Emergency Medical Services and Emergency Medical Services System

Outline of Presentation

Session 1 – Emergency Medical Services (EMS) and Emergency Medical Services System (EMSS)

Session 2 - Development of EMS and EMSS

Session 3 – Medical Surge Capacity
Module Objectives

At the end of this module the participants should be able to:

- Facilitate the formulation of EMSS plan in their respective countries.
- Prepare a training plan for EMSS capacity development.
- Be able to discuss concepts of health sector surge capacity

Expected Outputs

- A Plan for the establishment of Emergency Medical Services for their respective countries.
- A training plan for capacity building on EMS/EMSS for their respective countries.
Training/Learning Activity

This module will utilize both lecture and small group activities.

Objectives of Session 1 and 2:

After the session participants will be able to:

• Discuss key concepts & functions of EMS (EMSS)
• Differentiate EMS from EMSS
• Describe the core functions of medical dispatching and regulation.
Q & A:

What is your concept of Emergency Medical Services and Emergency Medical Services System?

DEFINITIONS:

EMERGENCY MEDICAL SERVICES

is service delivery mechanism, that can be delivered as isolated activities or can be integrated into a system.
MODULE 3

EMERGENCY MEDICAL SERVICES

Working definition:

- is a regional or community based, which provides for the utilization of available personnel, equipment, transportation and communication to ensure effective and coordinated delivery of medical care in emergency situations
- they can be tapped during day to day emergencies or during disasters

Emergency Medical Services (EMS) System

Operational definition

It is a network of resources linked together for the purpose of providing emergency care and transport to victims of sudden illness or injury to a medical care.
EMERGENCY MEDICAL SERVICES SYSTEM (EMSS)

• provides public safety-type services and emergent medical care to customers, and fulfills important role within the public health system

SYSTEM

is a complex body, a combination of related elements organized into a complex whole for achieving something
MODULE 3

RESCUE CHAIN---SECTORAL

Impact Zone

*SEARCH*
*RESCUE*
*First Aid*

Command Post

Triage
Stabilization
Evacuation

CP / AMP

Traffic Control
Regulation of Evacuation

ER or
A&ED

Pre-Hospital Organization

Hospital Organization

Pre-Hospital Organization

Hospital Organization

MODULE 3

An Operational Perspective: Survival chain

Out-of-Hospital Emergencies

Alert Interval

Out-of/ Pre Hospital Intervention Interval

Alert
Ambulance
Medical
Emergency
Medical Dispatch

Coordination
Communication

In-Hospital Emergencies

Alert
Ambulance
Medical
Emergency
Medical Dispatch

Coordination
Communication

Result

Emergency Reception

Appropriate Hospital

Emergency Medical Management Interval

Alert Interval

Out-of/ Pre Hospital Intervention Interval

Shortest Route

Class:
- Life Threat
- Non LT
- Urgent

Regional Training Course on Mass Casualty Management and Hospital Preparedness

World Health Organization

Emergency Medical Services
MODULE 3
Field of Intervention - medical surge capacity

Medical / Trauma emergencies

Disasters

Daily individual emergencies

MCM

major Health emergencies

Management of emergencies

Management of disasters

The medical regulation process (a flow chart)

Call received

Assess degree or urgency

? Advise, orient, refer

Mobilize resources?

? Coordinate w/ ambulance service

Dispatch transport

Liaise with partners

? Type and Quantity?

MCI?

Liaise with receiving hospitals

Consult potential receiving hospital for final destination

Single patient?
Purpose of EMS System

To provide 24/24 – 7/7 – services to meet the required EMS demands of the population served at any time

• For severe illnesses and critical conditions
• If more resource available: some other situations
• Effectiveness
  - Screening of emergency calls
  - Principles of emergency medical dispatch
  - Alternative decision/disposition options
  - non-emergency cases

Q & A:

Who among you have EMS and EMSS in your country?

