

9/7/2013



MANAGEMENT  
INFORMATION  
SYSTEM

## HOW TO MONITOR ROUTINE INFORMATION?

Monitoring mechanism through DHIS-2 of Management Information System of DGHS

For MIS official, District manager, Upazila Manager and ICT focal points

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## **Introduction**

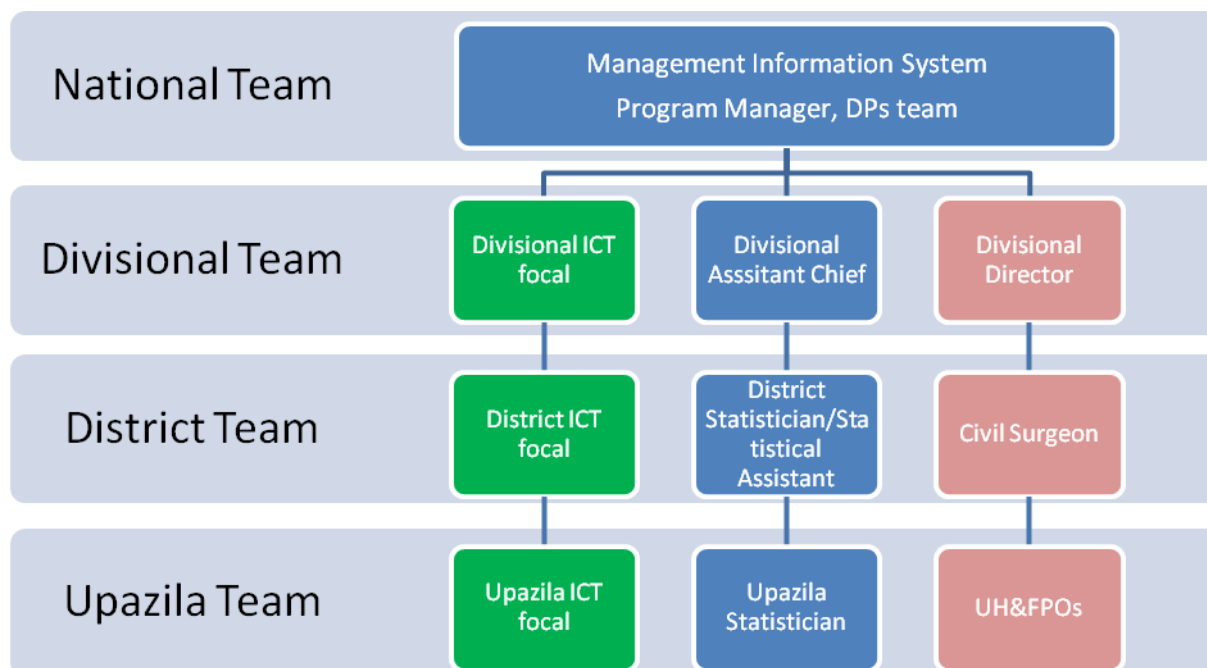
Bangladesh has recently developed a good ICT infrastructure from central to rural level. All the health facility up to upazila level is equipped with computer and internet connection. In 2013 we have provided laptops to the community clinic (Community Health Care Provider) and hand held device (Tablet) for the field workers (Health Inspector, Assistant Health Inspector and Health Assistant).

Management Information System is receiving lot of information every day and every month. All the information is stored in the central data warehouse. Due shortage of human resource, it is not possible to check all data and its quality every month. The data is also not accessible to all citizens as it requires a password to access the data. MIS is now planning to monitor and improve the quality of every data through creating a force at upazila, district, division and nationally to improve its quality and use at local level as well as for the program itself. Recently MIS has created ICT focal points

This guideline contains the strategy and mechanism how MIS is going to monitor all the information from different levels. This guideline will also contain the details how to produce analytical reports from the DHIS-2.

## **Human resource available for monitoring**

As mentioned, there is no cadre for the information system below the division level, MIS has officially requested to assign one person from every district and upazila who will be responsible for data and information. The person is recognized as an ICT focal person. Though all the reports are sent by the statistician and there is no one to check the data quality and to use the information locally, the ICT focal person will ensure the availability of reports and will analyze the data at the local level. This will eventually improve the availability of data with quality information. The following figure shows the composition of different level ICT teams who ensure all the information and will be responsible for the data, training and ICT related issues.



## Role of ICT focal person

1. To ensure routine data every month from the reporting unit
2. To analyze the data and send feedback to all concern
3. To check the quality of the data by each organization
4. Making power point presentation for monthly meeting
5. Supportive monitoring to statistician
6. Provide training in different technical issues
7. Attending national and divisional level meeting related to information
8. Field visit to check data quality and integrity
9. Ensure information in the local health bulletin
10. Ensure HRM data every month

## Reporting functionality in DHIS 2

The reporting module in DHIS 2 provides a range of reporting alternatives, and this section will explain how to use them to view and analyse data. Another section explains how to configure and set up the various reporting tools.

**Standard reports:** Standard reports are built on report tables, but are more advanced in its design allowing for more cosmetics and styles. These reports can also combine multiple tables and charts in the same report and be made available as one-click reports that are very easy to use. These reports can be downloaded as PDF files which makes them ideal for printing as well as sharing offline.

**Dataset reports:** Dataset reports are simply a printer friendly way to look at the data entry forms with either raw or aggregated data (over time or place). The design used in data entry will be used also in the data set reports. This will work only for data sets that has a custom data entry form set up.

**Dashboard:** The fastest way to view your data. The dashboard can display up to four updated charts as well as shortcuts to your favourite reports, report tables, and map views. Each user can configure a personal dashboard.

**Data Visualizer:** Do flexible visualizations of your data as charts and data tables. Any number of indicators and data elements can be included. Several chart types are available, such as column, stacked column, line, area and pie charts. The charts can be saved in order to be easily retrieved later and can also be put on your personal dashboard. Charts can be downloaded as image and PDF files to your local computer.

**Report tables:** These are very configurable table outputs of your data, either showing raw or aggregated data, as well as indicator data. These tables are used as either a data source for more advanced reports, for export to external systems, or as a crude report itself, and are exportable to PDF, excel, CSV and jasper design files. These tables represent a very dynamic, flexible and quick way to look at the data. Report tables can be set up with parameters to make them reusable over time and place.

**Orgunit distribution reports:** These reports are generated off the orgunit group set information and can show what types (and how many of each type) of health facilities that are located in a given area (any level in the hierarchy). These reports are automatically generated and display the information in both tables and charts, and downloads in PDF, excel, and CSV are available.

**Reporting rate summary:** These reports provide a nice overview of how many facilities that have submitted their data for a given dataset and period. Here you can get both the counts and the percentages showing the reporting rate for all or single data sets.

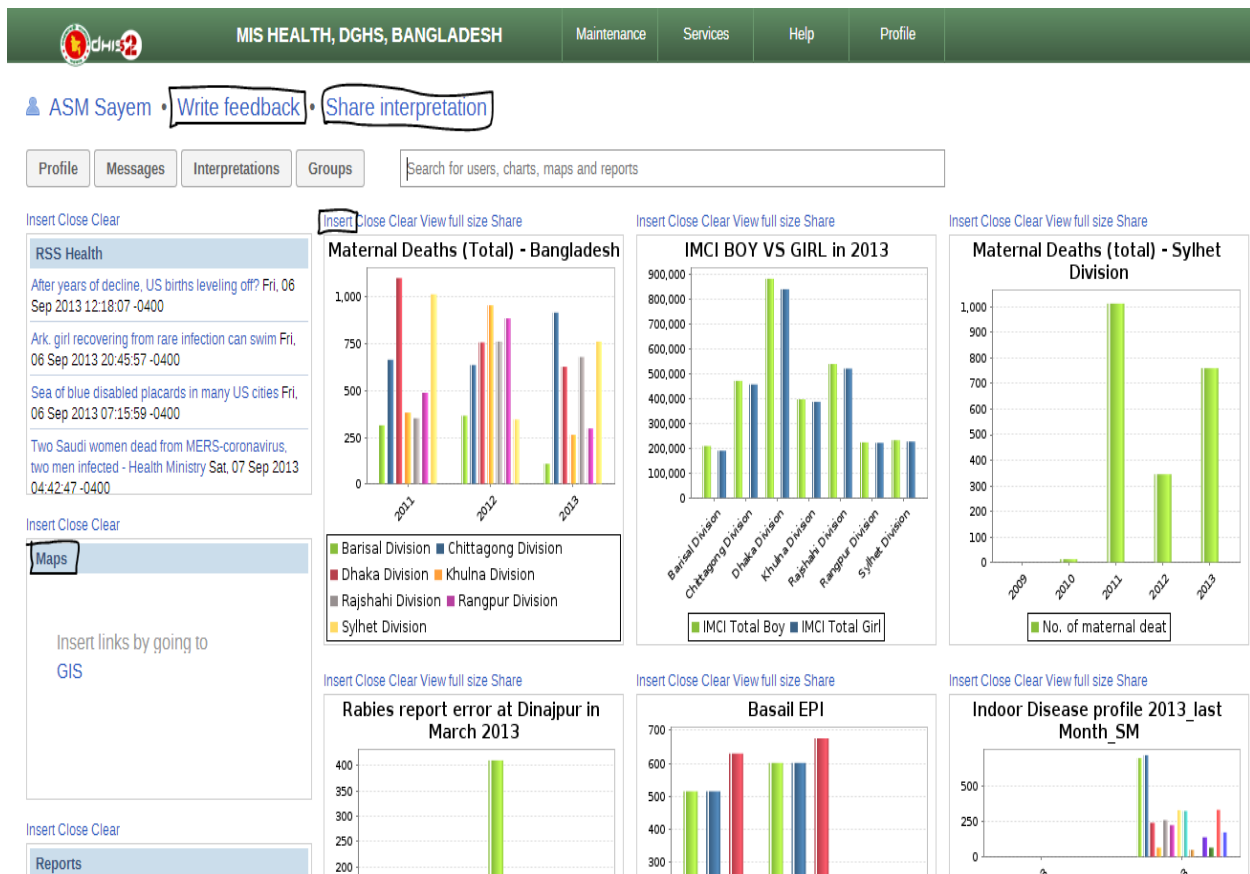
**Excel pivot tables:** Excel pivot tables represents a very powerful way to analyse your data and DHIS 2 links directly to the pivot tables so that all the data will be available and updated in your Excel file. This can be a very useful tool for users that prefer working with the data offline. To update your local pivot tables you need the myDatamart tool which connects to the online server and downloads the latest data. This update will typically take place once a month when new data is available, but do not require a constant internet connection like the other reporting tools (if you are connecting to an online DHIS 2 server).

