Module 5

HEALTH INFORMATION MANAGEMENT

Learning Objectives

By the end of this session, the participant should be able to:

- Appreciate the need for good information as applied to health emergency risk management
- Discuss how information management systems support health emergency management
- Describe the importance of research in health emergency management
- Describe the roles of an HEM as applied to management of information systems
Q&A

How do information management systems support health emergency management?

How Do Information Management Systems Support Health Emergency Management Functions?

Information systems support the following functions & activities:

**Risk management**
- Risk assessment
- Risk reduction planning
- Risk communication
- Policy development
- Capacity development

**Operations management**
- Needs assessment
- Health surveillance
- Operational research
- Policy development
- Capacity development
How Do Information Management Systems Support Health Emergency Management Functions?

<table>
<thead>
<tr>
<th>Risk management</th>
<th>Operations management</th>
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<td>• Early warning and alerting systems</td>
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<td>• Training needs analysis and development</td>
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<td>• Logistics and supply management</td>
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<td>• Monitoring and evaluation</td>
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<td>Logistics and supplies</td>
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<td>• Monitoring and evaluation</td>
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Q&A

Provide some examples of information management

• Warning Systems
• Public Information and Risk Communication
• Risk Assessment
• Operational Needs Analysis
Group Activity

Four teams, two problems: two teams assigned to each problem

Environmental Health in a Cyclone

Communicable Disease (AI) in a Rural Area

Group Activity

Four Teams, Two Problems: two teams assigned to each problem

Environmental Health in a Cyclone

- Risk management (pre-disaster)
- Operational management (at response)

Communicable Disease (AI) in a Rural Area

- Risk management (pre-disaster)
- Operational management (at response)
Group Activity

Identify the information management requirements associated with specific tasks for your team's scenario

Questions to be answered by each group:

- What decisions need to be made?
- What information is needed?
- What are your sources of information?

Group Activity

You have one hour to answer these questions and prepare a 10 minute presentation
Plenary Session

• What different information and sources of information may there be in preparedness versus response phases?

• How can we improve the quality of information?

• What technologies are available in both preparedness and response phases?

• What similarities / differences you have noted, and what reasons there may be for those similarities / differences?

Information Management as a tool for Health Emergency Management

Why is Information Management Important to Health Emergency Management?
Information Management as a tool for Health Emergency Management

Information is the basis for effective decision making (evidence-based decision making).

Group Activity

In what order do the following steps in information management occur?

- Monitoring / Evaluation
- Processing information / data analysis
- Dissemination and sharing of information
- Decision making (recommendations)
- Data collection / gathering information
- Identifying information needs
**Information Management - the Process**

- Identifying information needs
- Data collection / gathering information
- Processing information / data analysis
- Decision making (recommendations)
- Dissemination and sharing of information
- Monitoring / Evaluation

**Information Flows**

feedback ➔ context ➔ processing ➔ disseminating ➔ gathering
**Who Needs Information for Health Emergency Management?**

- Information is needed to enhance the capacity of a community to manage its risks through risk awareness, prevention, preparedness, response and recovery.

- Information is needed by disaster workers, managers and authorities to enable optimal risk management and operations management.

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**Sources of Information for Health Emergency Management: Warning Systems**

**Warning systems**

- warning systems should be developed for covering some key areas such as:
  - outbreaks of disease & epidemics
  - severe weather (cyclone, earthquake, etc.)
  - other natural hazards
  - population movements
  - technological and industrial hazards
  - social & political unrest
  - economic crisis: food shortage....
  - war
Warning Systems: a Tool for Health Emergency Management

- warning systems should produce appropriate response to minimize harm

- warning messages should:
  - provide timely information about an impending emergency
  - state the actions to be taken to reduce loss of life, injury…
  - state the consequence of the failure to heed the warning
  - be short, simple and precise
  - contain active verbs
  - repeat information regularly
Sources of Information for Health Emergency Management: Surveillance

CDC Definition

Public Health surveillance is the ongoing and systematic collection, analysis and interpretation of health data essential to the planning, implementation, and evaluation of public health practice, closely integrated with the timely dissemination of these data to those who need to know. The final link in the surveillance chain is the application of these data to prevention and control. A surveillance system includes a functional capacity for data collection, analysis and dissemination linked to public health programs.

Aims and objectives of public health surveillance

- Establish priorities, follow trends, identify vulnerable groups, high risk situations & reassess priorities
- Detect & respond to epidemics as needed
- Ensure targeting of resources
- Evaluate program progress / effectiveness or quality of health care
Practical Steps in Establishing Surveillance System

- Design and field test data collection forms
- Train personnel in data collection
- Define data entry and analysis methods
- Ensure timely decision-making
- Develop feedback mechanisms (newsletters, etc.)
- Promote follow-up and monitoring mechanisms
- Evaluate system periodically

Question

- How is Emergency Surveillance different from non-emergency Surveillance?
Steps in Establishing Surveillance Systems in Emergencies

- Concentrate on mortality and key morbidities (diseases with high burden and/or outbreak potential)

- Define disease control objectives - identify data categories – use practical case definitions

