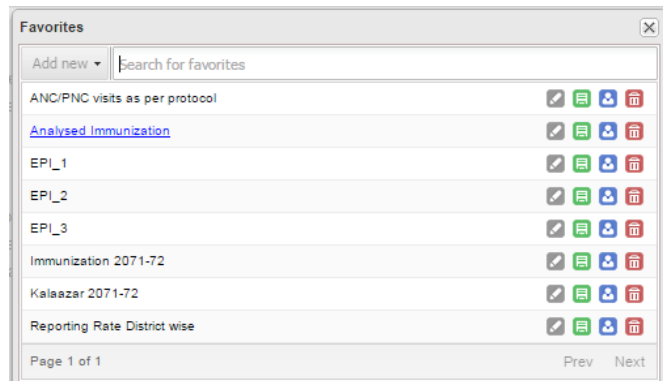
3. If you want to allow external access, select the corresponding box.

4. For each user group, choose an access setting. The options are:

• None

• Can view

• Can edit and view

5. Click Save.

Download data from a pivot table

Download table layout data format To download the data in the current pivot table:
1. Click Download.
2. Under Table layout, click the format you want to download: Microsoft Excel, CSV or HTML. The data table will have one column per dimension and contain names of the dimension items
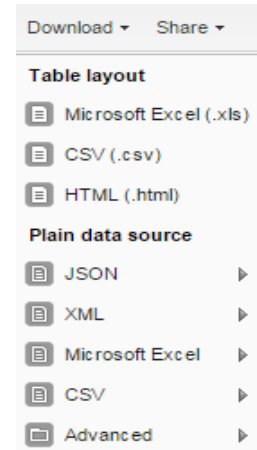
Charts/Graph

