



Developing data-visualisation tools and training of health managers in using real- time information for decision-making in Bangladesh

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3rd November, Stockholm, Sweden

Outline

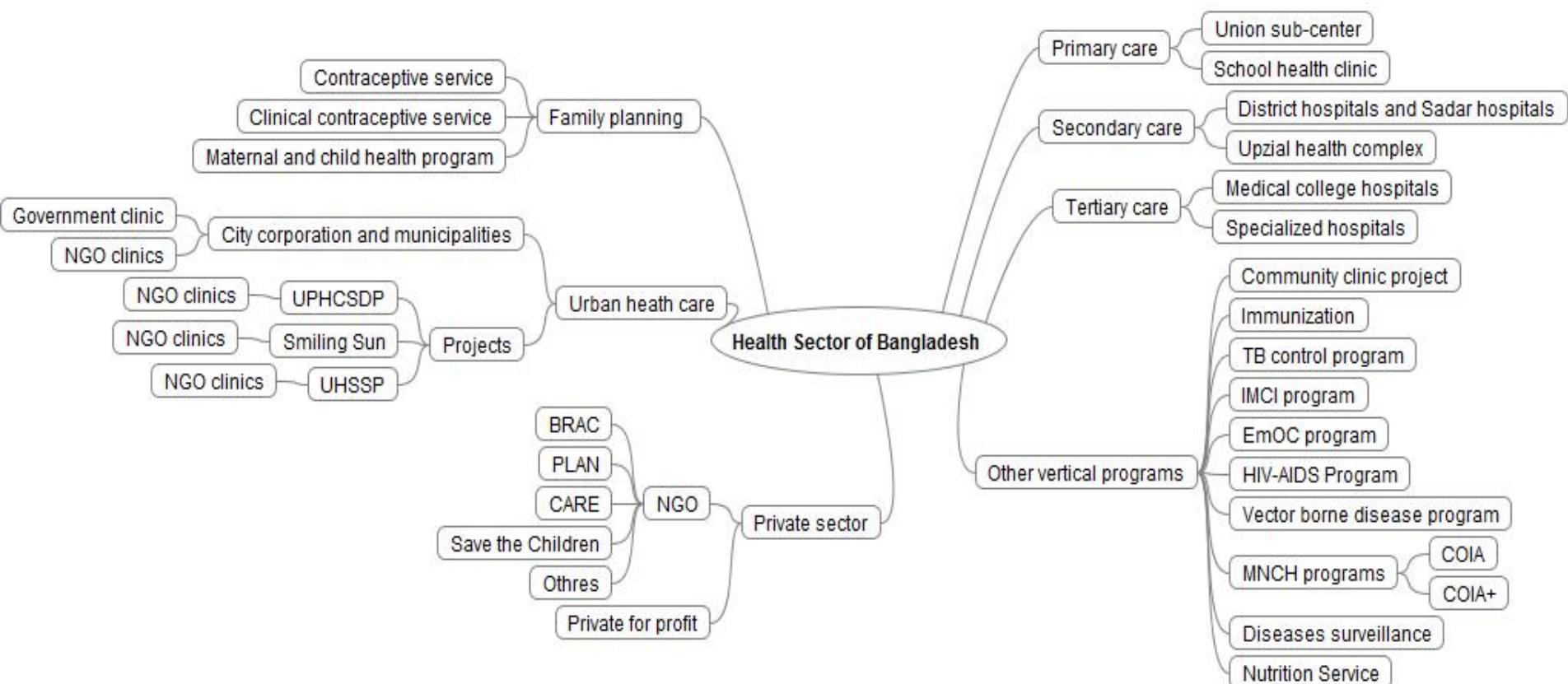
1. Bangladesh facts
2. DHIS2 and other HMIS software in Bangladesh
3. Data visualisation and public dashboards for decision making
4. Training of health managers and feedback on data quality
5. Implications
6. Challenges and way forward

Bangladesh facts

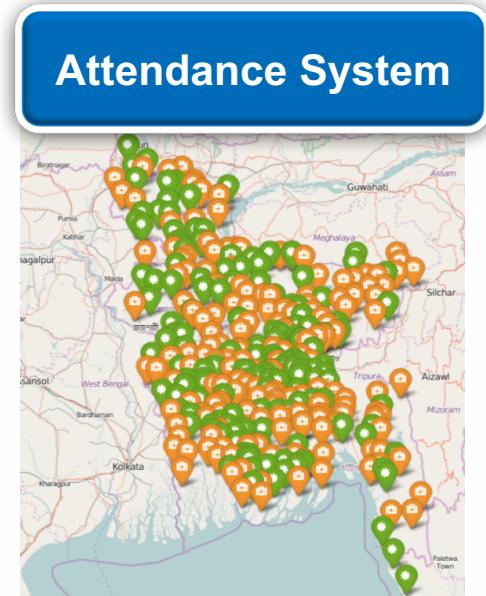
- 1,47,570 sq km
- 8 divisions, 64 districts , 489 upazilas, 4553 unions
- City corporations: 11; Municipalities : 321
- Total population (2016): 163 million
- Population density per sq.km : 1049
- Per capita GDP (2015) : US\$ 1358.8
- Global Human Development Index (2015) : 139



Pluralistic Health System in Bangladesh



DHIS2 & other software: decision making tools



A nation-wide system for online data collection



About 600 hospitals

About 19,000 day-care facilities

About 100,000 health workforce

Super-specialized Hospitals

Tertiary Hospital / Medical College Hospital

District Hospital / Medical College Hospital

Sub-district Hospital

Union Health Center (Day care)

**Community Clinic (Day care)
Community Health Workers**

Bangladesh
(Pop. ~150 million)