• Can you give a short description of your EMS?
• The agency in charge?
• The components?
• The functions related to MCI?
EMS System Components

1. Laws and Regulation (Legislation, Policies, Plans, Procedures, Dispatch)
2. Resources/Logistics (Transportation, Communications, Facilities, Critical Care Units, Financing)
3. Human Resources (Training both in skills and management)
4. Management Information System (Patient Recording, Reporting, Analysis and Utilization)
5. Networking/Partnership (Ministry of Health, Public Safety Agencies, Hospitals, Other Private Organizations, Community Participation)
6. Risk Communication and Media Management
7. Quality Control and Management (Research, Review and Evaluation)
8. Contribution to Public Health Services (ex. Injury Prevention)
Some partners of an EMS System:

a. Ambulance Services
   - Medical or non-medical staff
   - Private or public

b. First Responder Network (with or without medical capacity)
   - Police
   - Rescue
   - Health (include specialized teams)
   - Others

c. Government and private partners

d. Inter-facility transportation

e. ED of Health Care Facility (networking of HCF)

f. Non-emergency group (family physicians etc.)

g. Aero medical services and others

h. Public and the community
1. **Anglo-US EMSS**
   - Ambulance Service (BLS / ACLS)
   - First Responder Network
   - Inter-facility transportation
   - Aero Medical Services
   - Rescue services
   - With corresponding infrastructure
   - **Paramedics and EMTs on scene**

2. **SAMU (Service Assistance Medical d’Urgence) Model**
   - Ambulance service
     - BLS / ACLS
     - ED and networking of hospitals
     - Network of medical rescue providers
     - Network with police rescuers
     - Rescue with non-urgent medical response
   - **Medicalized EMS**
   - Community and hospital based services
   - Emergency care brings the hospital to the patient, delivering EPs and technology to the scene in hope of providing a higher level of care.
3. Philippine EMS(S)

a. No national EMS/EMSS
b. Isolated EMS/EMSS in some local government cities (Makati, Marikina, Davao)
c. Partnerships (Fire Department, DOH and some Private Hospitals, Philippine National Red Cross, Rescue Groups, UP-PGH, Lifeline Arrows (private))
d. In the process of passing a law, “Institutionalizing an EMSS in the Philippines”

Q&A:
Can you share country or local experiences on medical dispatching and regulation?
CORE FUNCTIONS OF EMERGENCY MEDICAL DISPATCHING/REGULATION

• Provide life saving medical service and sophisticated curative care
• Provide safe transport and transport team
• Decide what skills from staff
• Coordinate with receiving hospital
• Coordination between hospitals when necessary

Dispatching Center (DC) Medical regulation

• Emergency phone call
• Possible immediate contact with the other services (police, fire, ambulances, other DC)
• Skilled staff for advice, decision making, immediate access to medical expertise
• Usually located near the ED, although often not an ED service
• Arrangements for use of alternate care delivery than the ED, especially cooperation with GPs
• Networking of the DCs
• Important role in MCM
• Inter-hospitals communications systems
• interagency interoperability
Session 2 Objective:

At the end of this session participants will be able to:

• Prepare a Plan for establishing an EMS (EMSS) organization using concepts and models learned in previous session(s).
MODULE 3
Considerations for an EMS System

- Partnership
- E B Practice
- Appropriateness
- Regionalization
- Integration
- Quality
- Access
- Availability

Health Policy and Strategy
EMS Policy and Strategy

Health Systems
- Governance
- Human Resource
- Financing

Emergency Care System

Targets:
- Satisfaction
- Milestone
- Efficiency/Effectiveness
- Preparedness

MODULE 3
Workshop:

- Break up in groups
- Select the group leader, secretary, and presenter.
- You have one hour to answer the questions
- Write your outputs on a flipchart.
- Present your output in a plenary
MODULE 3

Questions:
1. What is the status of EMSS in your country? (Use worksheet 1)
2. How do you organize and develop this local EMS (EMSS)? (May use Worksheet 2)
3. What are the functions of EMS (EMSS) that can be used in MCM which can be developed at local level when the EMS is not fully established?
4. How can the health sector contribute in the development of local EMS (EMSS)?
5. What training programs are needed to be developed and implemented in support to your EMSS?

Recommendaions for Developing or Strengthening of EMS

Complementarities between Pre-Hospital and Hospital Activities

There must be efficient coordination mechanisms between all actors involved in the management of the patients requiring emergency medical attention in the pre-hospital stage.
Promotion of an Emergency Department in Health Care Facilities

Every hospital should develop its capacity to manage emergency patients at the time of arrival to the facility and without delay or interruption in the continuity of care delivery.

