

Diarrhea reporting in Bangladesh

Dr Ashrafur Islam Khan

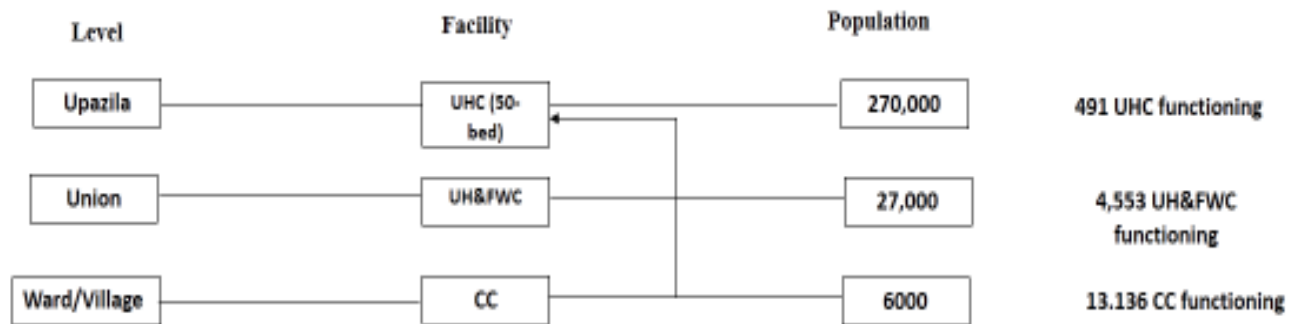
Health Care System in Bangladesh

- Bangladesh is administratively divided into
- 8 divisions
 - 12 city Corporation
 - 64 districts
 - 492 upazilas
 - 328 municipalities
 - 4,554 unions and
 - 40,986 wards

Level of Health Care in Bangladesh



Primary level care: Upazila Health System (UHS)



Tiers of Upazila Health System (UHS) for ESP delivery

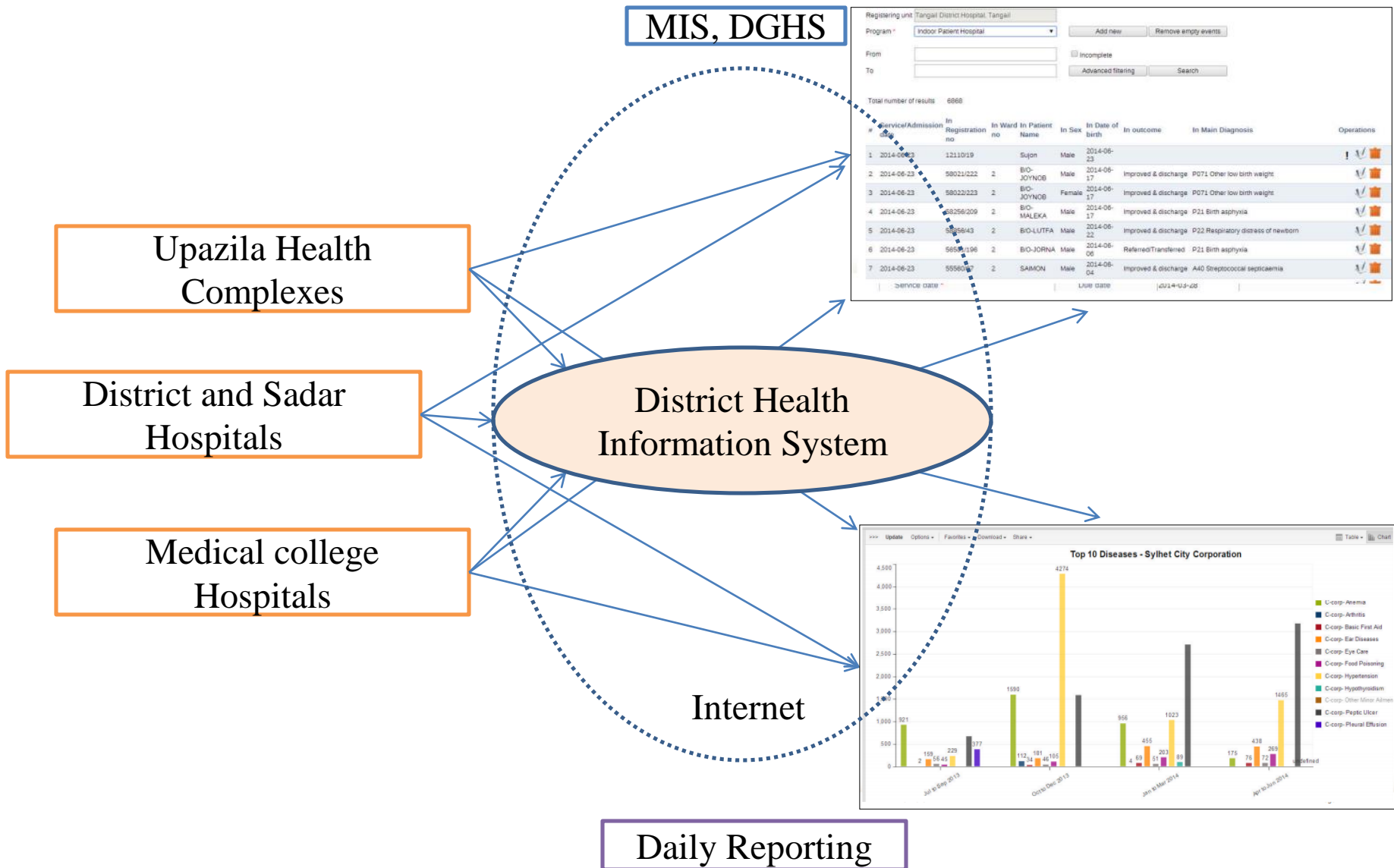
Diarrhea reporting through District Health Information System (DHIS2) DHIS2 incorporated in health system in Bangladesh