Divisions (7)
Pop. 23 million

Districts (64)
Pop. 2.5 million

Sub-districts (483)
Pop. 0.3 million

Unions (4,501)
Pop. 35,500

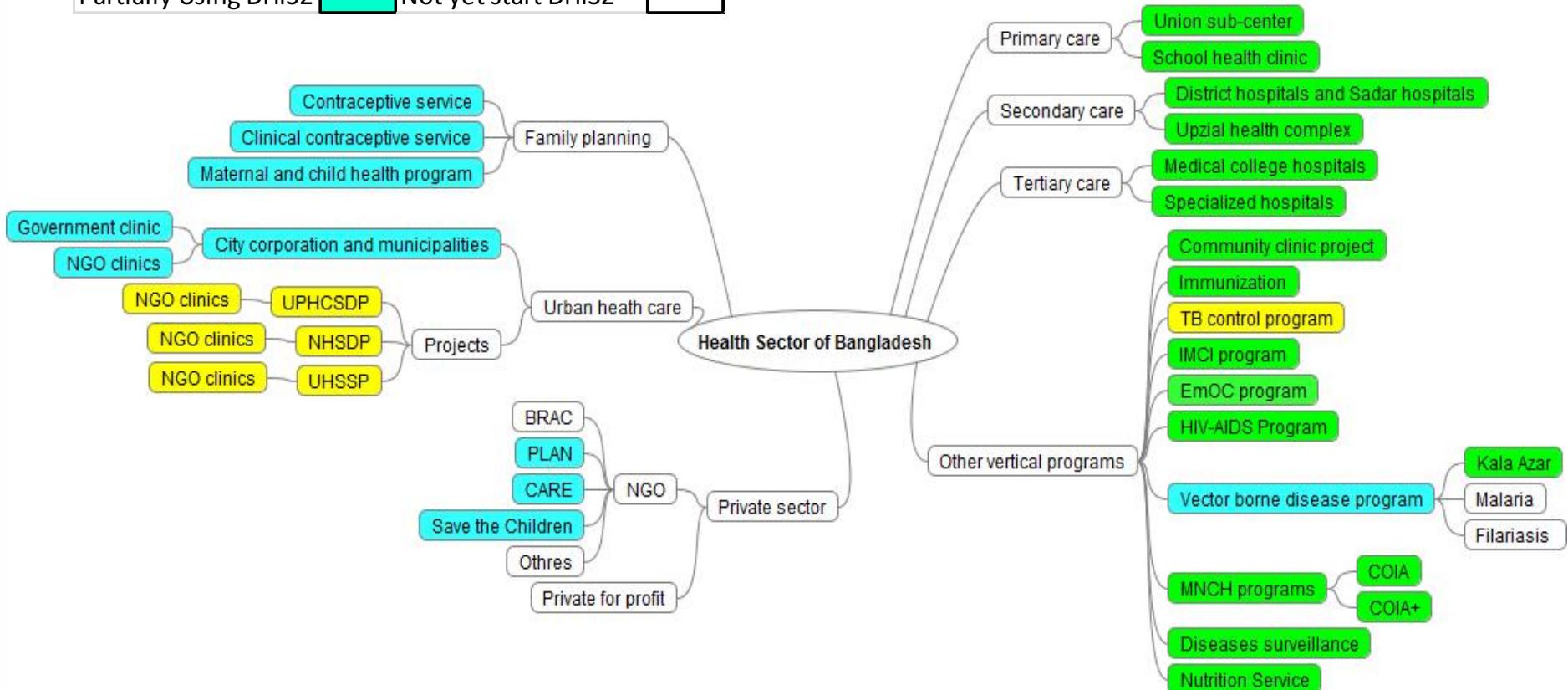
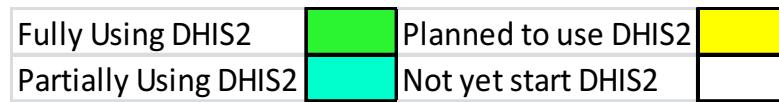
Wards (13,503)
Pop. 12,000

