Disease Surveillance in Bangladesh: Moving Towards e-system

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Contents

• Surveillance system in Bangladesh

• Improvement in surveillance system with IANPHI support
  – Web-based integrated disease surveillance
  – Behavioral Risk factor surveillance system (BRFSS), Bangladesh
Bangladesh

- Population- 152 million
- Divisions – 7
- Districts – 64
- Sub districts (Upazilla) - 493
• 1976 – IEDCR started functioning - 1976

• IANPHI Member since 2006

• Designated as National Influenza Centre - 2007
Objectives of IEDCR

- Disease Surveillance
- Research
- Outbreak investigation & response
- Training
National disease surveillance systems

1. Routine Disease Surveillance

2. EPI Disease Surveillance

3. Priority Communicable Disease Surveillance
   - Web-based Integrated Disease Surveillance (IANPHI support)
     Web based slides Mexico.pptx

4. Surveillance through Outbreak Investigation (IANPHI support)
   - 24/7 hotline
   - Media Monitoring
   - Any informal reporting
     Outbreak Slides Mexico.pptx
Disease Specific Surveillance

• Nipah Surveillance
• Acute Meningo-Encephalitis Surveillance (AMES)
• Influenza surveillance
  — Hospital based
  — Community Based
• Avian Influenza Surveillance among High Risk Groups
• Salmonella Surveillance — (Initiated with IANPHI support)
• Dengue Surveillance
• Behavioral Risk Factor Surveillance System — Piloting with Mobile Phone (IANPHI Support)
• Food borne disease surveillance (e.g., Salmonella, Hepatitis A & E)
IANPHI achievement

• Strengthening surveillance system
  – Web-based integrated disease surveillance
  – BRFSS, Bangladesh
  – Outbreak investigations

• Capacity development
  – Training of doctors
  – Training of statisticians
  – Training of Staff In-charge

• Procurement for IT support
Thank You
Objectives of Web-based disease surveillance (WBDS)

1. Early detection of outbreaks
2. Monitor trends of priority communicable diseases
3. Facilitate real-time electronic transfer of data from sub-districts to central level
4. Reduce provider burden in data transmission
5. Ensure quality & timeliness of data
6. Disseminate the findings
7. Upgrade website & IT facilities
Capacity development for WBDS

• Orientation of Civil Surgeon, Upazila Health & Family Planning Officer, Medical Officer
  – 64 districts
  – 493 sub-districts (upazila)

• Training of Statistical assistant/statistician- 514
## Format of web based disease surveillance

![Image of a data entry form for disease surveillance](image)

### Data Entry
- **Organization Unit**: Gazipur Civil Surgeons Office, Gazipur
- **Data Set**: O2 Form
- **Period**: W39 - 2012-08-24

### Disease Surveillance

<table>
<thead>
<tr>
<th>Disease</th>
<th>0-28 days</th>
<th>1-12 mon</th>
<th>1-5 years</th>
<th>5-15 years</th>
<th>15+ years</th>
<th>Total Male</th>
<th>Total Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute watery diarrhea</td>
<td></td>
<td></td>
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<tr>
<td>Bloody dysentery</td>
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<tr>
<td>Pneumonia</td>
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<tr>
<td>Severe Pneumonia</td>
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<td>Very severe disease</td>
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<td>SARI</td>
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<tr>
<td>Acute meningitis-encephalitis syndrome</td>
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<tr>
<td>Dengue fever</td>
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<tr>
<td>Acute hepatitis</td>
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<td>Kala-azar</td>
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<td>Malaria</td>
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<tr>
<td>Cutaneous Anthrax</td>
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<td>Hindi fever</td>
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<tr>
<td>Probable Rabies</td>
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<td>PTK-</td>
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<td>EPTK</td>
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<tr>
<td>Tuberculosis in children</td>
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</tr>
</tbody>
</table>

### Buttons
- Complete
- Incomplete
- Run validation
Outbreak investigation & response

Since 2007, more than 100 outbreaks investigated by IEDCR all over Bangladesh
Outbreaks (2007 – 2012) NRRT Response