- MoHFW (with support from partners) developed a well functioning health information system (HIS) to gather all data from different levels of the health system
- Since 2011, DGHS customized DHIS2 (version 2.0.1) for fragmented data entry and developing a central data base.
- Upazila health Complex (Primary), District Hospital (Secondary) Medical college Hospital (Tertiary) are involved for data entry.
- Union Level facilities are entering health data now.
- Community clinic data are in Pipeline.

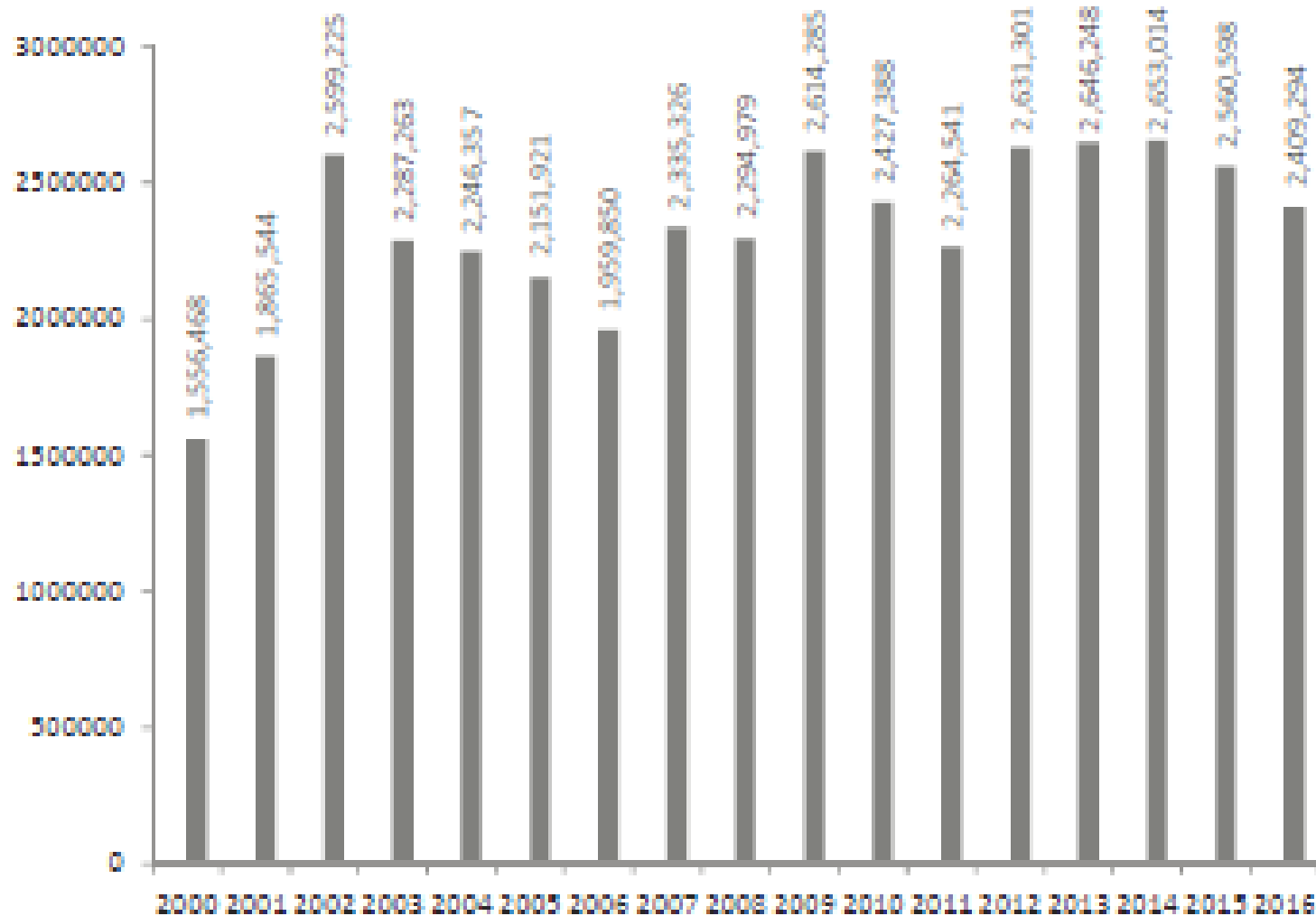
Diseases covered through DHIS2

- Non-specific sign symptoms and clinical/laboratory findings
 - Injury due to assault and RTA
 - Infectious disease
 - Malignancy
 - Pregnancy and associated complications
 - Poisoning
 - Disease of musculo-skeletal system
 - Disease of blood and blood-forming organs
 - Disease of endocrine and metabolic Disorder
 - Disease of digestive system
 - Disease of cerebro-vascular system
 - Disease of respiratory system
 - Cardiovascular disease
- * Disease information was collected according to ICD 10.