Internet connected
April 2009

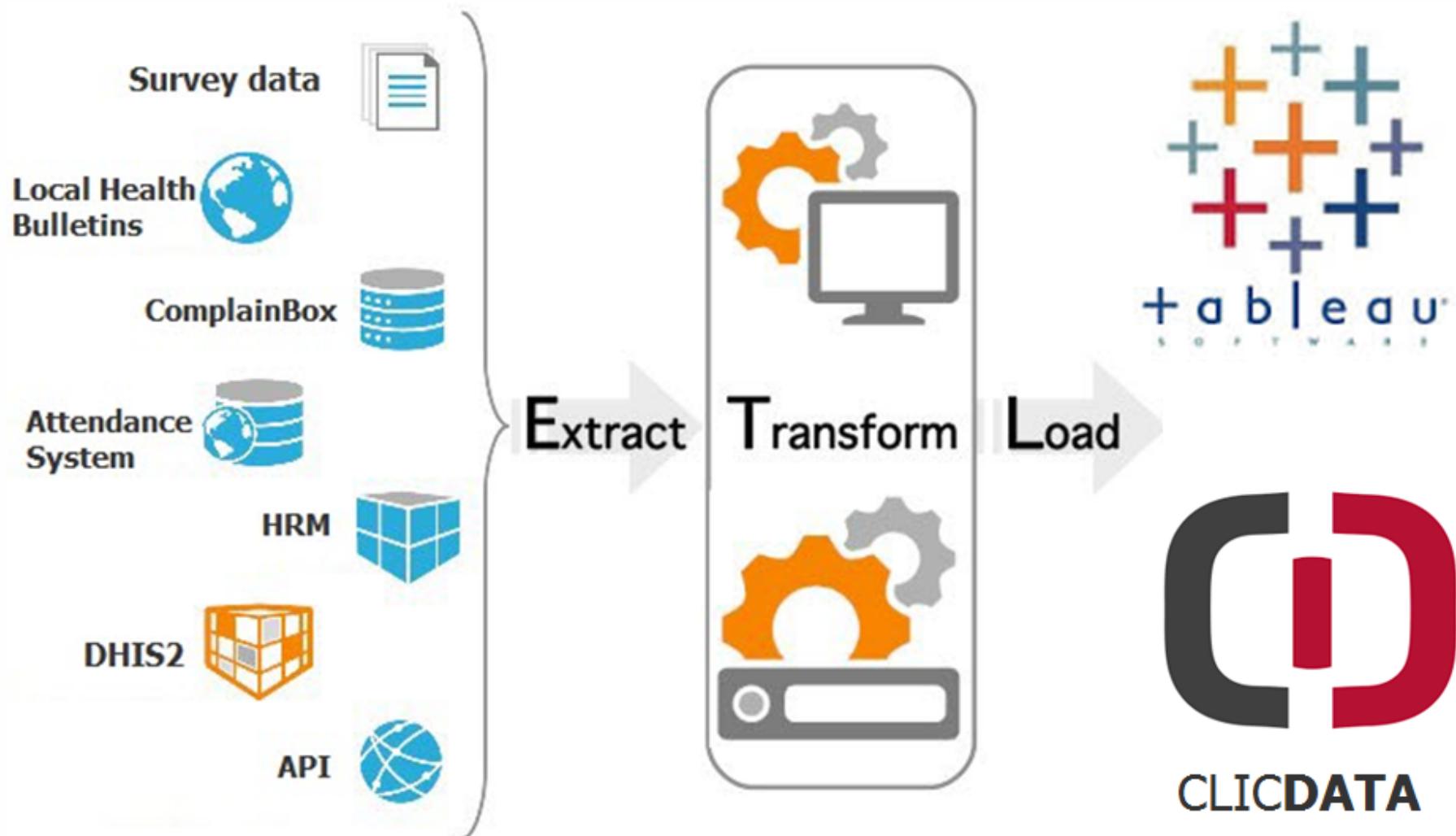
3,500

13,000 community clinics

Data collection in DHIS2 in Bangladesh



Development of Health Data-Warehouse



Innovative development of Public Web Portal

<http://103.247.238.81/webportal/pages/index.php>

Real time health information dashboard Directorate General of Health Services, Mohakhali Dhaka, Bangladesh

Guest User Online

BCG COVERAGE 100.4% Last 12 Month : DHIS2

PNEUMONIA 6.91% Last 12 Mon at facility

DIARRHEA 11.72% Last 12 Mon at facility

BIRTH REG RATE 76.98% Last 12 Month : DHIS2

of Maternal death notification at community, 2017

of Maternal death at public facility, 2017 668

of Normal delivery at public facility, 2017 221,751

of death due to road traffic injuries, 2017

of Suicidal death, 2017

Newborn received CHX(7.1%) at facility, 2017 46.1

Routine live health data

Health Workforce (HWF)

Health Facility Registry

Health Systems Strengthening

Local Health Bulletins

Health Indicators

Health Quality Improvement

Health Call Center

Accountability

DGHS Control Room

Search:

List of indicators

- Adolescent fertility (15-19)
- Antenatal care visit 4+
- Antenatal coverage
- Contraceptive prevalence rate
- Contraceptive prevalence rate (modern methods)
- Exclusive breastfeeding rate
- Infant mortality rates
- Maternal mortality ratio(BDHS)
- Maternal mortality ratio(SVR5)
- Maternal mortality ratio(UN Estimates)
- Neonatal mortality rates
- Skilled births attended

Infant Mortality Rate (IMR) per 1,000 live births

Year	IMR (per 1,000 live births)
1993	87
1997	82
2001	66
2004	65
2007	52
2011	43
2014	38
2022 (RFW Target)	31

Source (BDHS)

Previous 1 2 Next

Real time Local Health Bulletin for 13,000+ facility

Local Health Bulletin

Home > LHB

Upazila Health Complex/Office District/ General hospital Medical College Hospital PG Institute & Hospital

Community Clinic District Level Office Divisional Level Office National

Reporting Period: Feb 2017 Search

SI	Facility type	Facility (no.)	No. reported	No. not reported	% Not reported
1	Specialty Postgraduate Institute & Hospital	12	5	7	58.3
2	Medical College Hospital	15	11	4	26.7
3	General Hospital (not district hospital)	10	8	2	20.0
4	200-250 bed Hospital (not district hospital)	20	19	1	5.0
5	District Hospital	35	32	3	8.6
6	Upazila Health Complex	431	421	10	2.3
7	District Level Office	71	60	11	15.5

- Health bulletin for sub-district level monitoring
- Health bulletin for district level monitoring
- Health bulletin for divisional level monitoring

Government of the People's Republic of Bangladesh
Ministry of Health and Family Welfare

HEALTH BULLETIN

The data belong to January-December 2016
Abhoynagar Upazila Health Complex
Upazila: Abhoynagar, District: Jessore, Division: Khulna





Management Information System (MIS)
Directorate General of Health Services (DGHS)
Ministry of Health & Family Welfare (MOHFW)
Mohakhali, Dhaka-1212

Innovation of scoring health facilities for System Strengthening (HSS)

Health systems performance measurement dashboard

 Home



Upazila Health Complex



District hospital



Medical College Hospital



Super Specialized Hospital



Community Health Service



Civil Surgeon Office



Divisional Level Office

≡ Useful Links

Onsite Monitoring Tool

Assesment Period Top Division District

Rank	Upazila Health Complex
1	Kumarkhali Upazila Health Complex
2	Ramganj Upazila Health Complex
3	Sarsa Upazila Health Complex
4	Nawabganj Upazila Health Complex
5	Chowgacha Upazila Health Complex