Management of patients on the site

First-Aid skills can save many lives and therefore this should be considered as a priority in training staff of all agencies being involved in the management of situations where emergency patients can potentially be met.
Management of patients during transport

All ambulance crew should receive proper training in managing emergency patients at least the basic technician level as a starting point and progress to advance life support level depending on your specific role in the ambulance team.

Management of emergency calls

The “regulation” of emergency calls and emergency pre hospital care is a complex process that requires organizational coordination mechanisms, adequate logistics and a clear policy.
Coordination with Partners in the network

The coordination of the activities of the various agencies dealing with medical emergency patients should be organized within an inter-sectoral network. The strategy should be of partnership in its very nature.

Monitoring & Evaluation

The assessment of the needs and priorities over time as well as the assessment of the capacity of the partners should be conducted on a regular basis. Monitoring of activities should be implemented to ensure that the process remains relevant, efficient and on the track.
8

Laws, Regulations, Policies, Quality assurance, and accreditation

The Ministry of Health should fulfill its normative role and should issue clear policy and guidelines regarding the emergency medical services and the management of health emergency patients in consultation with other sectors that plays a role in the EMS system.

9

Interface between the community and the private sector

The collaboration between the private and the public sector in order to use efficiently and effectively available medical resources of the community should be promoted as much as possible.
The role of the emergency medical services management committees

In order to ensure effectiveness and efficiency of the overall system there is a need to create at least two different committees dealing with emergency care delivery: A national Committee and one sub-national Committee.

EMS, Disaster planning & community relations

Public education programs are essential to inform the community on ways to access the EMS system properly. They also are important in preparing lay persons to render first aid while waiting for EMS.
Adaptability to local setting to become sustainable

The key in establishing an EMS System is integrating the main principles and practices in its current system and not re inventing the wheel by developing a system from scratch.

TRAINING PROGRAMS TO BE DEVELOPED

a. Relative to appropriate Management of patients on site
   - BLS and First Aid
   - First responders services
   - ACLS, PALS, ATLS, – to all medical staff managing emergency patients
MODULE 3

Non Medical Personnel
– BLS / First Aid
– Medical First Responder (MFR)
– Emergency Medical Technician (EMT)
– Paramedic
– Emergency Medical Dispatch (EMD)

Medical Personnel
– Emergency Medicine
– Emergency Nursing

b. Relative to MCI and IMS (ICS) skills both on site and at hospital setting

c. Appropriate management of patients during transport
• All ambulance crew trained in Basic Technician Course and Advance Life Support
• Sanitary transportation of patient (policy of MOH)

d. Management of patient upon arrival in the ER of the hospital
• Life saving skills and definitive care
• ACLS, PALS, ATLS, – to all medical staff managing emergency patients

e. Management of Rehabilitation Services
f. Skills in specific fields of specialties

g. Communication and networking skills

h. Exercises: for the agencies involved and inter-sectoral exercises

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Public health responsibilities of an EMSS

- Collection and analysis of data
- Injury prevention and control
- Contribution to surveillance (epidemics)
- Sentinel and warning system for unusual events like WMD or CBRNE
- Personnel engaged in education activities, mainly community based
- Role in MCI and Disaster
Q&A:

What is your understanding of surge capacity?
CONCEPT OF MEDICAL SURGE

• Describes the ability to provide adequate medical evaluation and care during events that exceed the limits of the normal medical infrastructure of an affected community

POSSIBLE WORKING DEFINITION OF SURGE CAPACITY

(“Agency for Healthcare research and Quality, USA, 2005”)

• “It is the health care system ability to rapidly expand beyond normal services to meet the increased demand for qualified personnel, medical care, and public health in the event of large public emergencies or disasters”
MODULE 3

Essential components of surge capacity:

• **Staff:**
  number, trained and skilled (increase patient-care capacity)

• **Stuff:**
  equipment, pharmaceuticals, supplies

• **Structure:**
  both physical structure and management systems such as Incident Management System, Networking and Coordination