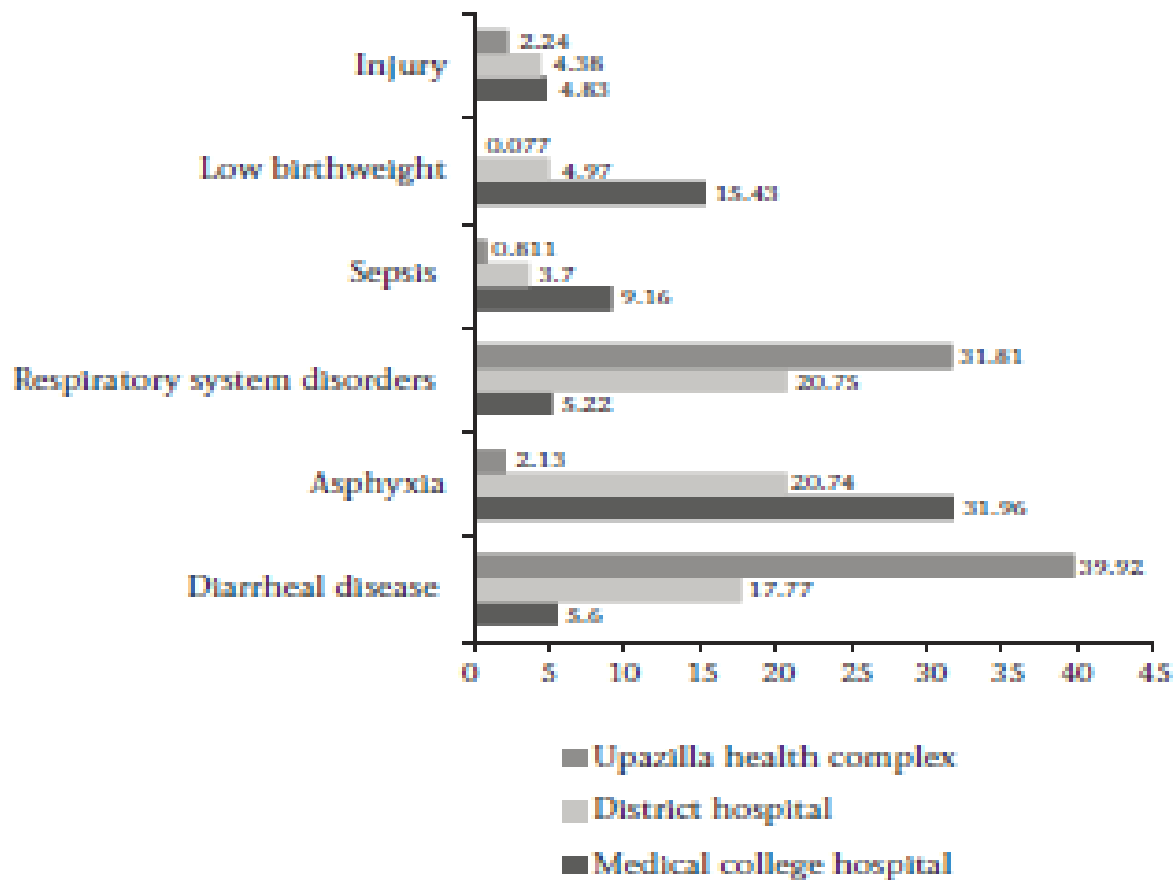
Diarrhea Reporting in DHIS2



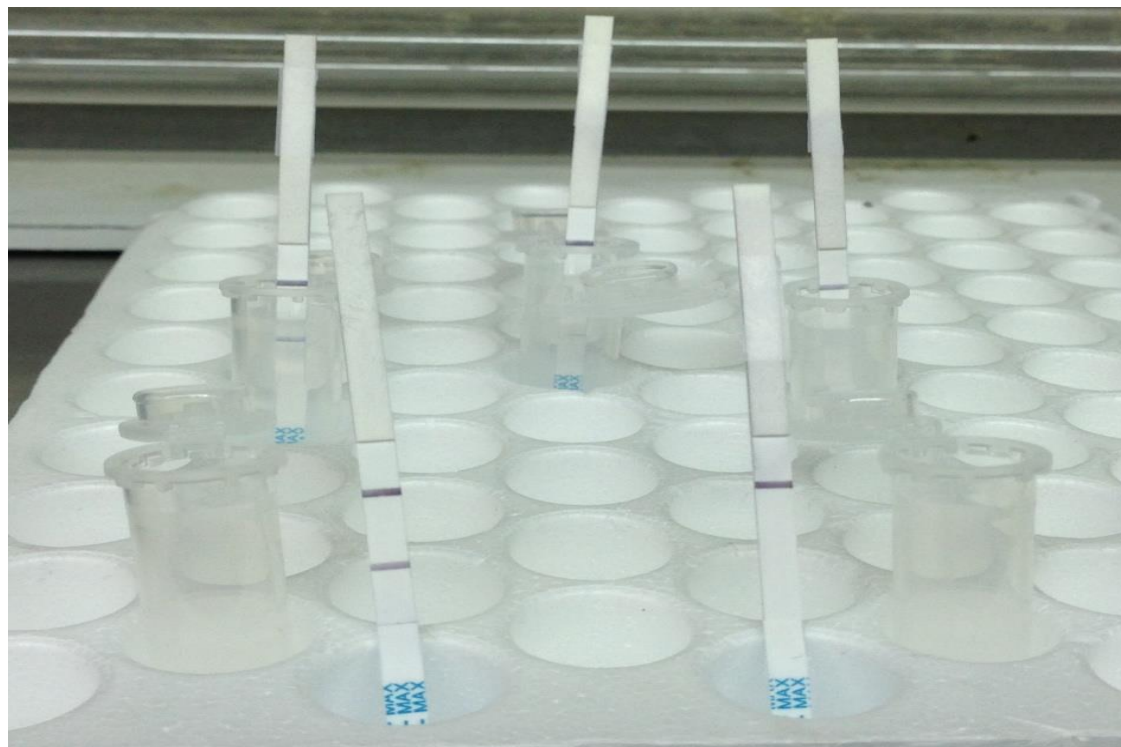
Number of Diarrhea cases in Different years (2000-2016)



Major causes of hospital admission at different levels among under-five children, 2016



Building Local Diagnostic Capacity in Health Facilities



Rapid diagnostic test (RDT) for *V. cholerae* O1

Tracking the transmission of cholera at the household level

- **About 80% of secondary infections linked to the first cholera case in a particular household**
- **80% of cholera infections were contracted within five days from a household member**
- **Once cholera entered the household it was spreading between household members rather than repeatedly infecting from outside.**

RESEARCH ARTICLE

Vibrio cholerae Serogroup O139: Isolation from Cholera Patients and Asymptomatic Household Family Members in Bangladesh between 2013 and 2014