DHIS 2 provides nice charting capabilities. It supports all the standard chart types like column, line, pie, stacked column and area charts. You can display trend lines, legends, titles, labels, target lines and baselines. Select easily from all of your indicators, organizational units, time periods and other dimensions, and flip categories and series around as you like. Charts can be saved as favorites and shared. You can write interpretations of your chart data and discuss with colleagues. Charts can be downloaded as images and PDFs.
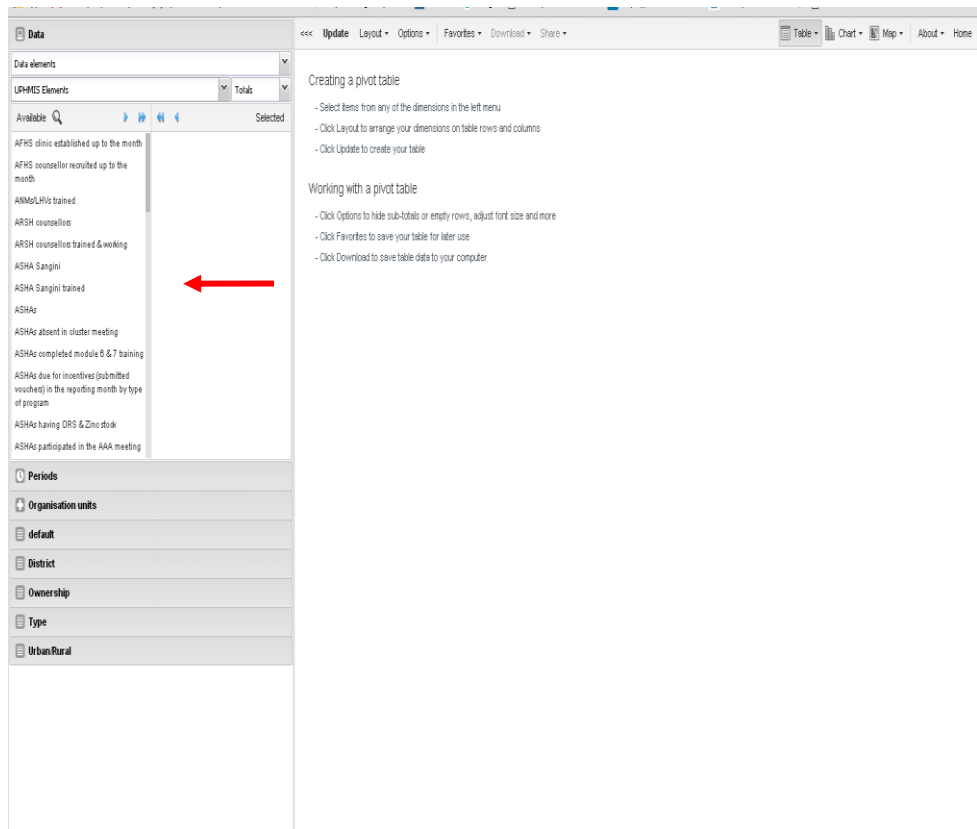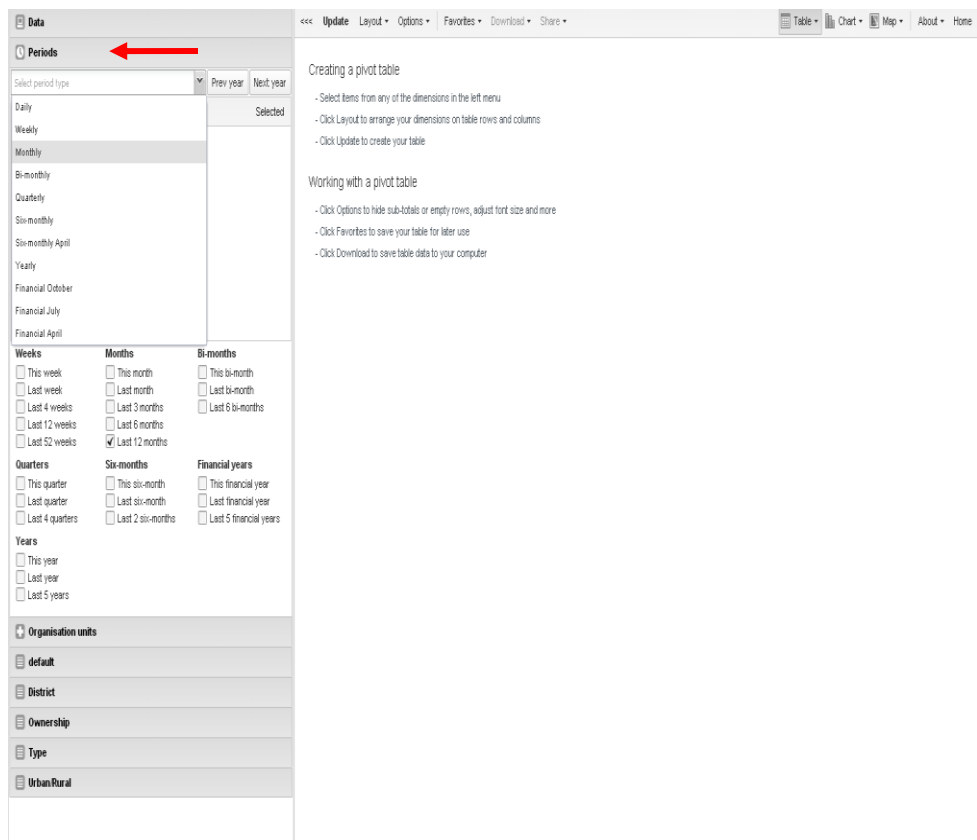
1.Select Visualizer from Apps tab as shown on right
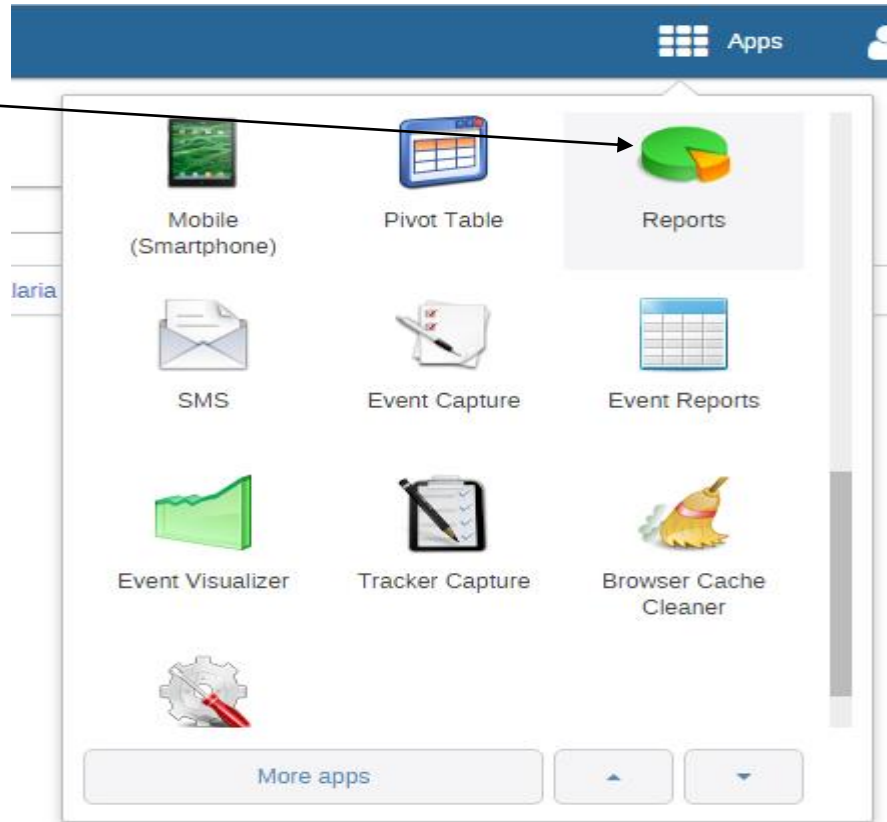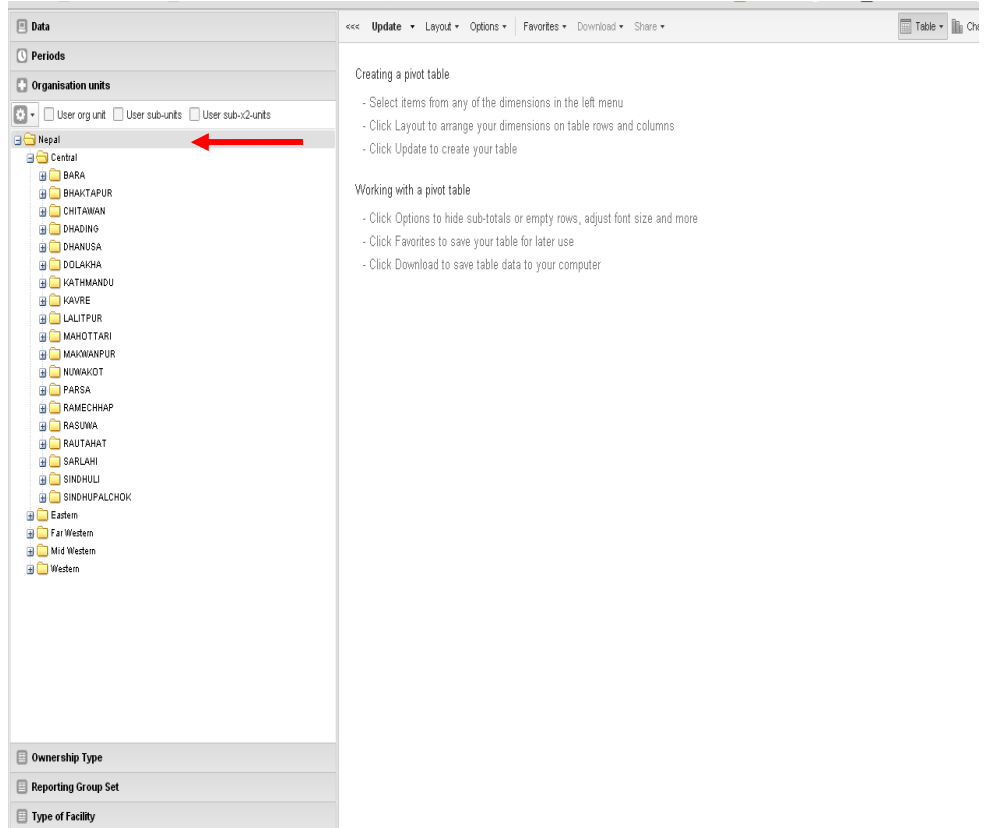