Rank	District Hospital
1	Pirojpur District Hospital
2	Bhola District Hospital
3	Jhenaidah District Hospital
4	Lakshmipur District Hospital
5	Barguna District Hospital

Rank	Medical College Hospital
1	Shaheed Ziaur Rahman Medical College Hospital, Bogra
2	Dhaka Medical College Hospital
3	M Abdur Rahim Medical College Hospital
4	Sylhet MAG Osmani Medical College Hospital
5	Mymensingh Medical College Hospital

Rank	Specialty PG Institute & Hosp
1	National Institute of Neuro Sciences & Hospital (NINS & H)
2	National Institute of Diseases of the Chest & Hospital (NIDCH)
3	National Institute of ENT
4	Institute of Child and Mother Health, Matuail
5	National Institute of Kidney Disease and Urology

Dashboards: Newborn status in DHIS2

MOHFW- BANGLADESH
Search

Messages
Interpretations
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<
>
01. Maternal Health
02. Child Health
03. Immunization
04. Newborn
05. Nutrition
06. Logistics
07. Reporting rate

Explore | Resize | Share interpretation | Remove

Percentage of newborn who received postnatal care within two days of birth at facility

Bangladesh

Month	Percentage
January 2017	18.5
February 2017	34.6
March 2017	29.4
April 2017	34
May 2017	40.9

Percentage of newborn who received postnatal care within two days of birth at facility

Explore | Resize | Share interpretation | Remove

Percentage of newborns initiated breastfeeding within one hour after birth

Bangladesh

Month	Percentage
January 2017	29.3
February 2017	44.9
March 2017	46.5
April 2017	52.1
May 2017	66.4

Percentage of newborns initiated breastfeeding within one hour after birth

Explore | Resize | Share interpretation | Remove

Proportion of newborns delivered by SBA at facility not breathe or cry spontaneously for whom resuscitation actions using bag and mask were initiated

Bangladesh

Month	Proportion
January 2017	35.9
February 2017	49.8
March 2017	39.3
April 2017	50
May 2017	52.3

ed by SBA at facility not breathe or cry spontaneously for whom resuscitation actions using bag and m

Explore | Resize | Share interpretation | Remove

No. of newborns delivered by SBA at facility that received CHX (7.1%) to the cord after birth

No. of newborn received 7.1 Chlorhexidine in the umbilical cord

Division	No. of newborns
Dhaka Division	27,308
Chittagong Division	24,768
Rajshahi Division	11,636
Barisal Division	7,741
Khulna Division	12,928
Mymensingh Division	7,664
Sylhet Division	6,473

Explore | Resize | Share interpretation | Remove

Percentage of newborns delivered by SBA at facility that received CHX (7.1%) to the cord after birth

Bangladesh

Month	Percentage
April 2017	19.3
May 2017	19.5
June 2016	40.8
July 2016	47.9
August 2016	63.3

Explore | Resize | Share interpretation | Remove

Percentage of newborns delivered by SBA at community that received CHX (7.1%) to the cord after birth

Bangladesh

Month	Percentage
June 2016	54.3
July 2016	59.9
August 2016	58
September 2016	63.2
October 2016	61.9
November 2016	60.9
December 2016	64
January 2017	65.6
February 2017	63.7
March 2017	72.8
April 2017	72.9
May 2017	80.6
June 2016	42.4
July 2016	40.9
August 2016	47.4
September 2016	54.1
October 2016	57.7

Dashboards: Health-Workforce

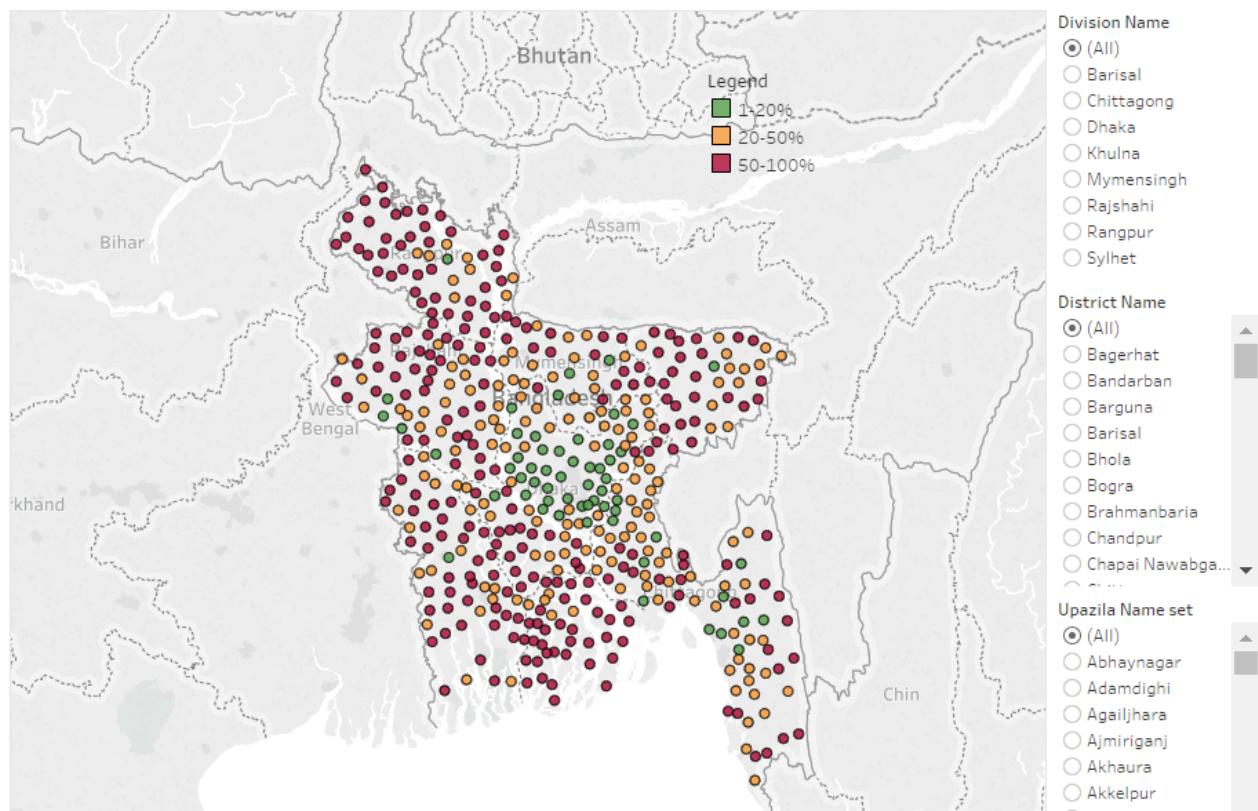
Upazila wise physician distribution from HRM