**Web-based pivot tables:** The built in pivot table tool is a simple web-based tool to display indicator data by orgunit and period in a typical pivot table view and allows for some basic pivoting manipulations of the tables. It is a quick and easy way to look at many indicator values at the same time (by orgunit and/or period), but does not have the same functionality as the offline Excel pivot tables.

**GIS:** Present and analyse your data using thematic maps. You can view both data elements and indicators and given that you have coordinates for all your orgunits you can drill down the hierarchy and view maps for all levels from country polygons to facility points. See the separate chapter on GIS for more details. All the map information is built into DHIS 2 and all you need to do is to register coordinates for your organisation units and the maps will be available.

## Using the dashboard

The dashboard is your first view into the data every time you log on to the system. Every user has its own dashboard, and a dashboard consists of 4 chart areas to the right and 3 short cut areas to the left.



**Updated dashboard will indicate how smart and updated is the ICT focal person in information.**

**Customise shortcut areas:** Each of the three short cut areas can hold a list of items from one of the following objects; Reports (standard), Documents, Data mart exports, Report tables, Map views, RSS Health. To add a new object type to a shortcut area click on the Insert link just above the area. Then to populate the list you need to add items one by one from the Services->Reports menus. From the various lists of reports, report tables, charts etc. you can add an item by clicking on the pie chart icon next to the item you want to add to the dashboard.

E.g. to add your three favourite standard reports to the dashboard, first Insert Reports to one of the shortcut areas in the dashboard, then go to Services->Reports and click on Standard reports. From the list of standard reports you locate the reports you want and click on the pie chart icon next to each of the reports you want to add to the dashboard. When you go back to the dashboard you will see the three reports listed in the shortcut area where you inserted Reports.

Use the Clear link above the shortcut area to empty an area. The Close link closes the insert menu without inserting a new object type.

**Customise chart areas:** There are four chart areas. To insert a chart simply click on insert and click on one of the charts in the list. Use Close to close the list without adding a new chart, and use Clear to empty a chart area. These charts will be updated every time you open the dashboard, will automatically show data for the orgunit assigned to the current user, and will update the data when new periods are available.

## Using standard reports

You access the available reports from the Services drop-down menu, by selecting Reports. In the report menu in the left bar, click Standard Report. A list of all pre-defined reports will appear in the main window.

The screenshot displays the MIS Health, DGHS, Bangladesh web application. The top navigation bar includes 'Maintenance', 'Services' (circled), 'Help', and 'Profile'. The left sidebar shows a 'REPORT' menu with 'Standard Report' highlighted. The main content area is titled 'Standard Report' and features a search filter, an 'Add new' button, and a table of reports. The table lists three reports: 'Indoor Patient Disease Profile', 'Monthly Indoor Mortality Patient Report', and 'Total Indoor Admission'. Each report has a set of icons for operations: a white and green arrow, a pie chart, a trash can, and an information icon. At the bottom, there is a pagination control showing 'No. of pages: 1', 'No. of rows per page: 50', and 'Jump to page: 1'.

You run/view a report by clicking on the white and green arrow next to the report you want. You will then see a report parameter window where you must fill in the values needed for orgunit and/or reporting month, depending on what has been defined in the underlying report table(s). Click on "Get Report" when you are ready.



The screenshot displays the MIS Health, DGHS, Bangladesh web application interface. On the left is a dark green sidebar with a navigation menu. The top of the sidebar has a 'REPORT' section with options: Standard Report, Data Set Report, Reporting Rate Summary, Resource, Organisation Unit Report, and Report Table. Below this is an 'ANALYTICS AND DATA MART' section with 'Analytics and Data Mart'. The main content area is titled 'Report table parameters'. It features a 'Reporting period' dropdown menu currently set to 'June 2013'. Below that is an 'Organisation unit' tree view. The tree view shows a hierarchy starting with 'Tangail District', followed by 'Basail Upazila'. Under 'Basail Upazila', 'Basail UHC' is highlighted with a red circle. Other units listed include 'Basail Gvt. HF', 'BASAIL Union, Basail', 'Basail USC', 'BAVS (Basail)(0002)', 'FULKI Union, Basail', 'Fulki USC', 'HABLA FWC', 'HABLA Union, Basail', and 'KANCHANPUR FWC'. At the bottom of the main content area are three buttons: 'Get report' (with a red arrow pointing to it), 'Back', and 'Download as Excel'.

The report will either appear directly in your browser or be available as a .pdf file for download, depending on your browser settings for handling PDF files. You can save the file and keep it locally on your computer for later use.

This reporting system is used to produce the following report:

1. Monthly indoor patient total by upazila
2. Monthly analysis to disease morbidity
3. Monthly analysis of mortality data

Standard report is created as per request from different level. To get more standard report please request to the developed at MIS.

## Using 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 the Report menu under Services.

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.

The screenshot shows the 'Data Set Report' window in the DHIS2 MIS Health, DGHS, Bangladesh system. The interface is divided into a left sidebar and a main content area. The sidebar contains a 'REPORT' menu with 'Data Set Report' highlighted, and an 'ANALYTICS AND DATA MART' section. The main content area is titled 'Data Set Report' and contains a 'Data' button. Below this, there is a form with the following fields and options:

- Data set:** A dropdown menu showing 'EPI Infant Data Set (Form-1)'.
- Report period:** A dropdown menu showing 'Monthly', with 'Prev year' and 'Next year' buttons next to it.
- Period selection:** A dropdown menu showing 'July 2013'.
- Use data for selected unit only:** A checkbox that is currently unchecked.
- Report organisation unit:** A tree view showing a list of units under 'Bangladesh':
  - Bangladesh
    - Barisal Division
    - Chittagong Division
    - Dhaka Division
    - Khulna Division
    - Rajshahi Division
    - Rangpur Division
    - Sylhet Division
    - DIC Jhenaidah FSW-Save

At the bottom of the form, there is a 'More options' link and two buttons: 'Get report' and 'Cancel'.

**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 in html view in a printer-friendly format. Use print and save as functions in the browser to print or save (as html) the report.

**MIS HEALTH, DGHS, BANGLADESH**

Maintenance Services Help Profile

REPORT

- Standard Report
- Data Set Report
- Reporting Rate Summary
- Resource
- Organisation Unit Report
- Report Table

ANALYTICS AND DATA MART

Analytics and Data Mart

Data Set Report ?

Data Download as Excel Download as PDF Print

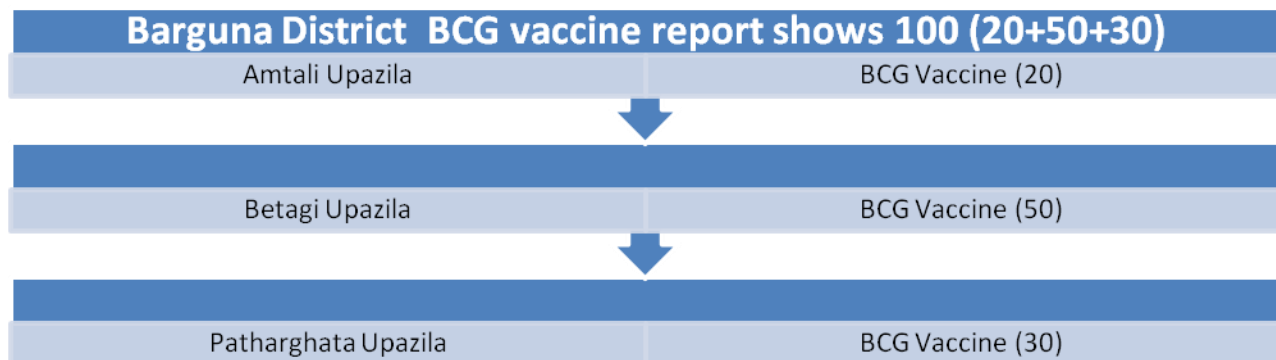
Barisal Division - July 2013

Write a comment, question or interpretation of this report

Share

Monthly Target : 18062			
0-11 Months Children		12-23 Months Children	
BCG:	17648	BCG:	9022
Penta 1:	18454	Penta 1:	9392
Penta 2:	17290	Penta 2:	8916
Penta 3:	16972	Penta 3:	9254
OPV 0:	3440	OPV 1:	376
OPV 1:	18274	OPV 2:	9392

You can print, download and share the report if you want.



**Level of aggregation**

## Using reporting rate summary

Access the reporting rate summary from the Services->Reports menu. Reporting rate summaries will show how many datasets (forms) that have been submitted by organisation unit and period. You can use one of three different methods to calculate completeness; 1) based on complete button in data entry, 2) based on a set of defined compulsory data elements, or 3) based on the total registered data values for a dataset.

To run the report do the following:

Select an orgunit from the tree.

Select one of the completeness methods.

Select all or one dataset (All will give you a report with all datasets for the selected orgunit. One dataset will give you a report with completeness for all the children of the selected orgunit).

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.

Then the report will be shown automatically.