2.Select indicator or data element from Data tab
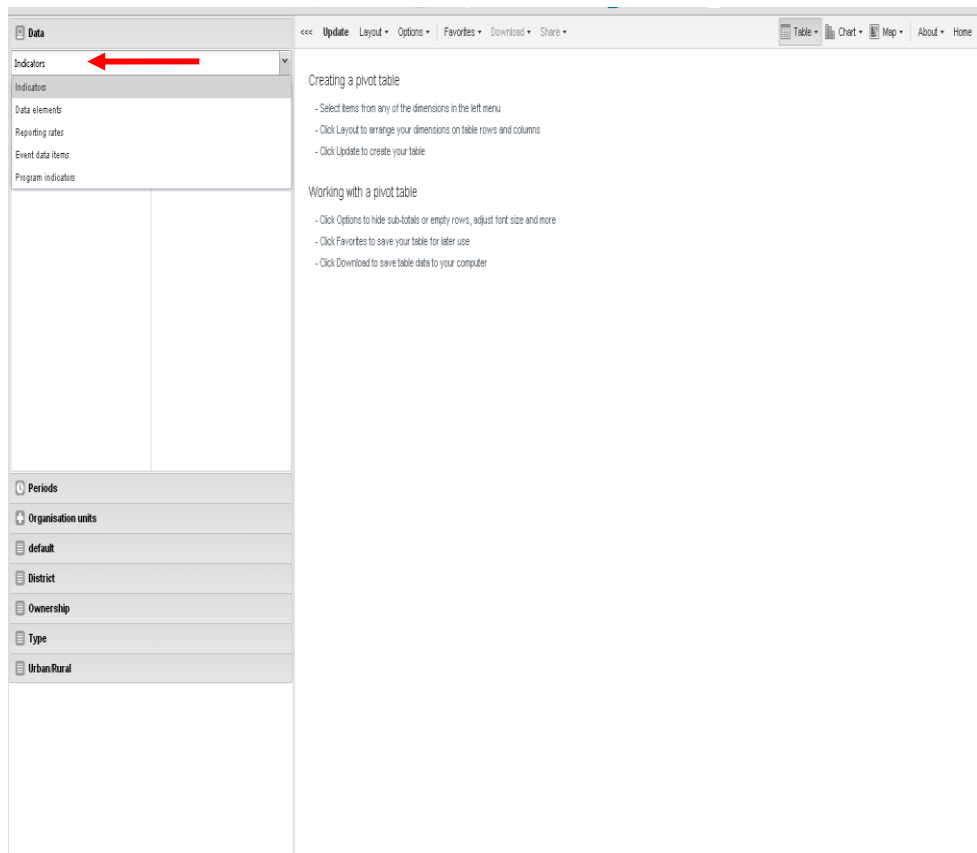
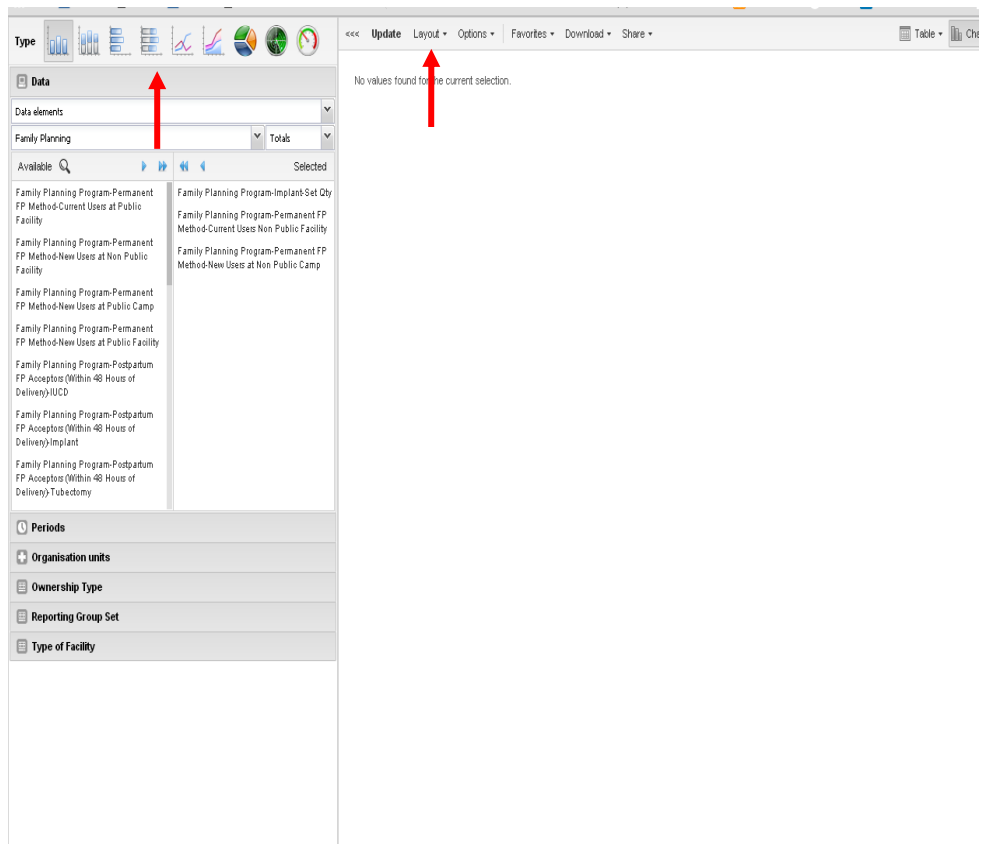3.Select type of indicator or data element from drop down list

4.Select type of period for which you want to do analysis eg. yearly, monthly etc

5.Select organization unit for which you need to do analysis

6.Select update tab to generate the graph. Layout of particular data can be changed by clicking on layout tab next to update

GIS

DHIS 2 features awesome web-based GIS features that lets you do thematic mapping of areas and points, view facilities based on classifications, visualize catchment areas for each facility. You can define custom legend sets and link them to indicators. The DHIS 2 GIS lets you put labels on areas and points and search and filter based on various criteria. You can overlay multiple layers and use Google Maps as background layer. You can move points and set locations on-the-fly. Maps can be saved as favorites and shared with other people.