 Home > Health Work Force

Upazila-wise vacancy rate (%) of doctors	Upazila-wise distribution of UHFPO	Upazila-wise distribution of RMO	Upazila-wise distribution of Jr. Consultants	Upazila-wise distribution of Obs-Gyne & Anesthetist	Upazila-wise distribution of Grade 9 doctors	Upazila-wise distribution of 33rd BCS doctors	Summary
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Summary (Bangladesh)

Total Sanctioned	10,536
Total Available	5,437
Total Vacant	5,099
Vacancy (%)	48.4
RMO Available	207
UHFPO Available	454
Jr Consultant Sanctioned	2,702
Jr Consultant Available	1,079
Jr Consultant Vacant	1,623
Jr Consultant Vacancy (%)	60.1
Jr. Consultant Anesthetist Available..	179
Jr. Consultant Obs-Gyne Available	220
Grade 9 Doctor Sanctioned	7,329
Grade 9 Doctor Available	3,886



Dashboards: Biometric Attendance System

Real time health information dashboard Directorate General of Health Services, Mohakhali Dhaka, Bangladesh

Attendance Summary

* Some staffs work in roster. They might be available later.

Reporting Period

10/26/2017

10/26/2017

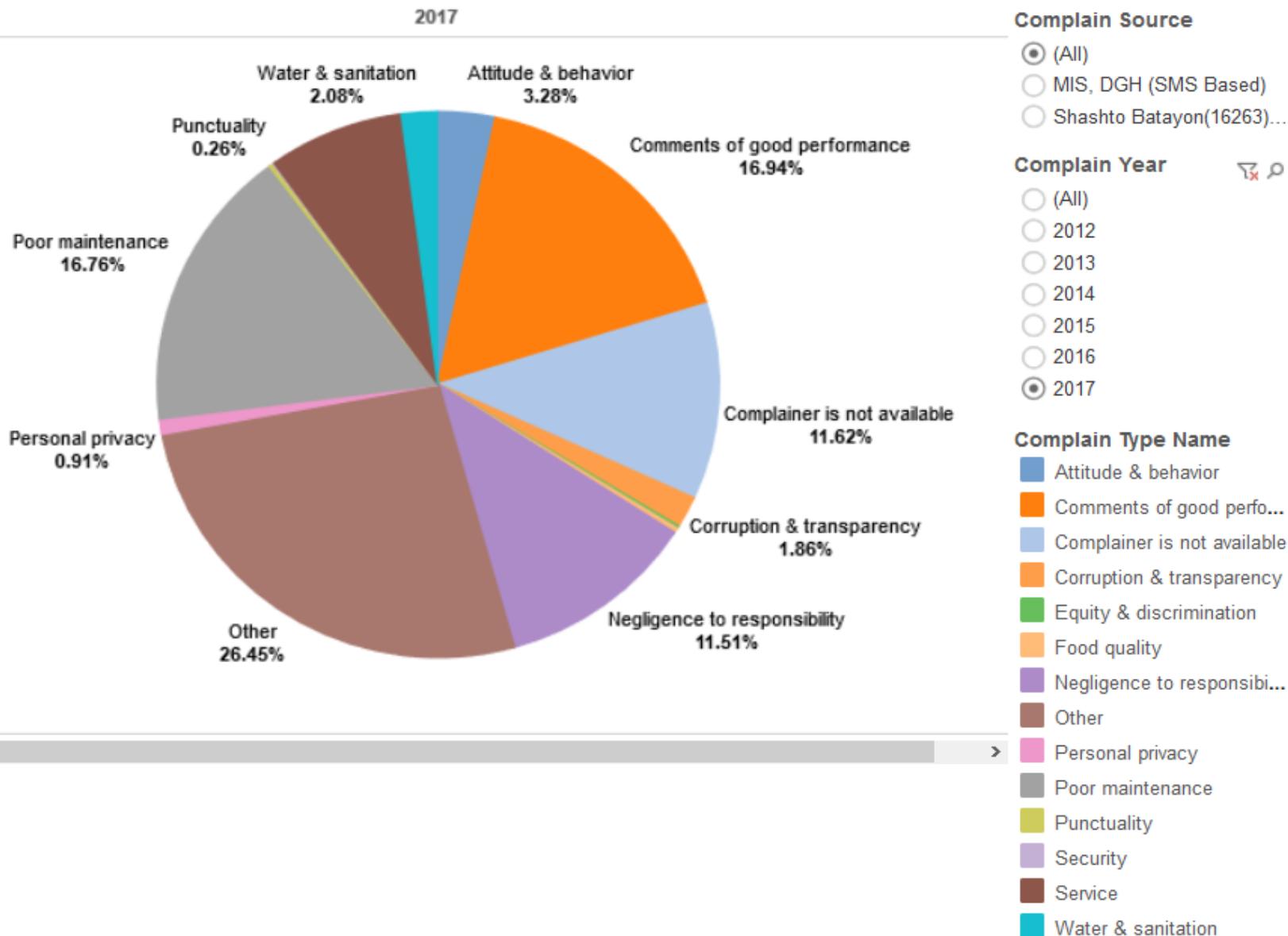
Search