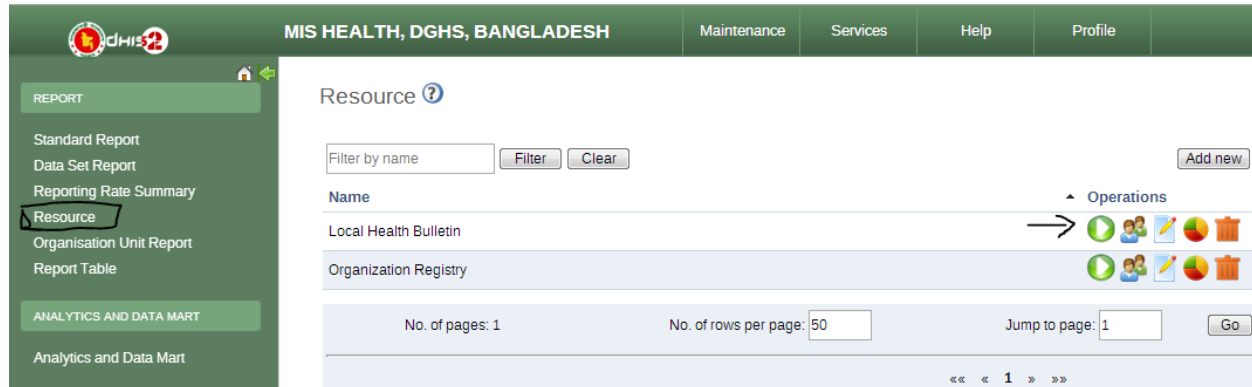
Change any of the parameters above and the report will be updated automatically.

Name	Actual Reports	Expected Reports	Percent	Reports On Time	Percent On Time
Barguna District	1	1	100	1	100
Jhalokati District	1	1	100	0	0
Barisal District	1	1	100	0	0
Bhola District	1	1	100	0	0
Pirojpur District	1	1	100	1	100
Patuakhali District	1	1	100	0	0
Barisal Division	6	6	100	2	33.3

**This report should be presented in every monthly meeting at Upazila and District level office by the ICT focal persons.**

## Using resources

The resource tool allows you to upload both files from your local computer to the DHIS server and to add links to other resources on the Internet through URLs. If you want to share the direct link to the DHIS resource you can right click on the "view resource" button and copy the link address.



The screenshot shows the DHIS2 interface for managing resources. The top navigation bar includes 'MIS HEALTH, DGHS, BANGLADESH', 'Maintenance', 'Services', 'Help', and 'Profile'. The left sidebar has a 'REPORT' section with 'Resource' highlighted, and an 'ANALYTICS AND DATA MART' section. The main content area is titled 'Resource' and features a search filter, an 'Add new' button, and a table of resources. The table lists 'Local Health Bulletin' and 'Organization Registry'. Each row has an 'Operations' menu with icons for view, edit, and delete. At the bottom, there are pagination controls showing 'No. of pages: 1', 'No. of rows per page: 50', and 'Jump to page: 1'.

To create a resource click on the "Add new" button. Enter a name for the resource, then choose between uploading a file or external URL. If you chose file upload click "Choose file" and select your file from your local computer. If you chose URL enter the link to the resource on the Internet. Then click "Save".

## Using organisation unit distribution reports

You can access the Orgunit Distribution reports from the left side menu in the Services->Reports module.

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. Then 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. Then you can click on either Get Report to get the table-based presentation or Get chart to get the same result in a chart.

MIS HEALTH, DGHS, BANGLADESH

REPORT

Standard Report  
Data Set Report  
Reporting Rate Summary  
Resource  
**Organisation Unit Report**  
Report Table

ANALYTICS AND DATA MART  
Analytics and Data Mart

Organisation unit distribution report ?

Report organisation unit

- Bangladesh
  - Barisal Division
    - Barguna District
      - Amtali Upazila** ←
      - Bamna Upazila
      - Barguna Civil Surgeons Office, Barg
      - Barguna District Family Planning Off
      - Barguna District Hospital, Barguna
      - Barguna District NGO Total
      - BARGUNA District Private Clinic
      - Barguna Jail
      - Barguna MCH/IC

Type

Get report    Get chart

Download as PDF    Download as Excel

Download as CSV

Type - Amtali Upazila

Organisation unit	10/20/31/50 Bed Hospital (not UHC)	Chest or TB Clinic and Hospital	City Corporation (CC)	Civil Surgeon Office	Community Clinic	Country	District Hospital	District Hospital/General Hospital	District NGO & Private Total	Division	Government Medical College	Government Medical College Hospital	Government Specialized Hospital/National Institute
Amtali UH&FWC	0	0	0	0	0	0	0	0	0	0	0	0	0
Amtali UHC	0	0	0	0	0	0	0	0	0	0	0	0	0
AMTALI Union, Amtali	0	0	0	0	5	0	0	0	0	0	0	0	0

**Every District and upazila team should produce this report to check their organization report in the upazila and district. This is a basic thing to ensure by the team manager.**

## Using data analyzer

Data analyzer is a special module is usually not present in the standard DHIS-2. This module has been created by the HISP India. This module has several options for analyzing data. The most important function of this module is **Tabular analysis**. The data analyzer is available in the service menu.

**DataElement Wise analysis:** Though this you can analyze selected element or indicator from a data set. For example you want to analyze only diarrhea from the IMCI dataset.

## How to produce Graph:

First select the element group from the **FilteredBy DataElementGroup / Section:** This section has different reporting group like IMCI group, EPI child report ect

**Compare/View By :** Some element has options like Age-sex disaggregation. Select **Option in dataelement** to see those options

## Data Elementwise Graphical Analyser

**FilteredBy DataElementGroup / Section:**  
IMCI Group

**Compare/View By**  
Options in DataElements

**Filter:**

**FilteredBy DataElementGroup :**

**Available DataElement List :**

- IMCI Very Severe Disease:(1-5 Year(s))
- IMCI Very Severe Disease:(29 Days-2 Months)
- IMCI Very Severe Disease:(0-28Day(s))
- IMCI Ear problem:(2 Months- 1Year)

**Selected DataElement List :**

- IMCI Diarrhea:(0-28Day(s))
- IMCI Diarrhea:(29 Days-2 Months)
- IMCI Diarrhea:(2 Months- 1Year)
- IMCI Diarrhea:(1-5 Year(s))

**Available DataElement List :** select the elements to shift from left to right. The selected element will be seen in the graph.

**Organization unit:** There are two ways of selection organization. You can select organization according to group of organization (Upazila health complex, District hospital). If **OrgUnitGroups is not selected then the report will show the aggregated report.**

**Aggregated Data**

**OrganisationUnit List :**

- Amtali Upazila

**OrgUnitGroups**

- Govt HF
- NNP Program
- USC
- Upazila Health Comple
- District NGO & Private T
- MCWC
- District Hospital/Centra

**View by:** To see the report by every organization under the upazila or district select by **Children here.**

To see the aggregated report select **periodwise**, To see the report only from the selected organization select only **selected**.

**Period type:** Select to period/frequency of the dataset. You can even select the other period. After selecting the type of period you have to select the **year** and **month**. **One than one month can be selected at the same time.**

**View by :**  
 Period Wise

**Year**  
 2013  
 2012  
 2011  
 2010  
 2009  
 2008  
 2007

**View Chart**

**Period Type**  
 Monthly

**Period**  
 Jan  
 Feb  
 Mar  
 Apr  
 May  
 Jun  
 Jul

**View Summary**

View Chart/View Summary: There are two options to see the report. View chart produce chart/graph with tables and the view summary report produce only tables.

### Easy steps to make a graph:

1. Select **filtered by data element group** (example: IMCI group)
2. **Compare/view by** (Data element)
3. Select **available dataelement** from list and double click to shift it to the right side
4. Select the organization from the **organization tree** on the left side
5. Set the view by **to period wise**
6. Set the period type as **monthly**
7. Select **year and month**
8. Click the **View chart** to produce the following graph.



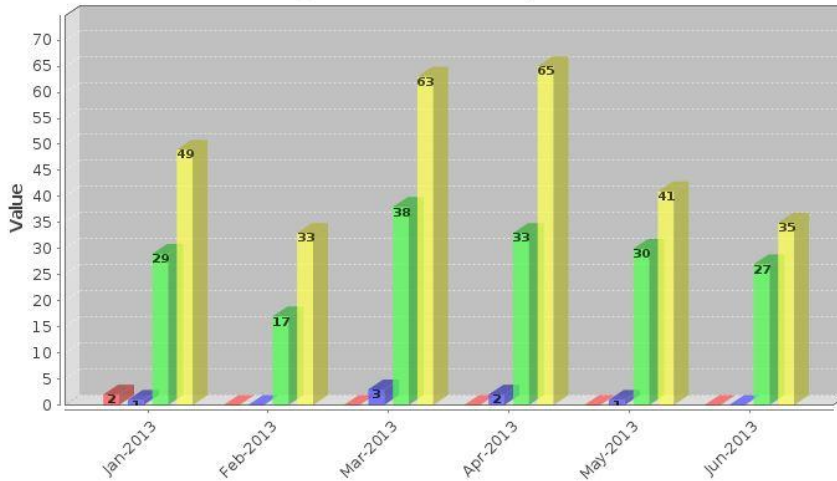
Export To Excel

Vertical 3D BarChart

Select Sort Type

Data Element Name	Jan-2013	Feb-2013	Mar-2013	Apr-2013	May-2013	Jun-2013
IMCI Diarrhea : (0-28Day(s))	2.0	0.0	0.0	0.0	0.0	0.0
IMCI Diarrhea : (29 Days-2 Months)	1.0	0.0	3.0	2.0	1.0	0.0
IMCI Diarrhea : (2 Months- 1Year)	29.0	17.0	38.0	33.0	30.0	27.0
IMCI Diarrhea : (1-5 Year(s))	49.0	33.0	63.0	65.0	41.0	35.0

3D BarChart  
OrganisationUnit : Amtali Upazila



**Indicator wise analysis:**

This module also has the same functionality as above to analyze the indicators only. There are predefined indicator from the administrator.

**Tabular analysis:**

This is very important for the annual data analysis by different organization. This works same as above by gives you the result by name of the organization. Example: If you want to see the Diarrhea cases of Barguna district by its every upazila health complex then select the element as above procedure. While selecting the organization you can select different level according to need. Level 1 is Bangladesh, 2 is Division, 3 is District, 4 is upazila level organizations, 5 is union level organizations and 6 is community level organizations.