Fahima Chowdhury¹, Alison E. Mather^{2*}, Yasmin Ara Begum¹, Muhammad Asaduzzaman¹, Nabilah Baby¹, Salma Sharmin¹, Rajib Biswas¹, Muhammad Ikhtear Uddin¹, Regina C. LaRocque^{3,4}, Jason B. Harris^{3,4}, Stephen B. Calderwood^{3,4}, Edward T. Ryan^{3,4}, John D. Clemens^{1,5}, Nicholas R. Thomson^{2,6}, Firdausi Qadri^{1*}



nature
genetics

LETTERS

<https://doi.org/10.1038/s41588-018-0150-8>

Defining endemic cholera at three levels of spatiotemporal resolution within Bangladesh

Daryl Domman^{1*}, Fahima Chowdhury², Ashraf I. Khan², Matthew J. Dorman¹, Ankur Mutreja^{1,3}, Muhammad Ikhtear Uddin², Anik Paul², Yasmin A. Begum², Richelle C. Charles^{4,5}, Stephen B. Calderwood^{4,5}, Taufiqur R. Bhuiyan², Jason B. Harris^{4,5,6}, Regina C. LaRocque^{4,5}, Edward T. Ryan^{4,5,7,9}, Firdausi Qadri^{2,9} and Nicholas R. Thomson^{1,8,9*}

Ongoing & Future plans

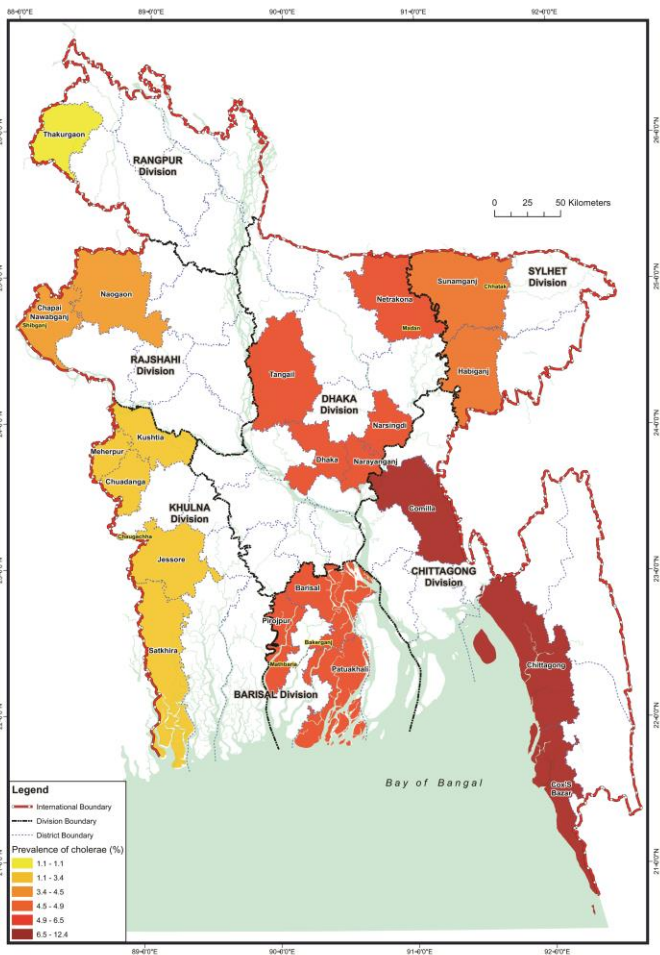
Genomic studies from Nationwide cholera surveillance

Clinical strains from all over the country

Time span: 2014 ongoing

- to understand the circulating *V. cholerae* at the regional level in Bangladesh utilizing the fine resolution provided by whole genome data.
- Genomic epidemiology-- WGS data to clinical, phenotypic or meta data to determine the association and regional spread of cholera in Bangladesh.

This study data could be used in planning future surveillance strategies in Ganges Delta region by informing new epidemiology of current outbreak strains.



Surveillance sites for genomic studies

Summary

- A web based data collection system called District Health Information System (DHIS, version 2) to collect routine health data from the government health facilities of Bangladesh.
- Provide ongoing status of health outcome along with comparison between geographical locations and over time.
- No data on aetiology of diarrhoeal diseases available nor details of patients admitted.
- The icddr,b hospital admissions are sent to the Diarrhoea Control Cell every month. Reports from all government hospitals in Bangladesh are sent to the cell.
- National cholera control plan for Bangladesh has finalized and is moving forward.