Year 2007: 12
Year 2008: 29
Year 2009: 10
Year 2010: 17
Year 2011: 22
Year 2012: 10
Investigation of disease outbreaks & rapid response through

National Rapid Response Team (NRRT)
District Rapid Response Teams (DRRT)
Upazilla Rapid Response Team (URRT)
Behavioral Risk Factor Surveillance System (BRFSS) Bangladesh

• Mobile phone used to conduct interview

• IANPHI provided fund for piloting

• CDC Atlanta supported development of protocol & questionnaire

• MOH&FW supported validation of telephone interview

• Scaling up with Ministry of Health & US CDC support

• Dissemination
BRFSS
Activities
Database of BRFSS, Bangladesh
It will take four months to interview 3,000 individuals

Mobile phones to be used in health survey

ALPHA ARUZ

DHALE, JAN 1: Institute of Epidemiology, Disease Control & Research (IEDCR) will conduct a survey with computer-based telephonic interviews to determine whether individual behavioral risk factors are developing chronic diseases that may lead to premature mortality and morbidity.

IEDCR director Prof. Mahmudul Kabir told The Independent on Thursday: “For the first time, we will use mobile phones to conduct a survey. It is likely to start from February 2012.”

It will take about four months to interview 3,000 individuals, who will be picked samples to be private mobile phone users.

Bengalinx

Interviewers will use computer-based forms containing questions on an individual’s physical condition, history of diseases like diarrhoea, fever, diabetes, blood pressure and heart ailments as well as some other risk factors. The respondents will have to answer questions about consumption of fruits and vegetables, tobacco use, water access and vigorous activities.

The survey will also include the personal information of the respondents, including family size, family members’ ages and ailments, if any, besides marital status and income.

This kind of system, called “Behavioural Risk Factor Surveillance System (BRFSS),” is a state-based computer-assisted telephone interviewing effort conducted in different countries including USA and China.

Respondents to the upcoming survey will be aged above 18 years. The IEDCR will conduct the survey with the financial assistance from the International Association of National Public Health Institutes, Finland.

The data to be collected from the survey will help to identify the high risk segments of the population that can be targeted for intervention programmes. The data can also be used to track changes over time in risk factor behaviours and related diseases, and can assess the impact of health promotion and prevention intervention programmes. The Tennessee Department of Health has been participating in this system on a continuing basis since 1984, surveying adults from randomly selected households throughout the USA in every month.

These surveys were developed and conducted to monitor state-level prevalence of the major behavioural risks among adults associated with premature morbidity and mortality.

Many of the behavioural risk factors surveyed in this system cannot be obtained from any other health statistics sources and this system serves as an important, timely, accurate, and often sole, reference in measuring and monitoring the personal health behaviours and lifestyle conditions that are related to good or poor health outcomes or situations.
Data collected on:

- Socio-demographic characteristics
- Behavioral Risk Factors
- Non-Communicable Diseases (NCDs)
- Physical injury
- Preventable Communicable Diseases
  - Diarrhea
  - Fever
- Health Care Seeking Pattern

### Outcome status of phone call

<table>
<thead>
<tr>
<th>Status of phone call</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Completed interview</td>
<td>3378</td>
<td>16.15</td>
</tr>
<tr>
<td>2 Incomplete interview</td>
<td>98</td>
<td>0.47</td>
</tr>
<tr>
<td>3 Appointment made</td>
<td>1366</td>
<td>6.53</td>
</tr>
<tr>
<td>4 Refusal</td>
<td>660</td>
<td>3.16</td>
</tr>
<tr>
<td>5 Not Eligible</td>
<td>5716</td>
<td>27.33</td>
</tr>
<tr>
<td>6 Busy/Not Received</td>
<td>9698</td>
<td>46.37</td>
</tr>
<tr>
<td>Total call</td>
<td>20916</td>
<td>100.00</td>
</tr>
</tbody>
</table>
Validation Of Telephone Interview Through Face To Face Interview
BRFSS findings
Dissemination