OrgUnit Levels  Generate Aggregate C

OrganisationUnit List :

OrgUnitGroups/Level

- Level - 3
- Level - 4
- Level - 5
- Level - 6

The following type of reports are produced for analysis.

SI.No.	Level 2	Level 3	Level 4	Level 5	dogbite_p Jan-2013
1	Barisal Division				700
2		Barguna District			60
3			Amtali Upazila		0
4				Amtali UH&FWC	0
5				Amtali UHC	0
6				AMTALI Union, Amtali	0

### Data Status - Regular

This is very interesting function of the analyzer to see the data reporting status by different colours. You can dig down to find the defaulters in this system. This function is used mainly to detect the organization who has not submitted reports. The color shows the percentage of report they completed. To get a report follow the instruction in the picture.

The screenshot displays the 'DataStatus Form' interface. On the left, a tree view shows the hierarchy: Bangladesh > Barisal Division. The main form contains the following fields:

- 1. Data Set List: CC\_Upazila\_report
- 2. OrganisationUnit By: Immediate Children
- 3. OrganisationUnit List: Barisal Division
- 4. From: Jan-2013
- 5. To: Mar-2013

On the right side, there are several buttons: 'View DataSummary - Data Set', 'View Data Status - Data Set' (highlighted in yellow), 'View Data Status - Data Element Group', 'User Details', 'Validation Status', and 'View Comments'. A checkbox for 'Include Zero' is checked. Arrows in the image indicate the workflow: selecting 'Barisal Division' in the tree, setting the date range, and clicking the 'View Data Status - Data Set' button.

Include Zero

[Export To Workbook](#)

Data Entry Status

	Completed (75+) %
	Partially Completed (41 - 75) %
	Not Completed (1 - 40) %
	Not Entered ( 0 ) %
	Not Assigned

Data Set : CC\_Upazila\_report ( 23 )

Division	District and National/Divisional level HF	Jan-2013	Feb-2013	Mar-2013	Apr-2013	May-2013	Jun-2013
Barisal Division	Barguna District	72%	71%	74%	73%	83%	80%
	Barisal District	91%	90%	90%	87%	100%	100%
	Bhola District	53%	52%	65%	68%	90%	54%
	Jhalokati District	20%	20%	20%	20%	20%	42%
	Patuakhali District	99%	99%	100%	100%	99%	100%
	Pirojpur District	80%	82%	82%	81%	82%	82%
Chittagong Division	Bandarban District	44%	44%	44%	45%	49%	68%
	Brahmanbaria District	58%	57%	57%	57%	57%	70%
	Chandpur District	42%	42%	42%	50%	56%	84%
	Chittagong District	51%	63%	63%	60%	63%	66%
	Chittagong District	35%	28%	28%	28%	27%	41%
	Comilla District	58%	60%	58%	57%	60%	73%
	Coxs Bazar District	43%	43%	45%	45%	47%	59%
	Feni District	51%	51%	51%	65%	59%	93%
	Khagrachhari District	20%	18%	18%	18%	49%	79%
	Laksmipur District	100%	97%	96%	98%	100%	80%
	Noakhali District	40%	48%	49%	47%	44%	60%
	Rangamati District	9%	9%	10%	10%	15%	75%

The above report is generated through this function. You can click on the percentage to see details.

**Organization group wise report:**

If someone wants to produce a reporting status for a specific group of organization, then this function is very useful. Suppose only upazila health complex is providing community clinic reports every month. So I want to see only upazila health complex who have submitted reports. Follow the instruction shown in the picture.

Export To Workbook

Organisation Unit Group Wise Data Entry Status For CC\_Upazila\_report

■ Completed (75+)  
■ Partially Completed (41 - 75)  
■ Not Completed (1 - 40)  
■ Not Entered ( 0 )

Organisation Unit Group : Upazila Health Complex

OrgUnitGroup	GroupMember	Jul-2013	Aug-2013	Sep-2013
Upazila Health Complex		75	50	0
	Pathargatha UHC	0	0	0
	Amtali UHC	100	100	0
	Betagi UHC	100	0	0
	Bamna UHC	100	100	0

## Pivot Table overview

The pivot table module enables users to create pivot tables, using all available data dimensions in DHIS 2. A pivot table is a dynamic tool for data analysis which lets you quickly summarize and arrange data according to its dimensions. Examples of data dimensions in DHIS 2 are data elements (explaining what the data means), periods (representing the time aspect) and the organisational hierarchy (representing the geographical location of the data). From these dimensions you can freely select dimension items to include in the pivot table.

A pivot table can arrange data dimensions on columns, rows, and as filters. When you place a data dimension on columns, the pivot table will display one column per dimension item. If you place multiple data dimensions on columns, the pivot table will display one column for all combinations of the items in the selected dimensions. When you place a data dimension on rows, the pivot table will display one row per dimension item in a similar fashion. The dimensions you select as filters will not be included in the pivot table, but will aggregate and filter the table data based on the selected filter items.

The workflow for creating a simple pivot table is:

Select dimension items in the left menu, for instance a few data elements.

Click "Layout" on the top menu and arrange the data dimensions as columns, rows, and filters. You can leave the selection as it is if desired.

Click "Update".

Based on the demo database, a pivot table approximately as below will be displayed. Notice how indicators are listed on columns and periods as rows.

<<< Update Layout ▾ Options ▾ Favorites ▾ Download ▾ Share ▾ <span style="float: right;">             Table Chart Map Home           </span>										
	June 2013			July 2013			August 2013			Total
	Civil Surgeon Office	District Hospital/General Hospital		Civil Surgeon Office	District Hospital/General Hospital		Civil Surgeon Office	District Hospital/General Hospital		
dogbite_ARV_stock	5,714	4,578	10,292	5,164	5,178	10,342	344	170	514	21,148
dogbite_RIG_stock	1,044	1,244	2,288	1,260	1,862	3,122	66	124	190	5,600
dogbite_patient total	8,674	15,438	24,112	8,282	10,050	18,332	524	1,024	1,548	43,992
dogbite_patient with dogbite	5,974	9,034	15,008	6,138	6,560	12,698	446	692	1,138	28,844
dogbite_patient with rabies	234	438	672	2	458	460	0	0	0	1,132
dogbite_ARV_Received	18,346	20,000	38,346	17,528	19,194	36,722	816	984	1,800	76,868
dogbite_ARV_used	12,632	15,422	28,054	12,364	14,016	26,380	472	814	1,286	55,720
dogbite_IDRV_1st dose	7,374	11,996	19,370	5,710	7,818	13,528	524	982	1,506	34,404
dogbite_IDRV_2nd dose	6,948	11,250	18,198	5,776	7,544	13,320	488	956	1,444	32,962
dogbite_IDRV_4th dose	6,700	7,718	14,418	4,656	5,332	9,988	394	376	770	25,176
dogbite_IDRV_3rd dose	8,368	10,858	19,226	5,626	7,272	12,898	446	700	1,146	33,270
dogbite_RIG_Received	1,288	2,202	3,490	1,532	2,428	3,960	100	192	292	7,742
dogbite_patient with other bite	2,700	6,404	9,104	2,144	3,490	5,634	78	332	410	15,148
dogbite_RIG_used	244	958	1,202	272	566	838	34	68	102	2,142
<b>Total</b>	<b>86,240</b>	<b>117,540</b>	<b>203,780</b>	<b>76,454</b>	<b>91,768</b>	<b>168,222</b>	<b>4,732</b>	<b>7,414</b>	<b>12,146</b>	<b>384,148</b>

## Using table options

Several table options are available when working with a pivot table. Open the options screen by clicking on "Options" in the top menu. The following options are available:

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

**Show sub-totals:** Display 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. Note that subtotals will be hidden for columns or rows if there is only one selected dimension, as the values in that case are equal to the subtotals.

**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.

**Display density:** Controls the size of the cells in the table. Can be set 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".

## Overview of data quality checks

Ensuring data quality is a key concern in building an effective HMIS. Data quality has different dimensions including:

**Correctness:** Data should be within the normal range for data collected at that facility. There should be no gross discrepancies when compared with data from related data elements.

**Completeness:** Data for all data elements for all health facilities should have been submitted.

**Consistency:** Data should be consistent with data entered during earlier months and years while allowing for changes with reorganization, increased work load, etc. and consistent with other similar facilities.

**Timeliness:** All data from all reporting orgunits should be submitted at the appointed time.

## Data quality checks

Data quality checking can be done through various means, including:

At point of data entry, the software can check the data entered to see if it falls within the **min-max ranges** of that data element (based on all previous data registered).

Defining various **validation rules**, which can be run once the user has finished data entry. The user can also check the entered data for a particular period and Organization Unit(s) against the validation rules, and display the violations for these validation rules.

