Regional Workshop on Monitoring and Management Strategies for Benthic HABs

Event-based Surveillance and Response in the Philippines
(Capturing Acute Public Health Threats)

Vikki Carr D. de los Reyes, MD, PHSAE
ESR vs Weekly Notifiable Indicator-based

Event-based Surveillance

- **Information Sources**
  - Media
  - Local Health Authorities
  - General Public
    - BFAR
    - Animal Industry
    - Bureau of Quarantine
    - Health Facilities
    - Operation Centers

- **Events**
  - Capture
  - Filter
  - Verify

- **Signal**
  - Assess
  - Investigate

- **Public Health Alert**

- **Control Measures**

Indicator-based Surveillance

- **Data**
  - Collect
  - Analyse
  - Interpret

- **Health Care Facilities**
  - 24 Diseases with established Case definition

- **Health Program Managers for Prevention and Control Strategies**
ESR Definition

Event-based Surveillance is the organized and rapid capture of information about events that have the potential to be a public health risk.

Rumour surveillance....
ESR Core Processes

- Capture
- Filter
- Verification
- Assessment
- Response
- Feedback
Capture of Events

Gathering of health events…

- Epidemiology Surveillance Units
- Print
- Radio
- TV
- Community
- Health Workers
- Internet (news, social media)
Criteria for Filtering a True Health Event

- Unknown illness/unusual event
- High mortality or morbidity
- International disease spread
- Interference with travel or trade
- Disease for elimination/eradication
- Suspected, accidental or deliberate biological/chemical threats
Verification

- more needed information on time, place and person.
- true health events from multiple sources
- done within 24 hrs

<table>
<thead>
<tr>
<th>Document Status</th>
<th>INTERNAL</th>
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<tbody>
<tr>
<td>1 Report date and time</td>
<td>1/22/2013 12:33 PM</td>
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<tr>
<td>2 Update No.</td>
<td>2</td>
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<tr>
<td>3 Health event</td>
<td>Suspect Dengue Cases</td>
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<tr>
<td>4 Location</td>
<td>Brgy. San Salvador, Banate, Iloilo</td>
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<tr>
<td>5 Start date</td>
<td>12/27/2012</td>
</tr>
<tr>
<td>6 Number of cases</td>
<td>59 (validated)</td>
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<td># Previously Reported</td>
<td>64</td>
</tr>
<tr>
<td># Added in this report</td>
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<tr>
<td>7 Additional info on cases</td>
<td>Age range: 9 months - 20 years old</td>
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<tr>
<td></td>
<td>S/Sx: headache, joint, muscle pain, sore throat, nau</td>
</tr>
<tr>
<td></td>
<td>gom bleeding</td>
</tr>
<tr>
<td></td>
<td>Admitted at Western Visayas Medical Center (6 case</td>
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<tr>
<td></td>
<td>Barotac Viejo District Hospital (7 cases), St. Pa</td>
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<tr>
<td></td>
<td>ul Medical Center (2 cases), Iloilo Doctors' Hospi</td>
</tr>
<tr>
<td>8 Number of deaths</td>
<td>1 (validated) (Case Fatality Rate: 1.7%)</td>
</tr>
<tr>
<td># Previously Reported</td>
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</table>
Assessment

- health events are assessed by level of concern

Public Health Event of *Local* Concern

Public Health Event of *National* Concern

Public Health Event of *Subnational* Concern

Public Health Event of *International* Concern
Criteria for Assessment

1. Public Health Impact
   - Cases and deaths
   - Pathogens and population involve
   - Agent, vehicle or route of transmission
   - Pathogens eliminated or eradicated
   - Risk for international spread
Criteria for Assessment

2. Need for assistance
   • Technical expertise
   • Laboratory diagnostics (biological specimens or environmental samples)
   • Enhanced surveillance

3. Response strategy requirements
   • Technical expert for outbreak investigation, prevention and control
Public Health Event of **Local** Concern (PHELC)

- Within specific geographical area (**municipality, province**)
- Local health unit with response capacity
- Does not require extensive laboratory
Public Health Event of Subnational Concern (PHERC)

- Potential spread (2 or more provinces)
- No capacity for control measures
- Requires technical and laboratory support
Public Health Event of **National Concern (PHENC)**

- rare and undefined cause
- potential of spread (2 or more regions)
- failure in control measures implemented
- no staff to assess and conduct control measures
Verified Health Events by Disease Classification (n=2,096) Philippines, 2017