All you need to do is selecting your desired indicator/data element-period-map combination, then the organisation unit level and finally the parent to define the boundary. If your database has coordinates for these organisation units they will appear on the map.
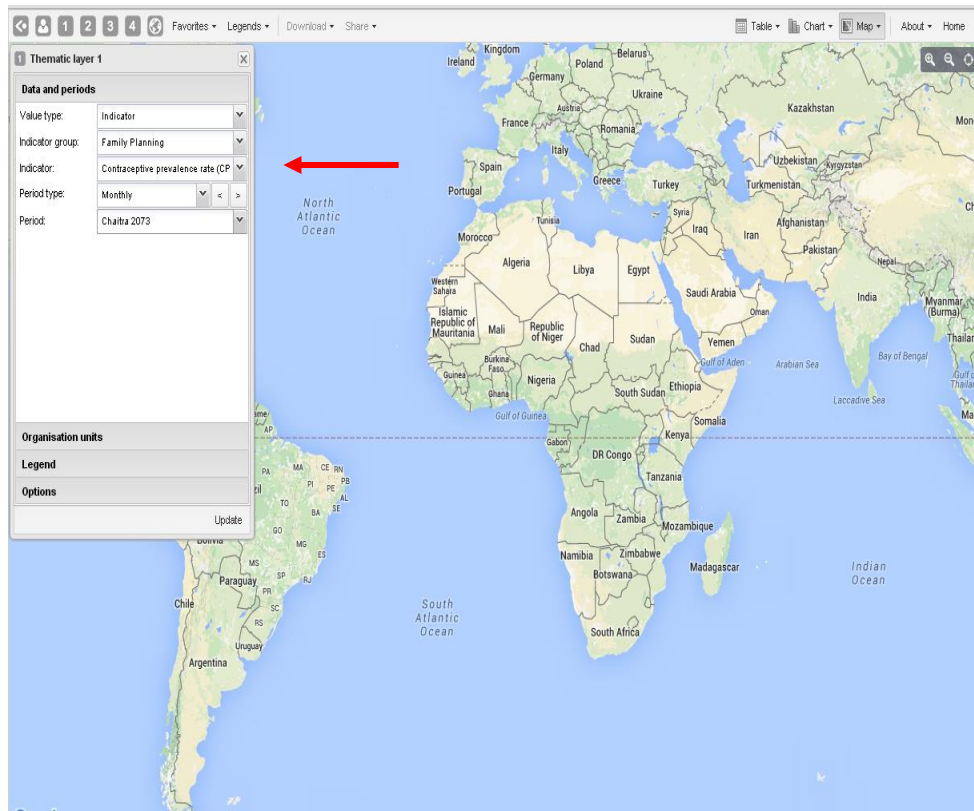
1.Click on GIS app
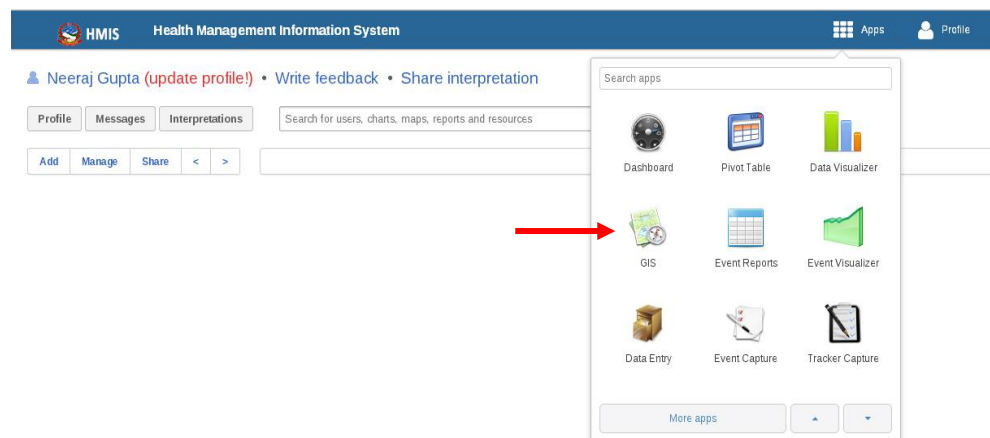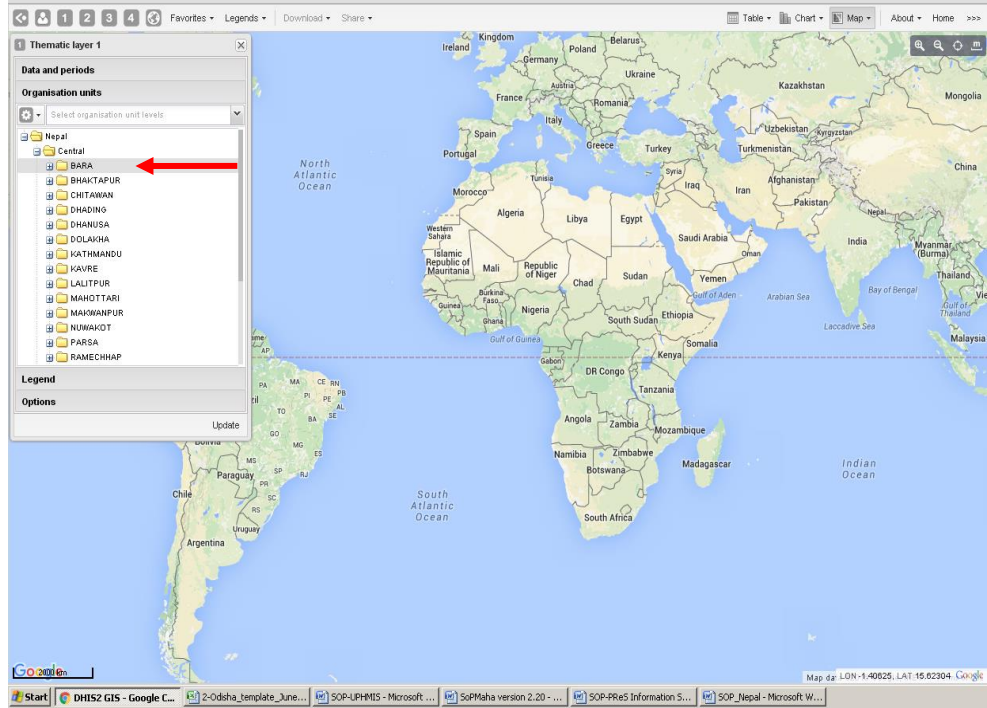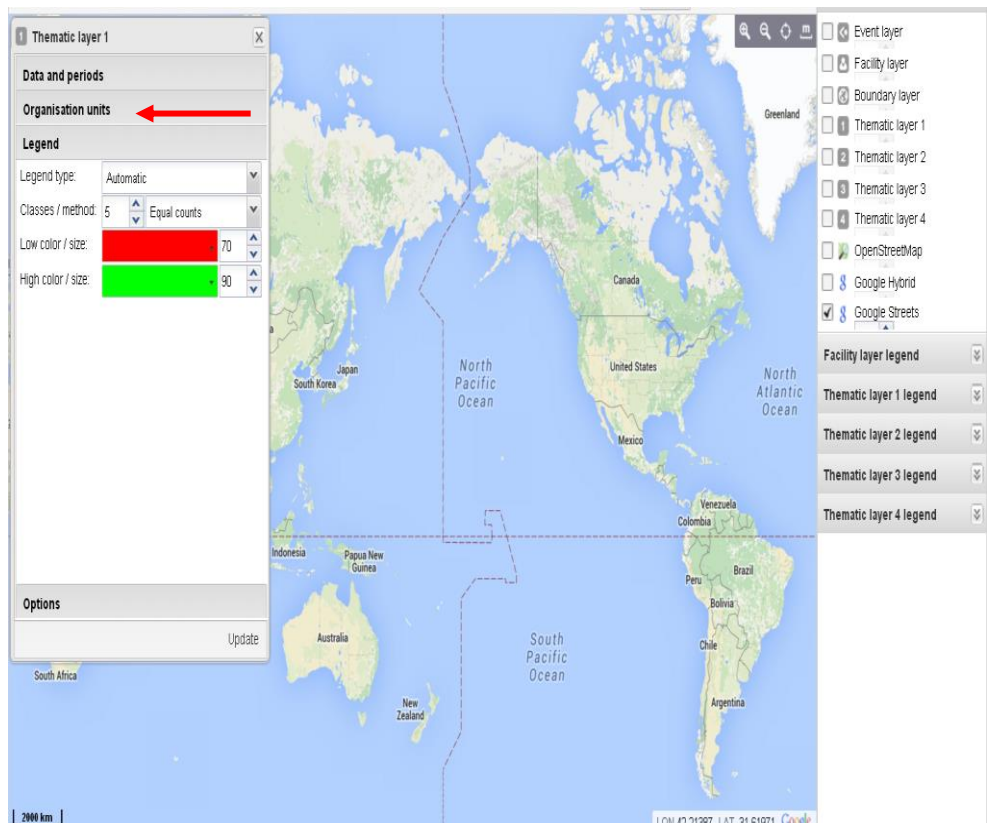
2.Edit the layer by clicking on it.
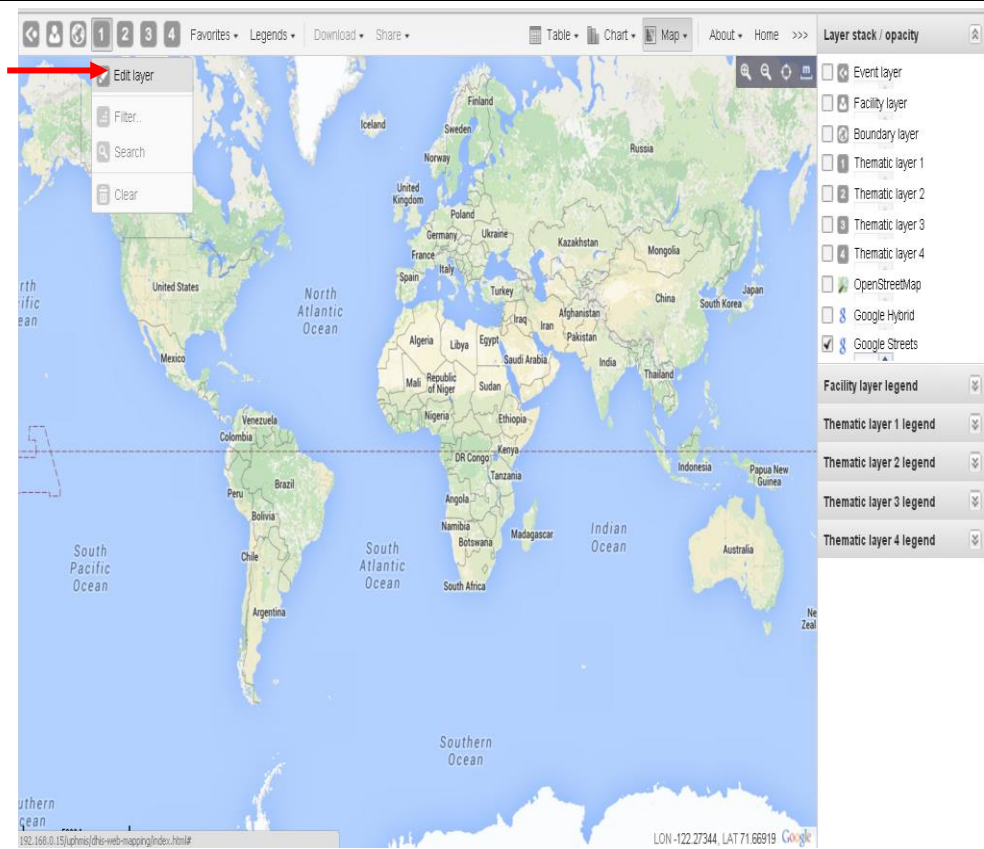
3.Then select the data element, group & period