**Analysis of data sets**, i.e. examining gaps in data.

**Data triangulation** which is comparing the same data or indicator from different sources.

## Data Visualizer overview

The data visualizer module enables users to easily create dynamic data analysis and visualizations through charts and data tables. You can freely select content (like indicators, periods and organisation units) for your analysis. This module can be accessed by going to "Services - Data Visualizer" in the main menu. The image below shows the viewport of the module. For a quick start:

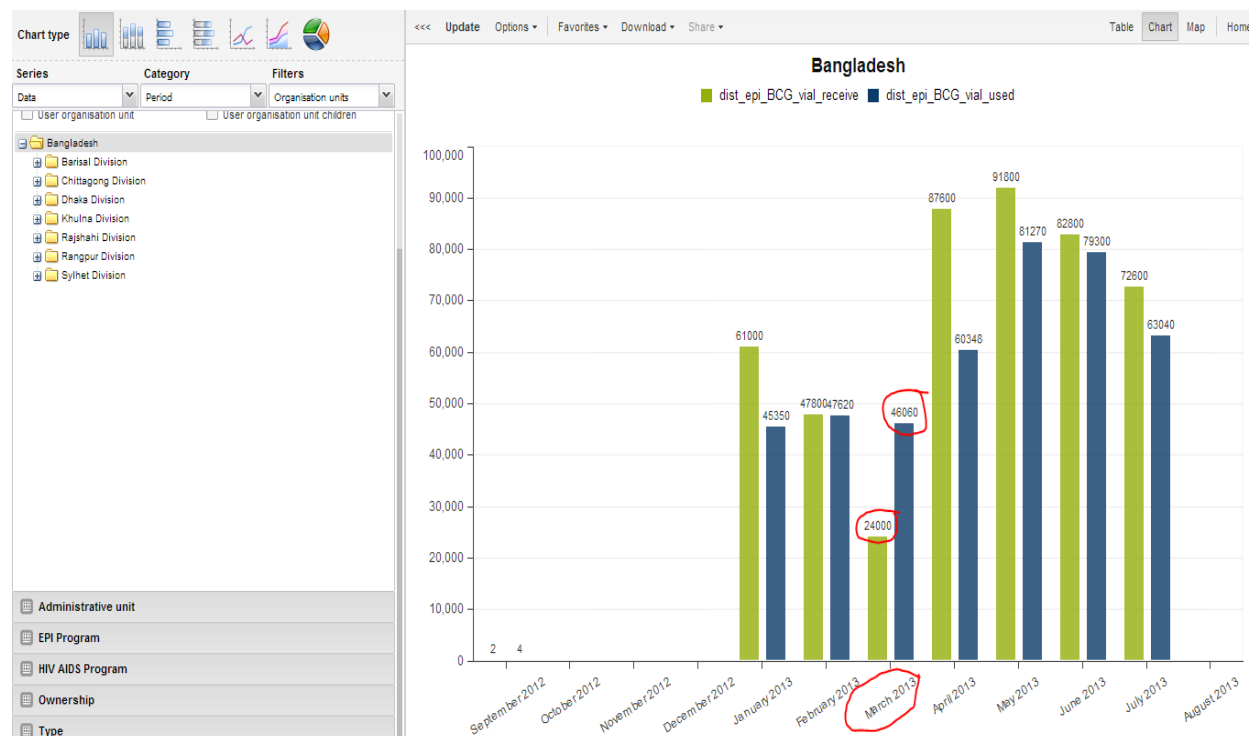
Look under the "Indicator" heading and select an indicator group from the list of groups.

Look under "Available indicators" and select a few indicators from the list by double-clicking on them.

Click "Update" in the top bar and see the chart unfold.

The data visualizer is designed firstly to be easy-to-use - you can simply select the indicators, data elements, periods and organisation units you want to include and click "Update" to get your

visualization. Secondly it is designed to be fast and work well over poor Internet connections - charts are generated in the web browser and very little data is transferred over the Internet.



## Selecting chart type

The visualizer module provides seven different chart types, each with different characteristics. You can select the type of your chart by clicking on one of the icons in top left bar titled "Chart type".

**Column chart:** Chart which displays information as vertical rectangular columns with lengths proportional to the values they represent. Useful e.g. for comparing performance of different districts.

**Stacked column chart:** Chart with vertical rectangular columns where bars representing multiple categories are stacked on top of each other. Useful e.g. for displaying trends or sums of related data elements.

**Bar chart:** Same as column chart, only with horizontal bars.

**Stacked bar chart:** Same as stacked column chart, only with horizontal bars.

**Line chart:** Graph which displays information as a series of points connected by straight lines. Also referred to as time series. Useful e.g. to visualize trends in indicator data over multiple time periods.

**Area chart:** Chart which is based on line chart, with the space between the axis and the line filled with colors and the lines stacked on top of each other. Useful for comparing the trends of related indicators.

**Pie chart:** Circular chart divided into sectors (or slices). Useful e.g. to visualize the proportion of data for individual data elements compared to the total sum of all data elements in the chart.

## Selecting series, category and filter

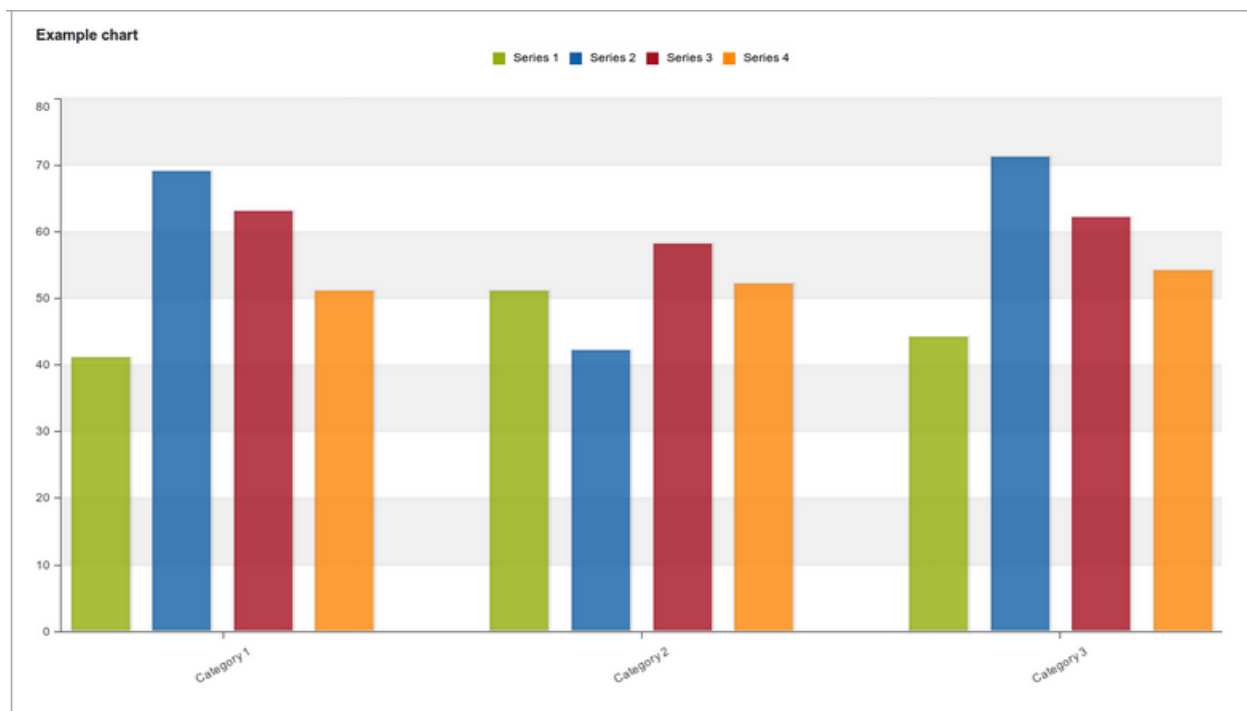
This section lets you define which dimension of the data you want to appear as series, category and filter. This asks for a closer explanation. Dimension in this regard refers to the elements which describe the data values in the system. We have three main dimensions in the system:

**Data:** Includes data elements, indicators and datasets (reporting rates), describing the phenomena or event of the data.

**Periods:** Describes when the event took place.

**Organisation units:** Describes where the event took place.

The visualization module lets you use these dimensions completely flexible in terms of appearing as series, categories and filter. Understanding these concepts is most easily done by looking at the screenshot from the opening page below:



More formally this can be described as following:

**Series:** A series is a set of continuous, related elements (e.g. periods or data elements) which you want to visualize in order to emphasize trends or relations in its data.

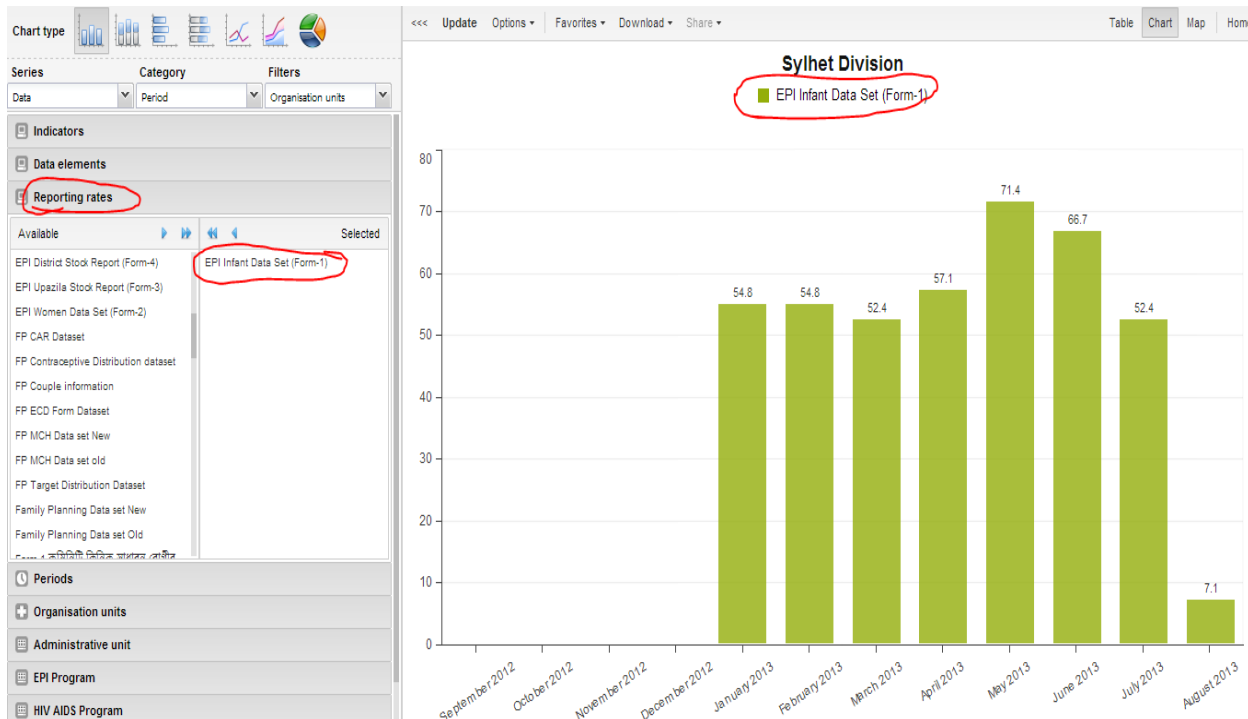
**Categories:** A category is a set of elements (e.g. indicators or organisation units) for which you want to compare its data.