last updated at

October 26, 2017 10:10:10 am

S1	Division	Orgs. with functioning attendance system	Orgs. sending data	No. of Posts			Vacancy(%)	No. of staffs			Attendance* (%)	View
				Sanctioned	Filled	Vacant		Rgd. in attendance system	Present*	Absent		
1	Barisal	40	28	5,756	4,041	1,715	29.79	1,712	878	834	51.29	Trend
2	Chittagong	94	36	14,128	9,627	4,501	31.86	1,685	702	983	41.66	Trend
3	Dhaka	91	59	22,573	17,668	4,905	21.73	4,221	2,173	2,048	51.48	Trend
4	Khulna	60	47	8,947	6,116	2,831	31.64	3,122	1,577	1,545	50.51	Trend
5	Mymensingh	33	21	5,061	3,653	1,408	27.82	1,199	492	707	41.03	Trend
6	Rajshahi	64	28	9,495	6,940	2,555	26.91	1,515	722	793	47.66	Trend
7	Rangpur	58	25	7,675	5,532	2,143	27.92	1,428	598	830	41.88	Trend
8	Sylhet	36	19	5,009	3,138	1,871	37.35	969	455	514	46.96	Trend
	Total	476	263	78,644	56,715	21,929	27.88	15,851	7,597	8,254	47.93	

Dashboards: Complain and suggestion system by citizen



Dashboard: 24/7 call center: 16263

Real time health information dashboard

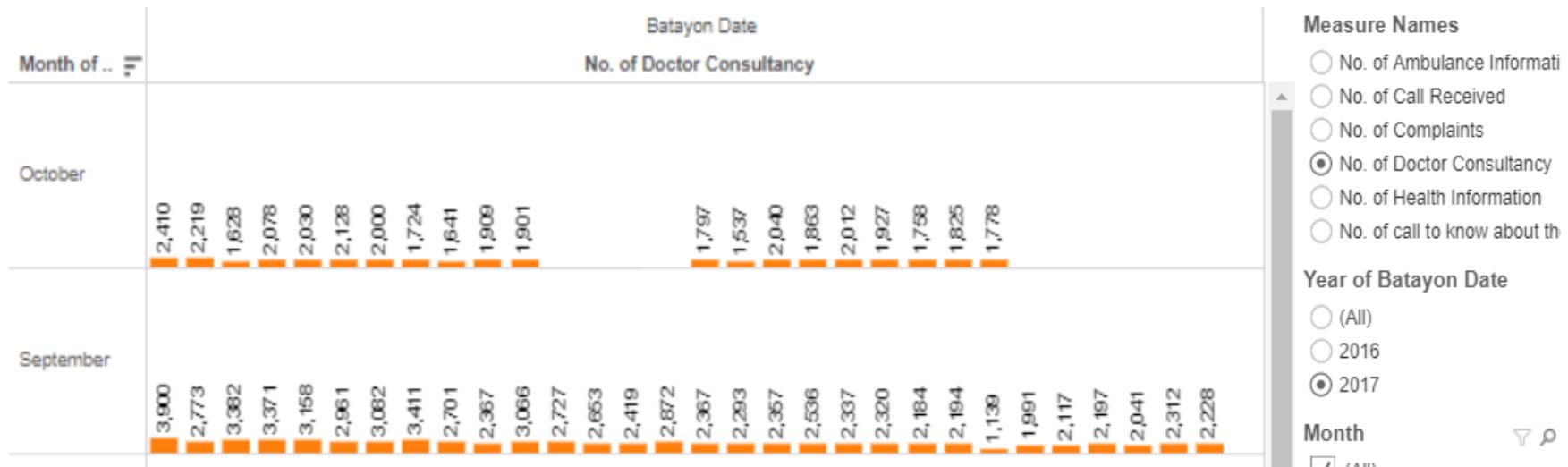
Directorate General of Health Services, Mohakhali Dhaka, Bangladesh