4.Select the
organization unit

5.Define the
legend to
distinguish the
performance of
the districts.

6. Go to option and select the labels. You will get the districts boundary with labels in the map after updating it.
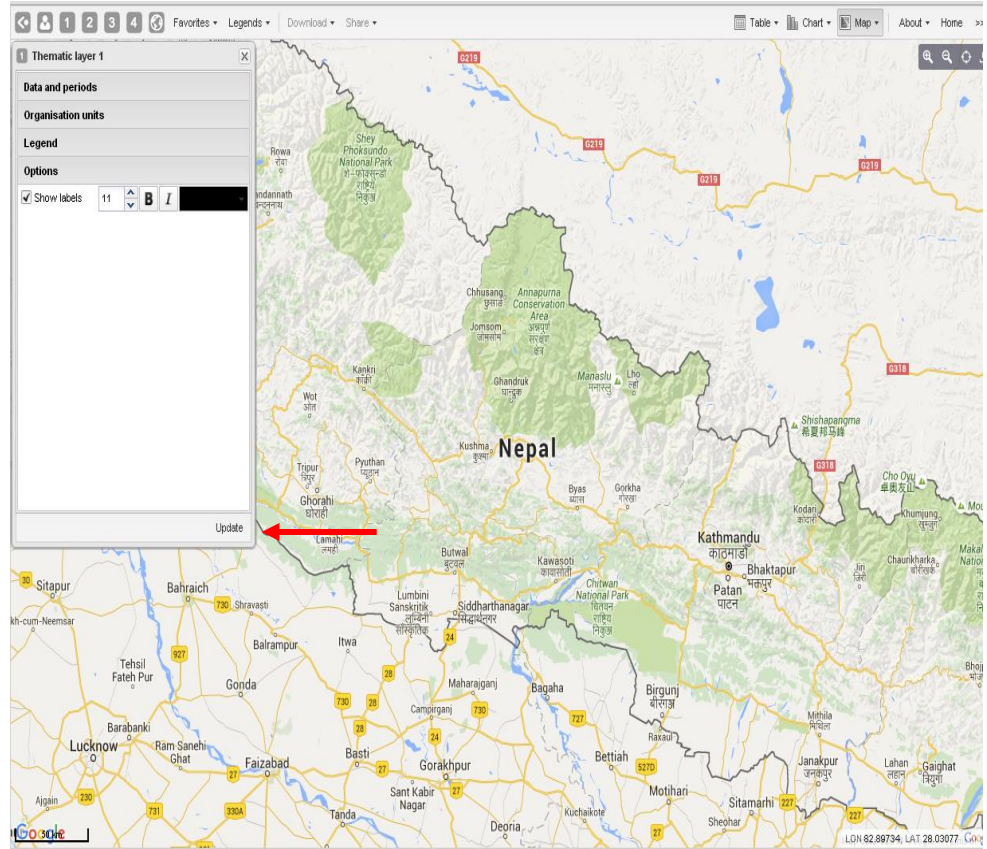
Dataset reports

Dataset reports are printer friendly views of the data entry screen filled with either raw or aggregated data. These are only available for data sets that have custom data entry forms and not for default or section forms.