**Filter:** Since most charts are two-dimensional, a filter must be used on the third dimension in order to use only a single element for the chart to become meaningful.



## Selecting reporting rates

The visualizer can display reporting rates in a chart, by itself or together with indicators and data elements. Reporting rates can be selected by clicking at the "Reporting rates" header. Reporting rates are defined by data sets. It can be selected by double-clicking in the list of available data sets to the left.



## Selecting relative periods

To select relative periods click on the "Relative periods" header. You can select any number of periods from the set of periods listed under the header, such as "Last month", "Months this year" and "Last 5 years". The names should be fairly self-descriptive. All periods are relative to the current date, meaning that if the current month is March and you select "Last month", the month of February will be included in the chart.

## Selecting organisation units

You can select which organisation units to include in the chart by clicking the "Organisation units" header. This section features a tree including all organisation units in the system. You can select any of the organisation units by clicking them. If you want to select multiple, arbitrary organisation units you can press the Ctrl button and then click away in the tree. If you want to include all organisation units existing directly under a specific organisation unit (the children of the parent organisation unit in other terms) you can right-click on the organisation unit and select "Select all children". You can also automatically select all organisation units in a particular organisation unit group. Click the "Group" button on the far right of the toolbar above the tree and select a group in the drop down list.

This panel also features two checkboxes. Checking "User organisation unit" will disable the organisation unit tree and give you the organisation unit that is related to the current/logged in user instead. This is also useful for administrators as they can create a meaningful "system" favorite with this option checked and all users will find their respective organisation unit when they open it. The the same concept goes for the "User organisation unit children" checkbox.

## Selecting organisation unit groups

You can break down the national level into organisation unit groups by simply selecting a group set in the combo box. The groups in the selected group set will replace any selected organisation units in the organisation unit panel.

## Selecting chart options

You can set various chart options by clicking on the "Chart options" header in the panel to the left.

Show series data: Displays the corresponding value next to columns and bars in the chart.

Show trend line: The trend line will visualize how your data evolves over time - e.g. is performance improving or deteriorating. Makes sense when periods are selected as category.

Hide chart subtitle: Hides the title and subtitle of your chart.

Hide chart legend: Hides the legend and leave more room for the chart itself.

Domain axis label: Displays a label below the domain axis (also referred to as the X axis). Can give context information to the chart, e.g. the type of periods being listed.

Range axis label: Displays a label next to the range axis (also referred to as the Y axis). Can give context information to the chart, e.g. the unit of measure being used.

Target line value: Displays a horizontal line at the given domain value. Useful e.g. when you want to compare your performance to the current target.

Target line label: Displays a label next to the target line.

Base line value: Displays a horizontal line at the given domain value. Useful e.g. when you want to visualize how your performance has evolved since the beginning of a process.

Base line label: Displays a label next to the baseline.

## Displaying a chart

You can display a chart based on your selections simply by clicking the "Update" button on the top centre menu. This requires that you have selected one or more elements from all of the three dimensions - data (indicators, data elements, reporting rates), periods (relative, fixed) and organisation

units (units or groups). Note that "Months this year" from the period dimension and the root organisation unit are selected by default.

Notice that you can hide and show individual data series in the chart by clicking directly on the series label in the chart - they appear either at the top or to the right of the chart.

If you want to give the chart more space on your screen you can click on the triple left-arrow button on the top centre menu. This will collapse the left side menu. You can get this menu back by clicking on the same button again.

## Downloading chart as image or PDF

After you have rendered a chart you can save that view as file and download it to your local computer by clicking on "Save as" on the top centre menu. You can select between PNG (image) or PDF. The file will be automatically downloaded to your computer - for instance can you now embed the image file into a text document as part of a report.

## Saving chart as favorite

Once you have rendered a chart you can save it as a favorite. Click on the "Favorites" button on the top menu and then on the "Manage favorites" link. In the name field enter the desired name for your chart. By ticking the "System" checkbox the chart will be visible to all users of the system, if you do not tick it the chart will be visible only to yourself. This requires that your user account has the privilege to create system charts. You can rename any favorite by selecting it in the list, modifying its name in the name input field and clicking "Rename". You can delete any favorite by selecting it and then clicking "Delete".

These favorite charts can later be included on your personal dashboard. After saving you can navigate to the dashboard module, click on the "Insert" link over the chart areas and select your preferred chart.

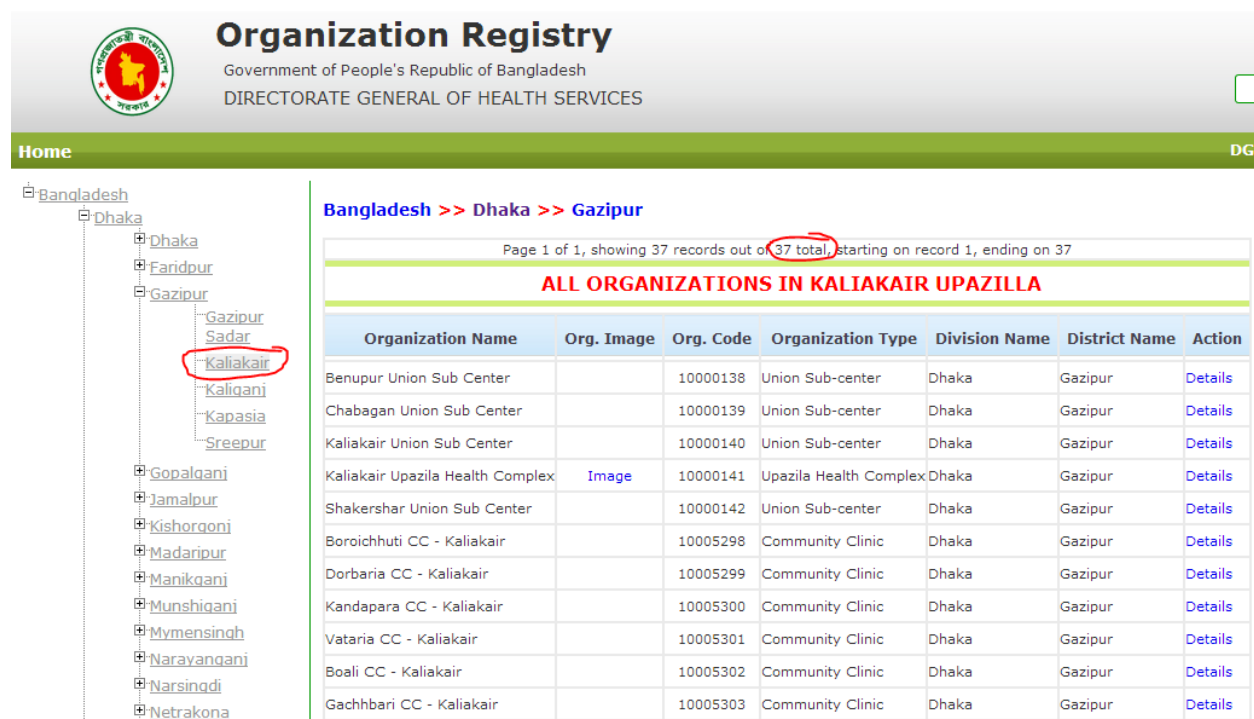
The screenshot displays a data visualization interface. On the left, there is a sidebar with 'Reporting rates' and 'Organisation units' sections. The 'Organisation units' section shows a tree view for Bangladesh, including divisions like Barisal, Chittagong, Dhaka, Khulna, Rajshahi, Rangpur, and Sylhet. The main area shows a bar chart with a y-axis ranging from 0 to 80. A 'Manage favorites' dialog box is open on the right, listing various reports such as 'Basill CC report Apr-June', 'Basill EPI', 'Child Death Report Last 3 m\_barlekha', etc. The 'Add new' button in the dialog is circled in red. The top menu includes 'Update', 'Options', 'Favorites', 'Download', and 'Share'.

## Sharing interpretations

For certain analysis-related resources in DHIS, like charts and report tables, one can share a data interpretation. An interpretation is simply a link to the relevant resource together with a text expressing some insight about the data. If you want to share a chart interpretation you need to first save the chart you want to share as a favorite. Then, without making any changes to the chart, click the "Share" button in the toolbar. A window will open up and this is where you write your interpretation. When you are done, click share button in the bottom right corner of the window. The window will close automatically and if the interpretation was shared successfully you will find a notification on the bottom toolbar.

## How to register an organization in the system

Go to the DGHS website and click on the organization registry (<http://app.dghs.gov.bd/orgregistry/>).



The screenshot shows the Organization Registry interface. At the top, there is a logo of the Government of Bangladesh and the text "Organization Registry" and "DIRECTORATE GENERAL OF HEALTH SERVICES". Below this is a navigation menu with "Home" and "DGI". The main content area displays a breadcrumb trail: "Bangladesh >> Dhaka >> Gazipur". A tree view on the left shows the hierarchy of districts and upazilas, with "Kaliakair" highlighted. The main table lists organizations in Kaliakair Upazilla. The table has columns for Organization Name, Org. Image, Org. Code, Organization Type, Division Name, District Name, and Action. The table contains 13 rows of data, including Union Sub-centers and Community Clinics.

Organization Name	Org. Image	Org. Code	Organization Type	Division Name	District Name	Action
Benupur Union Sub Center		10000138	Union Sub-center	Dhaka	Gazipur	<a href="#">Details</a>
Chabagan Union Sub Center		10000139	Union Sub-center	Dhaka	Gazipur	<a href="#">Details</a>
Kaliakair Union Sub Center		10000140	Union Sub-center	Dhaka	Gazipur	<a href="#">Details</a>
Kaliakair Upazila Health Complex	<a href="#">Image</a>	10000141	Upazila Health Complex	Dhaka	Gazipur	<a href="#">Details</a>
Shakershar Union Sub Center		10000142	Union Sub-center	Dhaka	Gazipur	<a href="#">Details</a>
Boroichhuti CC - Kaliakair		10005298	Community Clinic	Dhaka	Gazipur	<a href="#">Details</a>
Dorbaria CC - Kaliakair		10005299	Community Clinic	Dhaka	Gazipur	<a href="#">Details</a>
Kandapara CC - Kaliakair		10005300	Community Clinic	Dhaka	Gazipur	<a href="#">Details</a>
Vataria CC - Kaliakair		10005301	Community Clinic	Dhaka	Gazipur	<a href="#">Details</a>
Boali CC - Kaliakair		10005302	Community Clinic	Dhaka	Gazipur	<a href="#">Details</a>
Gachhbari CC - Kaliakair		10005303	Community Clinic	Dhaka	Gazipur	<a href="#">Details</a>

Please check the organization information in your district and upazila and cross check all organization with your DHIS organization list as well. There is button for applying for new organization in this site. Any type of organization can send a request through this application. DGHS will check the information and will register the organization creating a unique organization code.