Shastho Batayon (16263) from Call Center

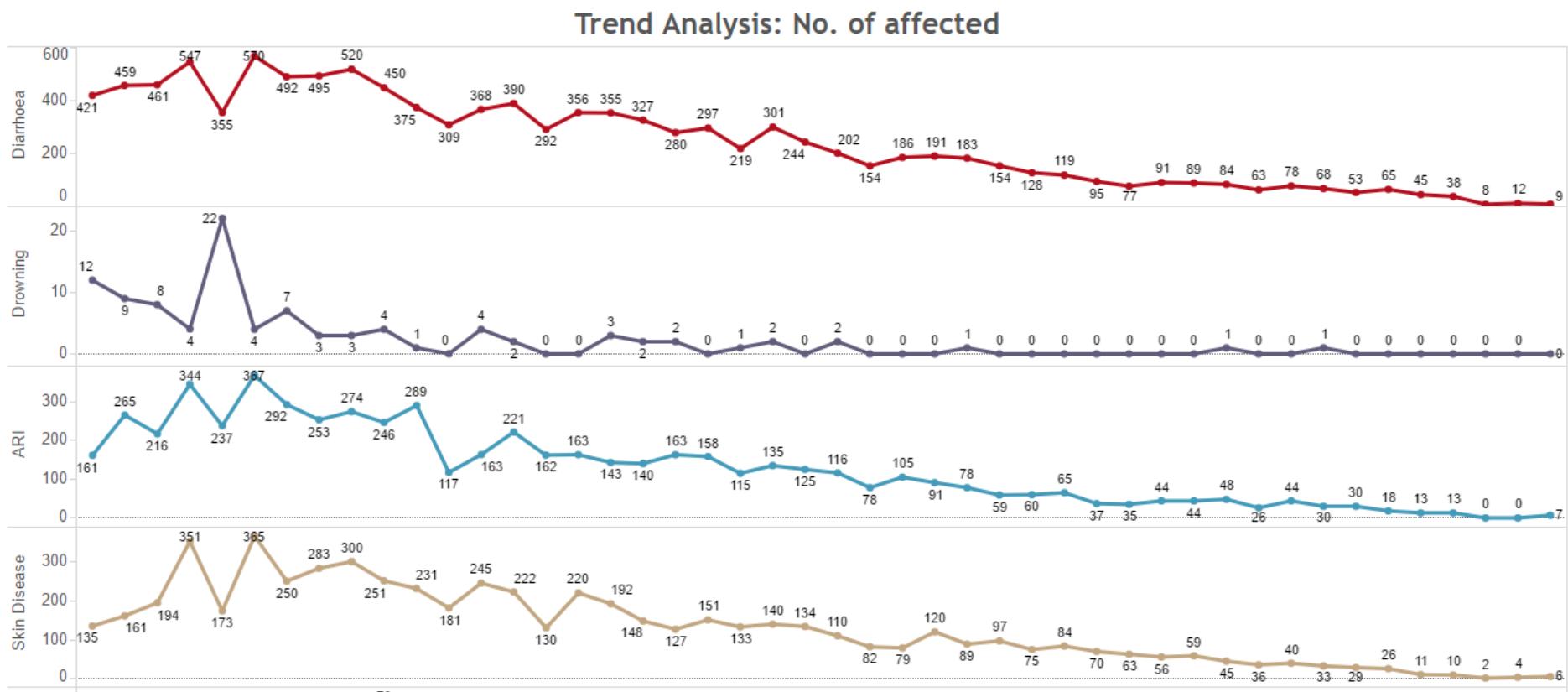


Total Saystho
Batayan Information
(Click +sign to drill)

Saystho Batayan
Information compare
month wise



Emergency Preparedness management by DHIS2



<http://103.247.238.81/webportal/pages/flood.php>

Status report of Rohingya influx from Myanmar in Cox's Bazar

Unregistered Rohingya Myanmar Nationals in Bangladesh Health situation & Interventions Update

Date: 02 November 2017



603,000

Total new influx Since 25 August 2017



40% in 3 settlements

Balukhali, Leda & Kutupalong makeshift settlements

Health Interventions					
MR Vaccine	Oral Polio Vaccine	Vitamin A	Oral Cholera Vaccine	SAM	MAM
135,519	72,334	72,064	700,487	4,079	9,628
No. of population aged 1 to 15 year received	No. of U5 children received	No. of U5 children received	1 years and above	Reported from medical camp	Reported from medical camp

Cumulative number of medical consultations given for different diseases					
Diarrhoea	RTI	Injury	Skin Infection	ANC	PNC
44,586	62,978	6,435	26,194	6,383	659

Support to develop DHIS2 e-Learning platform

dhis2

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eLearning Course on District Health Information System(DHIS2)



What is DHIS2?

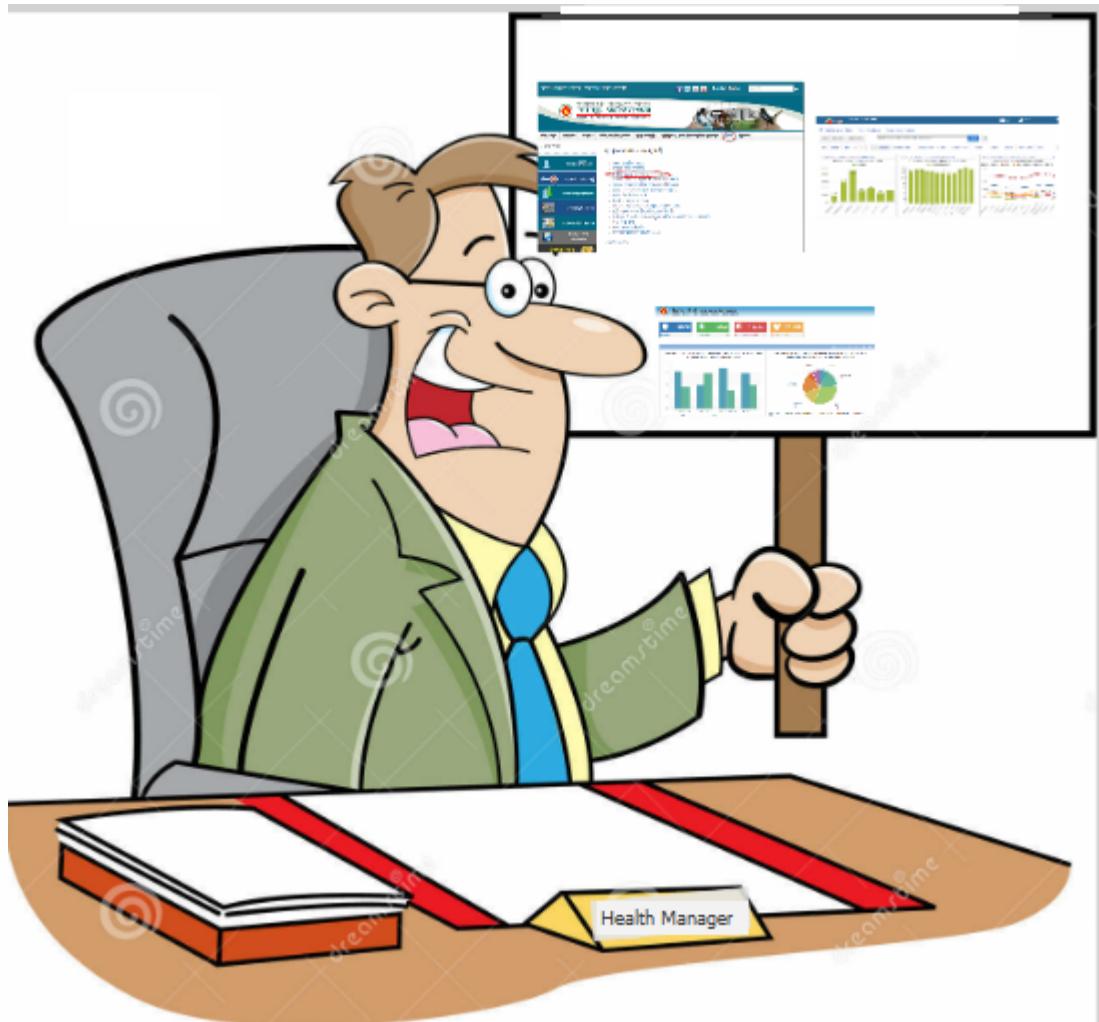
DHIS 2 is a tool for collection, validation, analysis, and presentation of aggregate statistical data, tailored (but not limited) to integrated health information management activities. It is a generic tool rather than a pre-configured database application, with an open meta-data model and a flexible 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 with interoperability between users and programs.