You can access data set reports from Apps->Reports.

उमेर समूह	नयाँ सेवाग्राहीको सँख्या		जम्मा सेवाग्राहीको संख्या		रेफर गरिएका जम्मा सेवाग्राही	
	म.	पु.	म.	पु.	म.	पु.
०-९ वर्ष	2	3	4	5	6	7
१०-१९ वर्ष	8	9	10	11	12	13
२०-५९ वर्ष	14	15	16	17	18	19
≥ ६० वर्ष	20	21	22	23	24	25
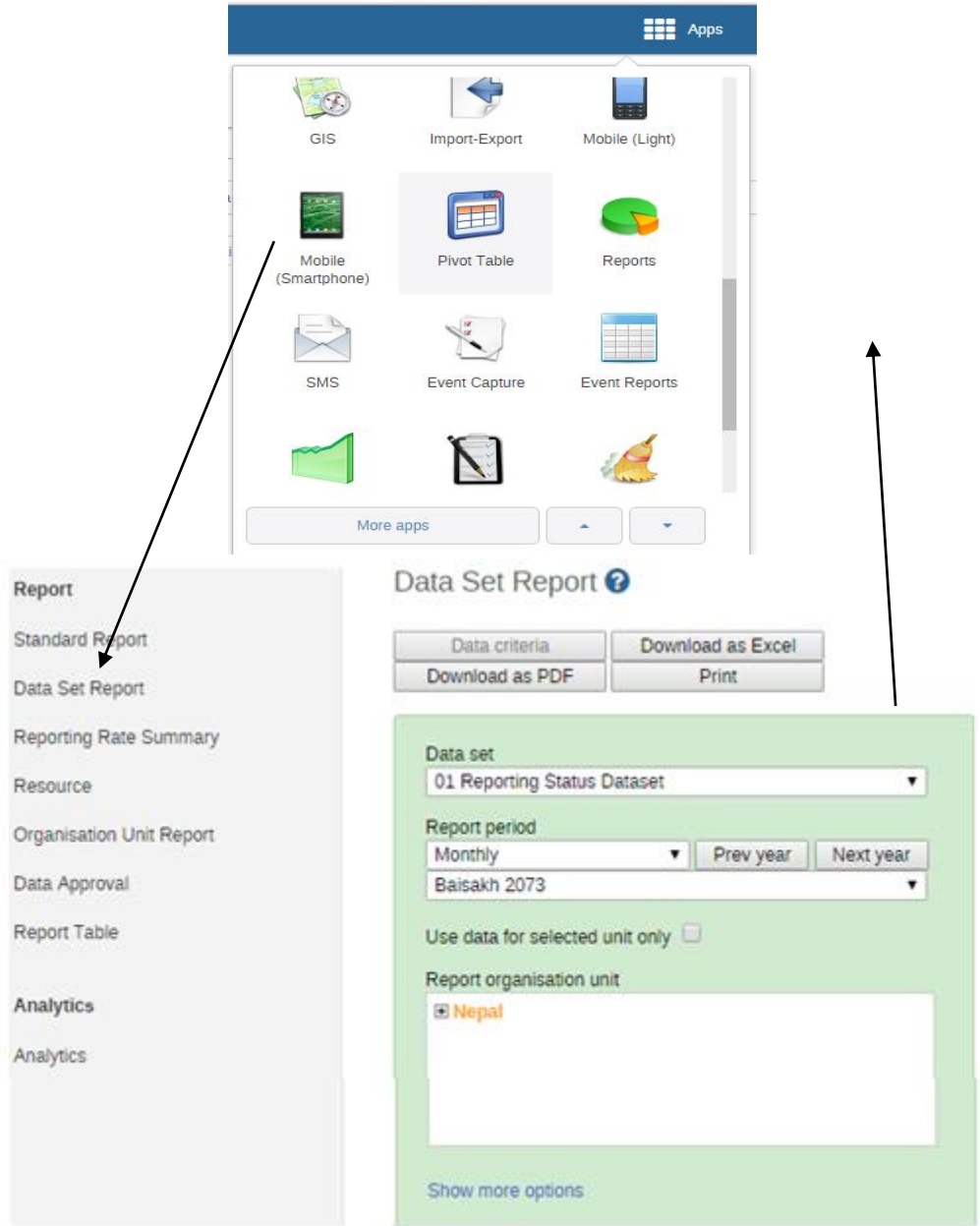
A Criteria window will appear where you fill in the details for your report: Dataset: The data set you want to display. Reporting period: The actual period you want data for. This can be aggregated as well as raw periods. This means that you can ask for a quarterly or annual report even though the data set is collected monthly. A data set's period type (collection frequency) is defined in data set maintenance. First select the period type (Monthly, Quarterly, Yearly etc.) in the drop down next to Prev and Next buttons, and then select one of the available periods from the dropdown list below. Use Prev and Next to jump one year back or forward. Use data for selected unit only: Use this option if you want a report for an orgunit that has children, but only want the data collected directly for this unit and not the data collected by its children. If you want a typical aggregated report for an orgunit you do not want to tick this option. Reporting Organisation unit: Here you select the orgunit you want the report for. This can be

at any level in the hierarchy as the data will be aggregated up to this level automatically (if you do not tick the option above). When you are done filling in the report criteria you click on "Generate". The report will appear as HTML in a printer-friendly format. Use the print and save as functions in the browser to print or save (as HTML) the report.You can also export the data set report in Excel and PDF formats

Using reporting rate summary

Access the reporting rate summary from the Apps->Reports menu. Reporting rate summaries will show how many datasets (forms) that have been submitted by organisation unit and period. There are two methods available to calculate reporting rates (completeness):

- Based on complete data set registrations. A complete data set registration refers to a user marking a data entry form as complete, typically by clicking the complete button in the data entry screen, hereby indicating to the system that she considers the form to be complete. This is i.e. a subjective approach to calculating completeness.
- Based on compulsory data element: You can define any number of data elements in a data set to be compulsory. This implies that data values must be captured for all data elements which have been marked as compulsory in order for the data set to be considered complete. This is i.e. an objective approach to calculating completeness. The reporting rate summary will for each row show a range of measures:
- Actual reports: Indicates the number of data entry complete registrations for the relevant data set.
- Expected reports: Indicates how many data entry complete registrations are expected. This number is based on the number of organisation units the relevant data set has been assigned to (enabled for data entry).
- Percent: The percentage of reports registered as complete based on the number expected.
- Reports on time: Same as actual reports, only reports registered as complete within the maximum number of days after the end of the reporting period. This number of days after reporting period can be defined per data set in the data set management.
- Percent on time: Same as percentage, only reports registered as complete on time used as numerator.