## How to change organization information

If you want to change the organization information, you need to log in to the Human resource system where you can change your organization information.

## Data Quality Audit

The MIS-DGHS is going to start Data quality self assessment (DQSA) very soon. It will be a web based tool to check data in different organization.

Every month the members of monitoring team will visit different organization and will fill up a form during the visit. They will collect the reported data from the website and will check with the field register. There will also check the timeliness and supervision and other important issue related to data quality.

## How to send a feedback

It is very important to send feedback to the reporter. The ICT focal person and the team member will send a feedback to all the respective organization a feedback on their reporting.

There are two types of feedback:

1. Over telephone (please see the phone number and email address from the Local health bulletin)
2. Through sending email.

Most of the time they should start with the encouraging word and thanks giving words. An example of feedback email is drafted below.

### Subject: Feedback on EPI report status August 2013, Chandpur District

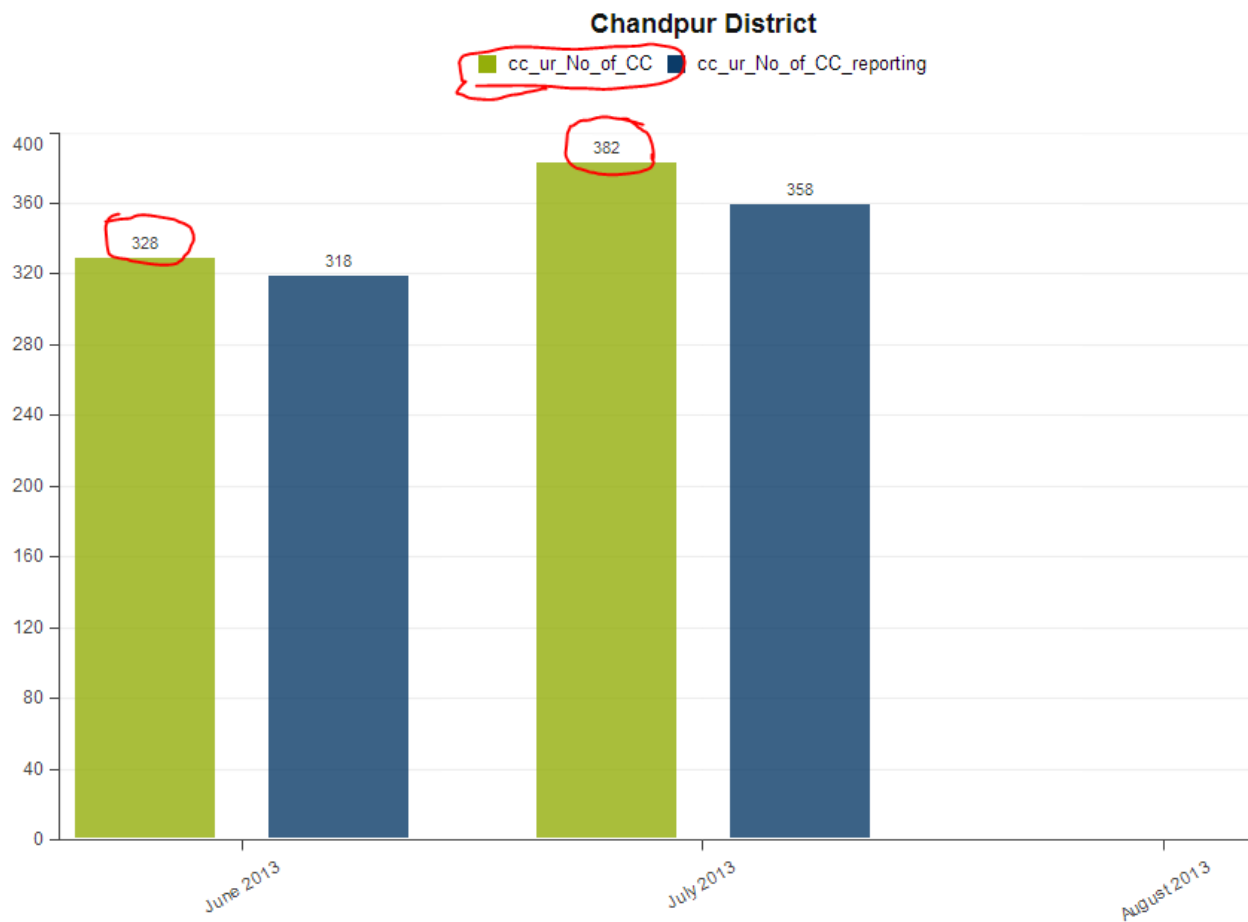
#### Dear Colleagues

I am very glad that most of you have successfully submitter the report of EPI from the month of August 2013. Please see the status of the monthly report submission.

#### Chandpur District - EPI Infant Data Set (Form-1) - August 2013

Name	Actual Reports	Expected Reports	Percent	Reports On Time	Percent On Time
Kachua CP Upazila	1	1	100	1	100
Matlab (North) Upazila	1	1	100	1	100
Matlab (South) Upazila	1	1	100	1	100
Sharasti Upazila	1	1	100	1	100
Haim Char Upazila	1	1	100	1	100
Faridganj Upazila	0	1	0	0	0
Hajiganj Mun.	0	1	0	0	0
Chandpur Sadar Upazila	0	1	0	0	0
Chandpur Mun.	0	1	0	0	0
Hajiganj Upazila	0	1	0	0	0
Chandpur District	5	10	50	5	50

The red marked upazilas are requested to send their as soon as possible.



The above report is showing that the number of community clinic has increase which is not possible. Please check the data entry. The number of community clinic is fixed but the reporting number of community clinic will vary in every month according to their reporting status. Most probably the error came while entering the data.

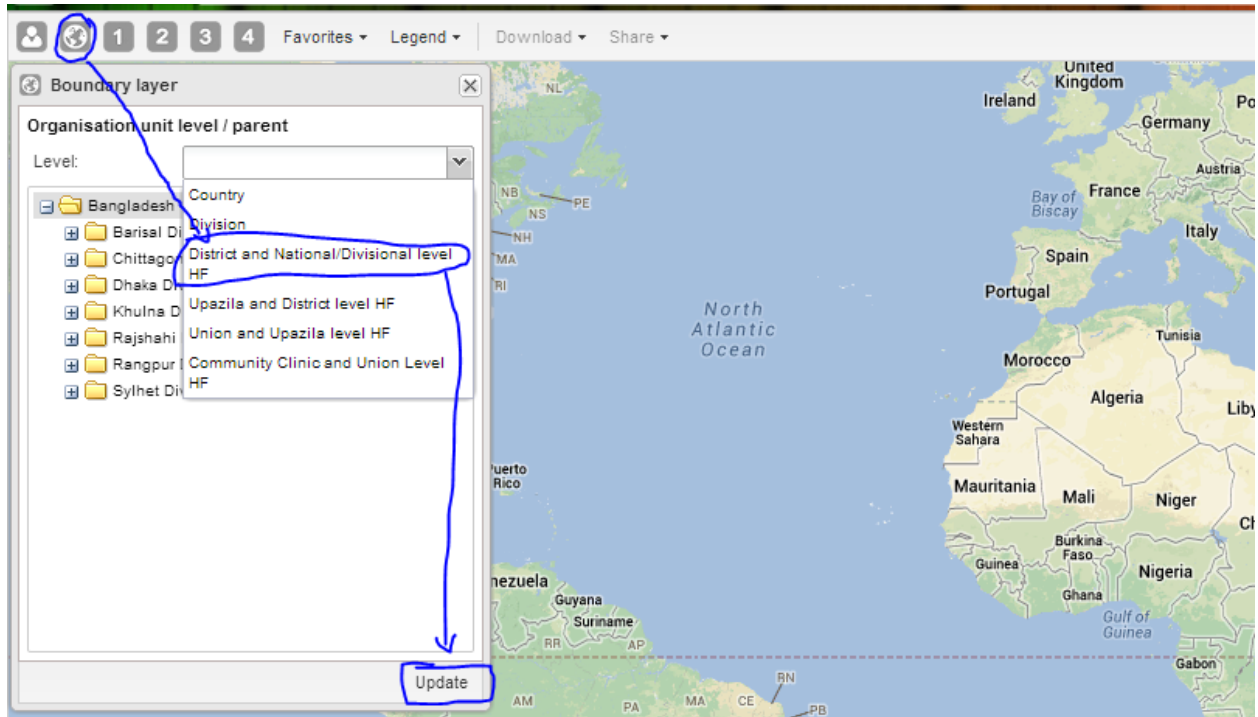
You are kindly requested to check the data of June 2013 and July 2013.