Capacity strengthening of Health Managers, Statisticians and IT focal for evidence use



- More than 700 personnel) in last two years
- Monthly review meeting : divisional, District, and sub-district
- National Weekly meeting with Line directors through Skype calls

Data visualization: how it helps managers

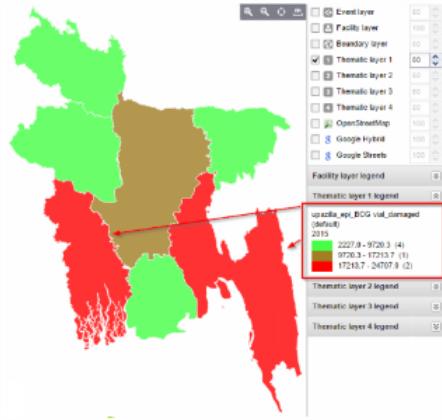


It is possible for health manager to examine

- Completeness of data
- Accuracy of data
- Monitor OP indicators
- Track own performances
- Find bottleneck
- Compare facilities
- Immediate action

Data for action

LD's Dashboard



Divisional Dashboard



District Dashboard



Upazila Dashboard

Drill down

Periods / Operand	upazilla_epi_BCG_vial_damaged (default) #	Total #
February 2015	0	0
March 2015	2 016	2 016
April 2015	2 016	2 016
May 2015	2 016	2 016
June 2015	2 016	2 016
July 2015	2 016	2 016
August 2015	2 016	2 016
October 2015	2 017	2 017
Total	14 113	14 113

Director's Office
Monthly Meeting



Chittagong
Divisional Director Office
Monthly Meeting



Civil Surgeon Office
Rangamati
Monthly Meeting



UH&FPO Kawkhali
Monthly Meeting



Immediate outcomes

- Dashboards improves accountability of health leaders for data-driven decision making
- Local Health Bulletin enhances review of program activities using data
- Online scoring of Health Facilities enhances competition to improve services
- Training of Health Managers on data analysis and use of information improved data quality
- Rate of reporting improved from 60% to 95% in the last two years
- Regular analysis and feedback improved completeness and accuracy of data in the last two years

DGHS is on way to SDG monitoring

Real time health information dashboard Directorate General of Health Services, Mohakhali Dhaka, Bangladesh

Status of SDG health indicators - Bangladesh

 Home

Bangladesh has initiated real time monitoring system for health related SDG indicators. This dashboard visualizes both survey and routine health data from more than 14,000 public health facilities in Bangladesh.

3.1 Maternal Mortality

158
MMR



3.2 Newborn and child mortality



3.3 Communicable diseases



3.4 Noncommunicable diseases and mental health

4009
NCD Death

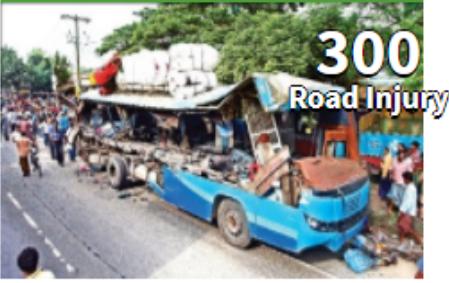


3.5 Substance abuse



3.6 Road traffic injuries

300
Road Injury



3.7 Sexual and reproductive health



3.8 Universal health coverage



However, challenges still remain

- Culture of data use by health managers and doctors are still poor
- Lack of staff (stop-gap management)
- Cost to replacing and buying tablets, laptops and computers and pay for internet connection
- Weak supervision and M&E systems
- Fragmented data storage system by different institutions (DGHS & DGFP)

Recommendations

- Ongoing capacity development activities should be continuing in upcoming sector plan
- Basic statisticians need to be recruited
- Additional HR training to support statistician (Sr. staff nurse)
- Establishing accountability through reward, recognition & punishment
- Develop new module for covering all health programs including Health Financing tracking
- There is need for change of mind set-up and change of culture particularly for top managers

This project has been funded



**by European Union (EU) at icddr,b as SHARE project
(Strengthening Health Applying Research Evidence)**

icddr,b thanks its core donors for their on-going support



Government of the People's
Republic of Bangladesh

Canada