To run the report you can follow these steps:

- Select an orgunit from the tree.
- Select one of the completeness methods to use to calculate the reporting rates. Select all or one data set. All will give you a report with all data sets for the selected organisation unit. A single data set will give you a report with completeness for all children of the selected organisation unit.

- Select a period type and a period from the list of available periods for that period type. Move back/forward one year by using the prev/next buttons.
- The report will then be rendered. Change any of the parameters above and the report will be updated automatically.

Report
Standard Report
Data Set Report
Reporting Rate Summary
Resource
Organisation Unit Report
Data Approval
Report Table
Analytics
Analytics

Reporting Rate Summary

Organisation unit
⊞ Nepal

◉ Based on complete data set registrations
○ Based on compulsory data elements

01 Reporting Status Dataset ▼

Monthly ▼ | Prev year | Next year |
Baisakh 2073 ▼

Get report   Show more options

Download as PDF   Download as Excel
Download as CSV

Nepal - 01 Reporting Status Dataset - Baishak 2073

Name	Actual Reports	Expected Reports	Percent	Reports On Time	Percent On Time
Central	2	1969	0.1	0	0
Mid Western	0	679	0	0	0
Eastern	0	1008	0	0	0
Far Western	0	448	0	0	0
Western	0	1047	0	0	0
Nepal	2	5151	0	0	0

Organisation unit distribution reports

You can access the Orgunit Distribution reports from the left side menu in the Apps->Reports. Orgunit distribution reports are reports that show how the orgunits are distributed on various properties like type and ownership, and by geographical areas. The result can be presented in a table-based report or in a chart. Running a report: To run a report first select an orgunit in the upper left side orgunit tree. The report will be based on orgunits located under the selected orgunit. The select the orgunit group set that you want to use, typically these are Type, Ownership, Rural/Urban, but can be any user-defined orgunit group set. The you can click on either Get Report to get the table-based presentation or Get chart to get the same result in a chart. You can also download other format such as PDF, Excel and CSV. Orgunit distribution report


Type of Facility - Nepal

Organisation unit	AAYURBED HEALTH CLINIC	CENTRAL HOSPITAL	COMMUNITY HEALTH UNIT	DENTAL CLINIC	DIAGNOSTIC CENTRE	DISTRICT CLINIC	DISTRICT HOSPITAL	EYE CENTRE	
Central	2	6	18	43	49	1	10	3	
Eastern	0	0	12	5	0	2	13	3	
Far Western	0	0	9	0	0	1	6	0	
Mid Western	3	0	11	2	1	0	11	1	
Western	0	0	24	32	10	4	12	1	
Nepal	5	6	74	82	60	8	52	8	

Standard Reports

A standard report is a manually designed report that presents data in a manually specified layout. Standard reports can be based either on report tables or SQL queries. Both approaches are described in the following sections. The main advantage of using report tables is that of simplicity - no special development skills are required. In cases where you have special requirements or need to utilize additional parts of the DHIS database you might want to use a SQL based standard report. In any case you will be able to utilize report parameters in order to create dynamic reports. The following guide will use the report table approach, while the SQL approach is covered towards the end.

Steps for Generate Standard Report
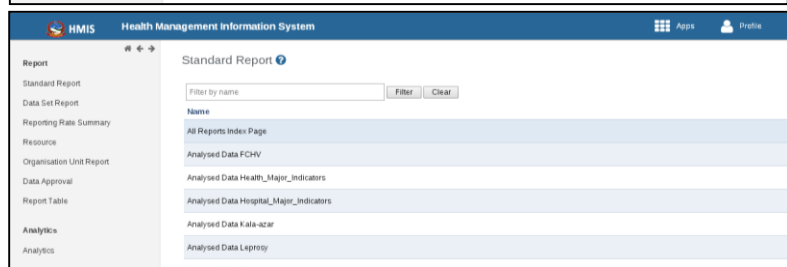
1. Click on the report app.
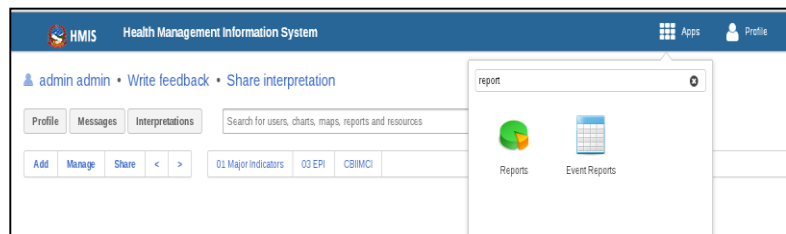
2. Then select standard report from report app.

3. Once you click the standard report you will get the different types of report under it.
4. Then click on 'All report index page'

5. Under 'All report index page' you will get the 4 categories in the dropdown i.e. Raw data, Analyzed data, Monitoring & verification.
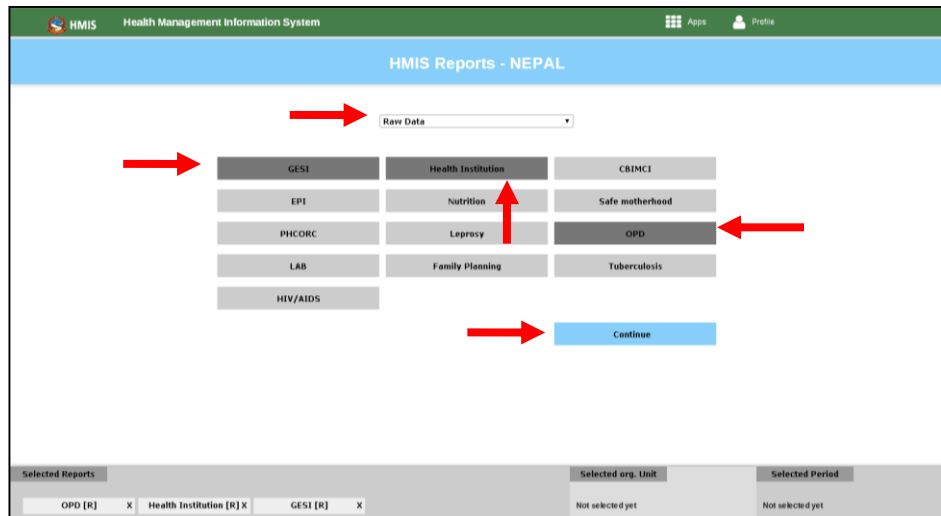
6. category wise report can be generated by clicking on any of the categories
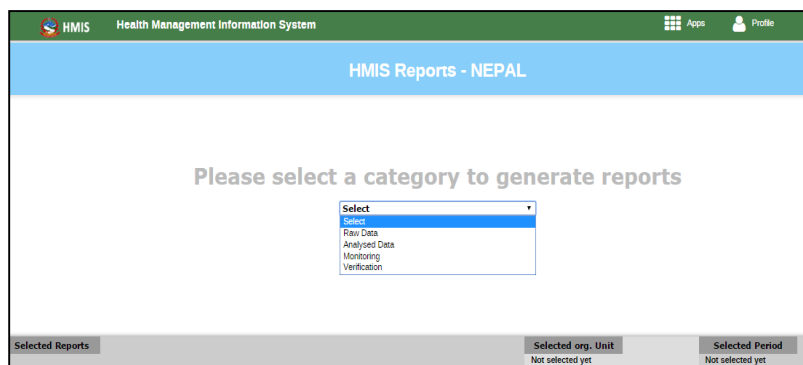
7. To generate the report, first we need to select the category.