- If not already existing service in MOH, assign primary responsibility to one agency or individual

- Establish efficient means of communicating data

Design of a Surveillance Reporting Form

Weekly Morbidity Surveillance Reporting Form:

<table>
<thead>
<tr>
<th>Week</th>
<th>Morbidity</th>
<th>0-4 years</th>
<th>5-14 years</th>
<th>15 and over</th>
<th>Total</th>
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**Notes:**
- Replace columns or rows as necessary.
- Columns for other age groups or specific diseases can be added.
- This form is intended for monitoring morbidity and mortality in an emergency setting.
- Data can be aggregated or disaggregated as needed, depending on the scale of the emergency.
- Reporting intervals can be adjusted to match the emerging health needs.
**Analysis and Presentation of Surveillance Data**

- Focus on mortality rates and key morbidity indicators
- Follow trends through graphs
- Ensure routine mechanisms to provide data to program managers in comprehensible format

**Sources of Information in Health Emergency Management: Operational Research**

- Operational Research from past emergencies provide experience and guidance for both risk planning and operational response.
- Assess needs of disaster affected populations
- Provide data for analysis of risk factors
- Match resources to needs to prevent further adverse health effects.
- Evaluate program effectiveness
- Assess long term effects of emergencies and interventions to emergencies
- Provide guidance in future emergencies
Differences in Operational Research in Emergencies

- Operational research in emergencies differs from non-emergencies in that valid data is needed for immediate decision making.

- Aim to maintain highest research standards possible, but TIMELY results are more important than top quality academic results.

- Data collection under adverse conditions affect methodologies used.

- All human subjects considerations will still apply!

Operational Research: a Tool for Health Emergency Management

Optional Operational Research studies should augment response decision making. Needless research drains resources and interferes with response operations.

Operational Research is vital for the development of emergency response as a discipline and vital for continued improvements in Health Emergency Management
Further Resources: Public Information

Natural Disasters
Myths & Realities

Myth 1
Foreign medical volunteers with any kind of medical background are needed.

Reality: The local population almost always covers immediate health needs, only medical personnel with skills that are not available in the affected country may be needed.

Myth 2
Any kind of international assistance is needed, and it’s needed now.

Reality: A timely response that is based on an impartial evaluation often contributes to the chaos. It is better to wait until needs are clarified.

Myth 3
Epidemics and plagues are inevitable after every disaster.

Reality: Epidemics do not spontaneously occur after a disaster and are sometimes caused by irreversible situations. The key to preventing disease is to improve sanitary conditions and educate the public.

Further Resources: Emergency Related Journals and Textbooks
Further Resources: Technical and Training Material

- World Health Organization
- UNHCR (The UN Refugee Agency)
- Pan American Health Organization
- Publications Catalog (Disasters and Humanitarian Assistance)
- CDC (Centers for Disease Control and Prevention)

Further Resources: On-line, up-to-date Information on Disasters

- CRED (Centre for Research on the Epidemiology of Disasters)
- Reuters AlertNet Foundation
- HPN (Humanitarian Practice Network)
- Refworld (The Leader in Refugee Domain Support)
- UNICEF (Innocenti Research Centre)
Further Resources: Peer reviewed abstracts, papers and citations

Search online using PubMed

Health Information Systems in Humanitarian Emergencies

Thieren M.
Health information systems in humanitarian emergencies.
Bull World Health Organ. 2005 Aug;83(8):584-9
Challenges of Health Information Management: Changing Information Needs

- Information needs are different throughout the risk management process

- Information needs are different throughout the different phases of a disaster

Challenges for Health Information Management: Information Credibility

- Information credibility is enhanced through collection, analysis and delivery by known, credible persons or organisations

- Information credibility is enhanced by use of standardized methods of data collection, use of validated indicators and use of best practice
Challenges for Health Information Management: The Right Information

What kind of information are we talking about?

- Risk reduction information
  - hazards and the environment in which they coexist
  - the elements - physical and human - at risk and the degree of vulnerability
  - community awareness of their risk and degree to which they accept this risk

- Wide variety of disciplines

- Past, present and future

Roles of the Health Emergency Manager in Managing Health Information

- Analysis of data and information; identification of gaps

- Coordination and capacity development of health information systems

- Dissemination of information to
  - Guide decision makers
  - Determine operational responses
  - Inform the public

- Monitoring, reporting, and evaluation
Health Information Management: A Tool for Health Emergency Managers

- Health information system management
- Needs assessment
- Capacity assessment
- Early warning systems
- Surveillance

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<th>Key Role</th>
<th>Functional Role</th>
<th>Tools &amp; Processes</th>
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<tr>
<td>Leadership</td>
<td>Direction</td>
<td>Risk assessment &amp; risk management</td>
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<td>Risk Management</td>
<td>Coordination</td>
<td>Capacity assessment</td>
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<td>Capacity development</td>
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<td>Operations Management</td>
<td>Advocacy</td>
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<td>Advising</td>
<td>Guidelines, standards and protocols development</td>
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<td>Assessment</td>
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THANK YOU