- Vaccine Preventable Diseases: 590 (28%)
- Vectorborne Diseases: 412 (20%)
- Food and Waterborne Diseases: 381 (18%)
- Zoonotic Diseases: 302 (14%)
- Meningococcal Diseases: 154 (8%)
- Maternal Death: 101 (5%)
- HIV/AIDS: 35 (1.7%)
- Emerging and Re-emerging Diseases: 29 (1.4%)
- Chemical-Related: 7 (0.3%)
- Others: 75 (3.6%)

Number of Health Events
Ciguatera Fish Poisoning (Barracuda) among Filipino Seafarers, Sint Eustatius, Caribbean Netherlands November 2015

Niño D. Rebato, RN
Field Epidemiology Training Program – Fellow, Batch 26
Epidemiology Bureau
Department of Health - Philippines
Introduction

Received ESR report

November 29 2015

*RESU-NCR, Regional Epidemiology Surveillance Unit-National Capital Region; MDH, Manila Doctors Hospital; BFAR-NFRDI Bureau of Fisheries and Aquatic Resources-National Fisheries Research and Development Institute
Objectives

• To profile the cases
• To confirm the diagnosis
• To identify source and mode of transmission
Background

Fish and Shellfish Poisoning

• 49 (25%) out of 193 FBI events reported in ESR 2015

• One CFP event reported by Canada to Philippines

• All cases were seafarers

FBI; Foodborne Illness

<table>
<thead>
<tr>
<th>Table 2. Implicated Food During FBI Events (N=193)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESR Reports, Philippines, January 1-December 31, 2015</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Implicated Food</th>
<th>No.</th>
<th>(%)</th>
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<tbody>
<tr>
<td>Fish and shellfish</td>
<td>48</td>
<td>25</td>
</tr>
<tr>
<td>Game meats, meats, poultry and substitutes</td>
<td>30</td>
<td>16</td>
</tr>
<tr>
<td>Mixed dishes (i.e. pasta, etc)</td>
<td>28</td>
<td>15</td>
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<tr>
<td>Vegetables</td>
<td>23</td>
<td>12</td>
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<tr>
<td>Bakery products</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Desserts</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Cereals and other grain products</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Nuts and seeds</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Beverages</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Sugars and sweets</td>
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<td>4</td>
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<tr>
<td>Miscellaneous category</td>
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<tr>
<td>Egg and egg substitutes</td>
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<tr>
<td>Soups</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Sauces, chips, gravies and condiments</td>
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<td>1</td>
</tr>
<tr>
<td>Snacks</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Dessert toppings and fillings</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Fruits and fruit juice</td>
<td>1</td>
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</tbody>
</table>
Case Definition

*Ciguatera fish poisoning (CFP) case;* a previously well individual in the cargo ship who developed at least one gastrointestinal symptom (diarrhea, abdominal pain, nausea and vomiting) and combination of at least 1 neurologic (dizziness, weakness and itching, temperature allodynia) manifestations on November 13, 2015.
Distribution of CFP Cases among Seafarers, (N=8)  
Sint Eustatius, Netherlands, November 13, 2015

Number of Cases

Time of Onset

Cooked Barracuda

Served Barracuda

Incubation Period:
- Range: 1-3 hours
- Median: 2 hours
Profile of Cases

• All were males
• Age range: 37-58 years
• Median: 53 years
• Most affected age group: 50-59 years
Signs and Symptoms of CFP Cases (N= 8)
Sint Eustatius, Netherlands, November 13, 2015

Signs and Symptoms

- Temperature Allodynia
- Nausea
- Vomiting
- Diarrhea
- Itchiness
- Weakness
- Dizziness
- Abdominal pain

*Multiple Responses
Docked at Sint Eustatius
- 7 AM: Caught Barracuda and cooked immediately
- Served at 12 PM, 8 crew ate
- 1-3 PM: Onset of symptoms

Sailed at Caribbean Sea

Returned to Philippines, Unfit for work

Discharged from the hospital

Admitted at Trinidad and Tobago Hospital

Arrived in the Philippines

Re-admitted in Manila, Still with itchiness and temperature allodynia

Timeline of Event, Ciguatera Fish Poisoning, (N= 8)
Sint Eustatius, Netherlands, November 13, 2015

12 13 14 15 16 20 25 27 28 29 30 1

November

2016

December
Laboratory Examination

Human Specimen RBA testing*

Serum Sample – below detection limit

*via Philippine Nuclear Research Institute
Conclusion

• There was ciguatera fish poisoning among seafarers after consumption of barracuda in St. Eustatius, Netherlands

• Diagnosis was based on clinical manifestations and fish-eating history
Strengthening Laboratory Confirmation

Collaborative Study with PNRI in Assay Development and Validation for Detection of Human Specimens in Harmful Algal Bloom-related Foodborne Illness
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Thank you!