8. The select the programs under the category. We can select the multiple program at one go also.

9. Then click on continue button.

10. Once clicking on continue button you will get the duration, month & organization unit.

11. Selct the duration, month & organization unit and click on generate report

11. Finally you will get the report like this & this report will be downloadable in excel format.

Dashboard and social features

DHIS 2 provides a personal dashboard where you can put your favorite charts, maps and reports for fast access. You can search directly from the dashboard for analysis related to a particular subject or for other people. The dashboard features integrated messaging functionality which lets you communicate directly with other users. From the dashboard you can view the data interpretation feed - data interpretations shared from the various analytics modules will appear here so that you can better understand your data and your organization. From the feed you can comment on other people's interpretations and start discussions.

Creating a Dashboard

The dashboard can contain any number of objects (charts, maps, reports, tables, resources, etc). These can be freely arranged on the dashboard as you wish. Dashboard items can be located and added by searching for favorites, resources, users or messages in the available search box and clicking on the "Add" button

There are several hyperlink options available on each item:

1.Remove
Allows you to remove the item from the dashboard when you have the appropriate user rights.

2.Get as Image
Opens up a pop-up window and allows you to download the image to your computer.

3.Share interpretation
Allows you to share an interpretation of the dashboard item. Your interpretation will be shared publicly with other

users of the DHIS2 system, in the "Interpretation" section of the dashboard.

4.Explore
Loads the favorite in its corresponding app (ie. a map will open full-sized in the GIS app).
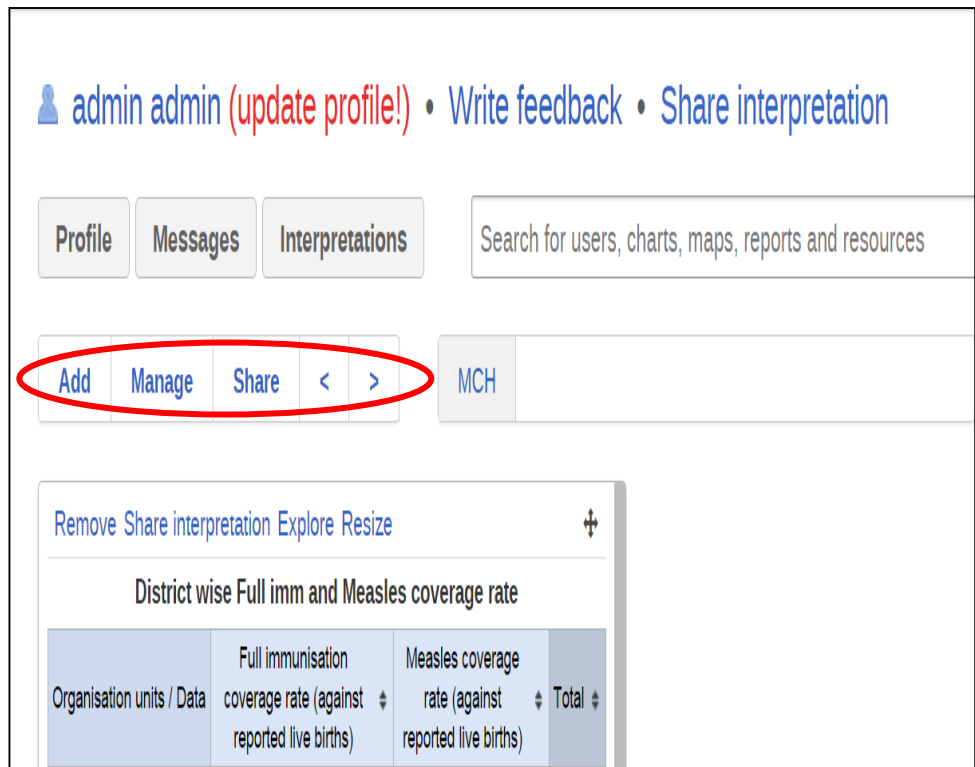
5.Resize
Resizes the dashboard item.

Add
Allows additional dashboards to be added.

Manage
Can change the name of the dashboard, add messages or delete the dashboard. This applies to the currently selected dashboard item.

Share
Allows the sharing of dashboard items with user groups. User permissions can also be assigned to each user group.

Manage messages and feedback messages

Within DHIS2 you can send messages and feedback messages to users, user groups and organisation units. When you send a feedback message, it is routed to a particular user group. If you're a member of this user group, you've access to feedback handling tools. You can for example set the status of an incoming feedback to "Pending" while you're waiting for information.

Note Messages and feedback messages are not sent to users' e-mail addresses, the messages only appear within DHIS2.

1. From the Dashboard, click Messages.

2. Click Write message.

3. Define who you want to receive the message. You can send a message to organisation units, users and user groups.

- In the To org unit field, select the organisation units or group of organisation units you want to send the message to.
- In the To user field, select the users or user groups you want to send the message to.

4. Type a subject and a message.

5. Click Send.

Read a message

1. From the Dashboard, click Messages.

2. Click a message. If the message is part of a conversation, you'll see all messages in this conversation.

Create a feedback message

1. From the Dashboard, click Write feedback.

2. Type a subject and a feedback message.

3. Click Send. The feedback message will appear in all of the specified users' inboxes.

Configure feedback message function

To configure the feedback message function, you must:

1. Create a user group (for example "Feedback recipients") that contains all the users who should receive feedback messages. Dashboards Manage feedback messages
2. Click Apps > Settings > General > Feedback recipients and select the user group.

Following major points to be Remember

IP Address

10.10.1.21:8080/hmisnepal,

Data Entry

1. Open browser (Google chrome/Mozilla Firefox….. etc)
2. App
3. Data Entry
4. Organization Unit (Where)
5. Data Set (What)
6. Period (When)

Report Generation

1. App
2. Pivot Table/Data Visulizer
3. Select Data Element / Indicator
4. Organization Unit
5. Period

Dash Board Preparation

1. Home
2. Select Required Section or add new section on Dash board
3. Search Required Table/Graph/Map
4. Add

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Reference

www.dhis2.org