Regards

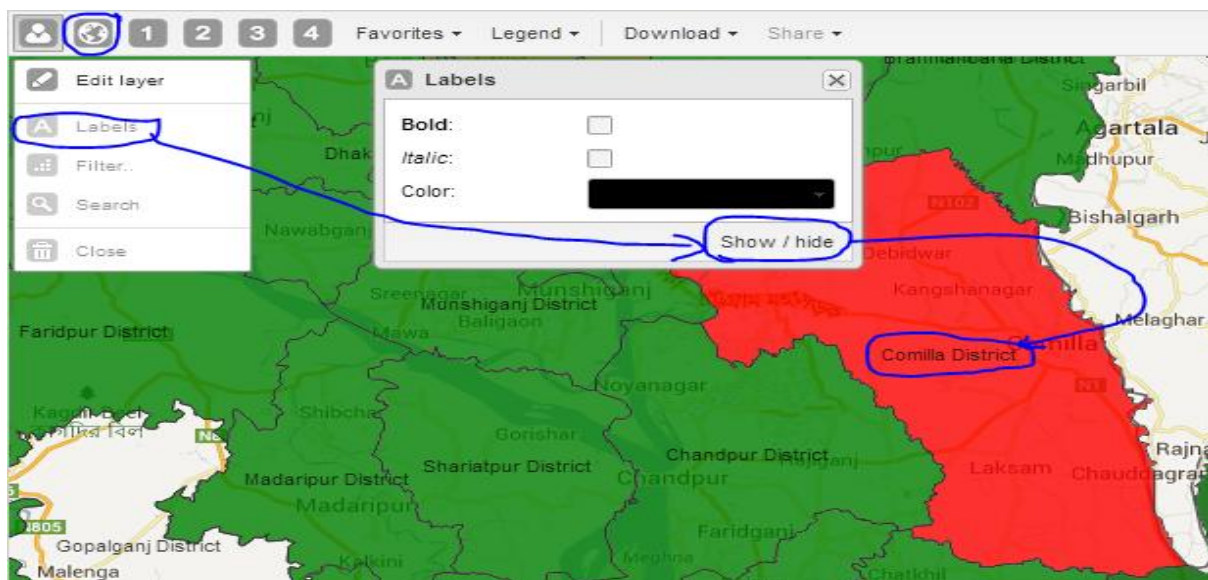
Dr. X  
ICT focal person  
Chandpur District

## GIS

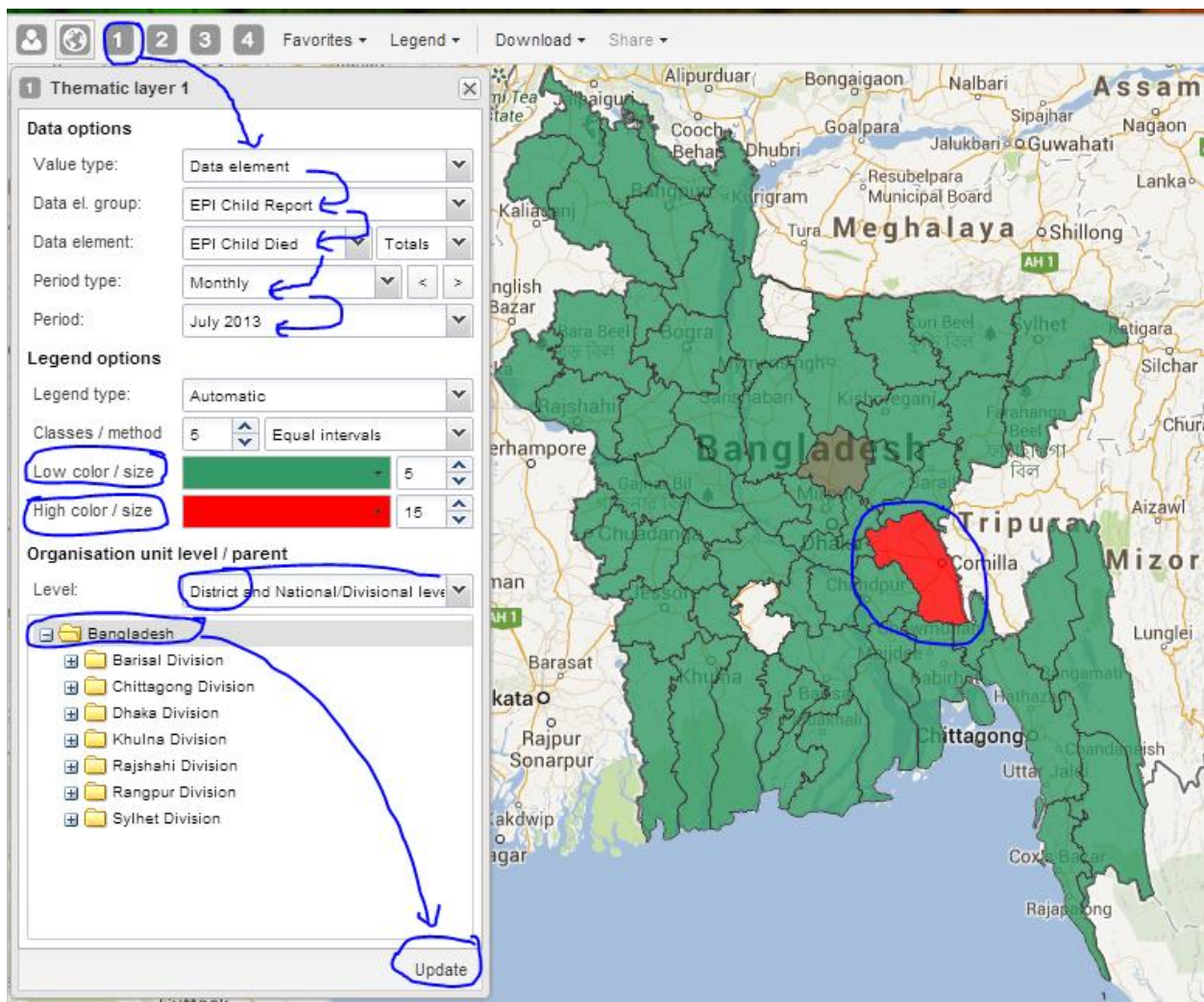
The DHIS-2 software can produce maps with the existing information. This can also show the location of the facility in the map which makes the planner easy decision making using information. For example we want to make a map with the number of death cases in the district. Please go to the service and GIS module and follow the steps shown in the diagram.



The above picture shows how to create the shape or the boundaries of the map. If you want see the name of the district follow the picture below.





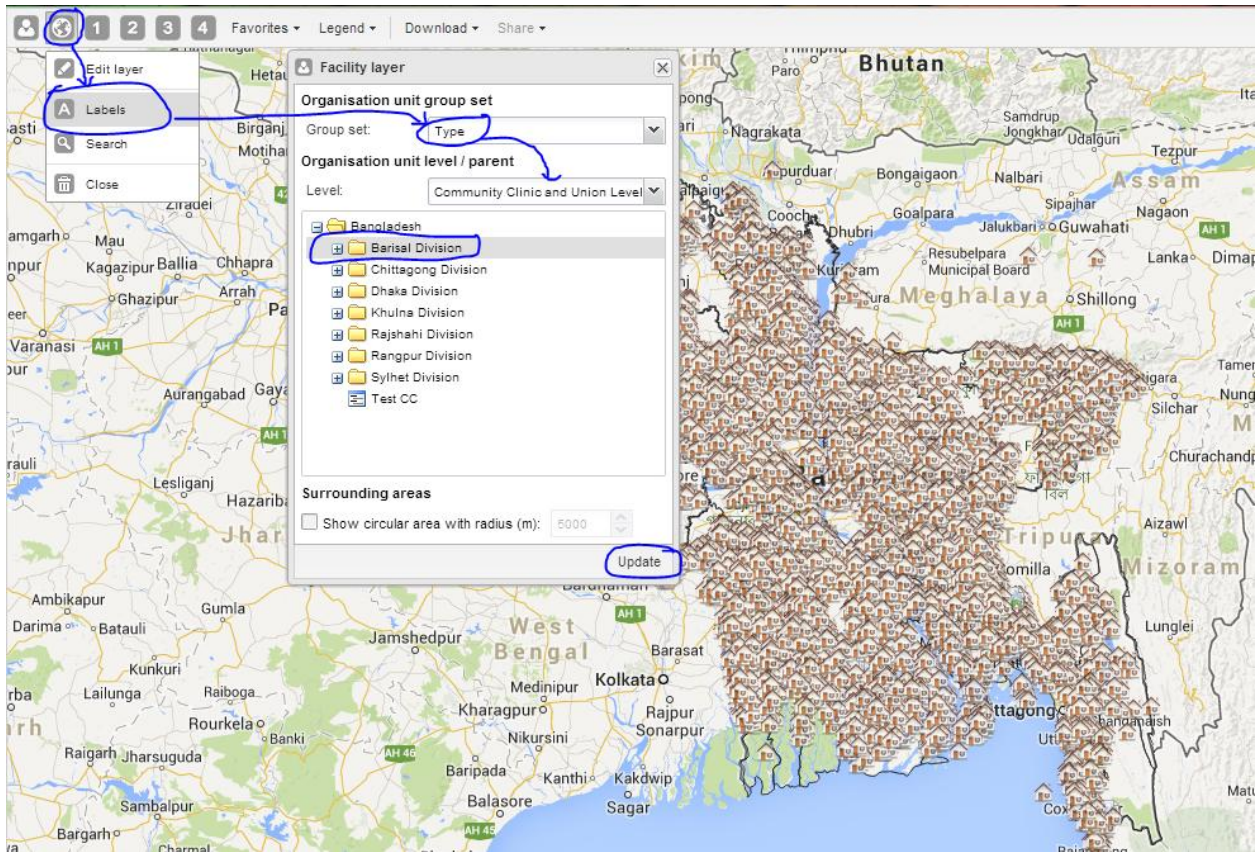


The above diagram is showing how to place information in the map. Following are the steps to create such map:

1. Select the indicator or element in the 1<sup>st</sup> box.
2. Select the element group. In the EPI child form you will get all the related elements.
3. Select the data element from the list.
4. Select period type (if the form is monthly then select monthly, if you want to see the year wise information, then select the year in this box)
5. Select the Period from the list
6. In the legend option, you can select preset legend. Here you can also change the color in the map by selecting Low color and high color. If you want select high death cases presented as Red color then select red color in the “high color/size” option.
7. Then select the level as District. If future the upazila will be available
8. Then select level from the tree in the left side.



## How to see organization in the map:



### Steps:

1. Click the facility
2. Select the level
3. Select the group set as community clinic
4. Select the organization from the left side tree
5. Then click update to see the map
6. Make it as favorite to see later