MODULE 3

MEDICAL SURGE CAPACITY

• The ability to evaluate and care for a markedly increased volume of patients – one that challenges or exceeds normal operating capacity

• In relation to patient volume, there is a need to address the adequate number of hospital beds, Operating Rooms, personnel, pharmaceuticals, supplies, and equipment
MODULE 3

Standby quantity of critical assets depends on the systems that:

• Identify the medical needs
• Identify the resources to address the need in a timely manner
• Move the resources expeditiously to locations of patient need (as applicable)
*Fewer standby resources are necessary if systems are in place to maximize the abilities of existing operational resources

MODULE 3

MEDICAL SURGE CAPACITY

• Refers to the capacity to manage patients requiring unusual or very specialized medical evaluation and care

• Surge requirements are specialized medical and health services (expertise, information, procedures, equipment, or personnel) that are not normally available at the location where they are needed (e.g. pediatric care provided at non-pediatric facilities)
MODULE 3

IMS for Medical Surge Capacity
(Framework of Integration and Coordination)

1. Management of Individual Healthcare Assets

✓ IMS to collect and process information, develop plans, and manage decisions
✓ Processes to provide hands on patient care in emergency
✓ Information management processes and HCF networking

2. Management of Healthcare Network

✓ Coordination among local healthcare assets to provide adequate care across affected areas
✓ Healthcare Coalition provides central integration mechanism for information sharing and management coordination among healthcare assets
3. Integrated Incident Management

- Integrates healthcare assets with other sectors to provide the structure and support needed to maximize during MCM
- Promotes unified incident management approach that allows multiple entities to assume significant management responsibility
- National Support - Effective management processes at the provinces and jurisdiction levels facilitate the request, receipt, and integration of National health and medical resources to maximize MCM

Q & A

What should be the role of the Health Sector in Surge Capacity?
1. Roles of Health Sector in Surge Capacity

**Policies, Guidelines, Protocols and Plans**

- Policy on handling Surge Capacity
- Hospitals Plans
- Systems

2. Facility Enhancement: Infrastructure

**Critical Care Units, ED of hospitals, Ambulances**

- Facility upgrading (ER and critical areas)
- Identified rooms or spaces to accommodate surge of patients
- Special areas (Operating rooms, ICU, decontamination, negative pressure rooms etc.)
- Appropriate ambulances
MODULE 3

3

Human Resources

✓ Training Needs Assessment and Training Agenda
✓ Training based on their role in the organization (both skills and management)
✓ Emergency Department and other critical care areas should be manned by competent staff

MODULE 3

4

Access to other assets:

a. Field hospitals and mobile units

✓ Large scale MCI use of “mobile hubs” or “field hospitals” can be considered
✓ What matters is the framework and coordination mechanisms within which these mobile structures operate and not “who is the owner of the structure”
✓ International Field Hospitals can be useful in some circumstances provided there is a clear policy on that issue
b. Private and public assets

- Manpower (responders, etc.)
- Health Facilities (hospitals, laboratories, blood banks, etc.)
- Infrastructures (for evacuation sites, etc)
- Transport facilities
- Other lifelines (generators, satellite communication, etc.)

* Consider formal arrangements, coordination mechanisms and pre-established procedures

c. MILITARY ASSETS

- Military medical capacity (personnel, hospitals etc.)
- Transport capacity (helicopters, boats, etc)
- Mobile surgical units and field hospitals
- Logistics support to evacuate patients to distant hospitals
- Some training activities & exercises could be developed with the military

* agreements, partnerships and cooperation mechanisms should be established
d. Volunteer Organizations or Groups

- Human Resources
- Logistics/Equipment

5. Provision for Emergency Funds and Logistical Prepositioning including Arrangements

- Allocated funds (including petty cash)
- Available logistics (including equipments); maybe prepositioned
- Special arrangements with pharmaceuticals
- Distribution mechanisms
Networking and Coordination

- Hospital Network
- Network of facilities and services
- Arrangements including protocols and procedures

Session Objectives

At the end of this session, the participants will be able to:

- Discuss the following concepts:
  - Medical Surge
  - Medical Surge Capacity
MODULE 3

END