LOGISTICS AND SUPPLY SYSTEMS

Learning Objectives

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

• Discuss the roles and responsibilities of the health sector in developing supplies and logistics systems for emergencies

• Discuss the challenges and constraints facing the health sector in managing supplies and logistics in emergencies

• Describe the tools available to support planning and managing supplies and logistics in emergencies
Plan of the Module

1. Logistics systems
2. Supplies management
3. Management of international relief teams
4. Logistics exercise

1. Logistics
References for Logistics and Supply

1. New Emergency Health Kit – can serve as a model for a national drugs and equipment list for emergencies – from WHO

2. UNHCR Tools and Resources handbook

3. WHO Reference Values handbook

4. Supply catalogues from IAPSO, UNICEF, UNHCR, MSF, Oxfam

5. WHO laboratory, sanitation, nutrition, surgical care, environmental health, communicable disease guidelines for emergencies

Questions and Answers

• What is Logistics?
What is Logistics?

Logistics is a system which provides the means to acquire and deliver resources (material and human):

1. To the RIGHT place
2. At the RIGHT time
3. In the RIGHT quantity
4. At the RIGHT quality
5. At the RIGHT price

Damage Assessments and Logistics

At the time of an emergency, the following elements of a Damage Assessment and Needs Analysis (DANA) are relevant to planning logistics:

1. Communications systems
2. Transport systems (road, rail, air, sea)
3. Storage and Distribution systems
4. Utilities networks
   - Electricity / gas networks
   - Water supply systems
   - Fuel storage and distribution systems
   - Waste disposal systems
The Scope of Logistics in an Emergency Response

1. Operational Planning based on Damage Assessment and Needs Analysis
2. Procurement / accepting donations system
3. Transport / fleet management system
4. Warehousing / stock control system
5. Distribution system
6. Tracking system
7. Reporting system

Logistics Systems

Logistics

- Networks
- Human Resources
- Standards and Systems
- Stocks
## Logistics Systems

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<thead>
<tr>
<th>National Network</th>
<th>Human Resources</th>
<th>Systems</th>
<th>Stocks</th>
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<tr>
<td>Central/regional/ provincial/local government</td>
<td>Trained professional staff (1 year course)</td>
<td>Intra- and inter-sectoral co-ordination mechanisms</td>
<td>Agreements (MoU) between:</td>
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<tr>
<td>International organisations</td>
<td>Emergency Roster</td>
<td>Standards, guidelines, protocols, catalogues</td>
<td>- Military/ Red Cross and agencies/ departments of government</td>
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<td>Private/voluntary sector</td>
<td>Logistics Needs Assessment Teams</td>
<td>Procedures for:</td>
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<tr>
<td>Academic/ reference institutions</td>
<td>Logistics Management Unit</td>
<td>- Procurement (national and international)</td>
<td>MOH stock</td>
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<tr>
<td>National policy</td>
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<td>stockpiles</td>
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<td>National guidelines</td>
<td>• Donations</td>
<td>- Warehousing</td>
<td>UN Agencies (UN warehouse in Italy)</td>
</tr>
<tr>
<td>National and Local plans</td>
<td>• Warehousing</td>
<td>- Tracking</td>
<td>Other organisations</td>
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<tr>
<td></td>
<td>• Transport</td>
<td>- Reporting</td>
<td>(Red Cross etc.)</td>
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<td></td>
<td>• Finance</td>
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<td>• Reporting and tracking</td>
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</table>

- Regional, National and local storage and distribution plans
- Information Management Systems

## Logistics Response

### Field Set-up
- Logistics Response
- Plan of Action
- Mobilisation

- Logistics Response
- Plan of Action
- Mobilisation

### Logistics Needs Assessment Teams
- Logistics Needs Assessment Teams
- Logistics Management Unit
- Communications
- Procurement
- Donations
- Warehousing
- Transport
- Finance
- Reporting and tracking

### Intra- and inter-sectoral co-ordination mechanisms
- Procurement
- Donations
- Transport
- Warehousing
- Tracking
- Reporting

### Information Management Systems
- Regional, National and local storage and distribution plans
- MOH stock
- stockpiles
- buffer stocks
- UN Agencies (UN warehouse in Italy)
- Other organisations (Red Cross etc.)
- Private/commercial sector
- pre-purchase agreements
- corporate donations
### Logistics Response

<table>
<thead>
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<th>Field set up</th>
<th>Plan of Action</th>
<th>Mobilisation</th>
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<tr>
<td>Operational Bases</td>
<td>Damage Assessment and Needs Analysis</td>
<td>Co-ordination mechanism (intra- and inter-sectoral, international/national/local)</td>
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<td>Human Resources</td>
<td>Setting objectives and priorities</td>
<td>Procurement plan</td>
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<tr>
<td>Management Systems</td>
<td>Operational planning</td>
<td>Distribution plan</td>
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</tbody>
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### Activity

- *What are the constraints associated with managing a health sector logistics systems in emergencies?*
Why are there LOGISTICS problems?

Pressure from the urgent situation and unrealistic demands/expectations of politicians, the media and the public lead to inappropriate operational decisions because of:

1. Lack of policies and guidelines on emergency supplies
2. Lack of standards, protocols and procedures
3. Lack of coordination (national and international)
4. Lack of plans and capacity at local level to manage logistics
5. Lack of investment in professional logistics capacities and systems

2. Supplies
Common supplies problems ...

1. **Huge amounts** of **unrequested items** arrive in the country
2. Many items are **inappropriate, unnecessary, unsorted, partially used and/or loose (unpacked)**
3. Items arrive without:
   - product information
   - packing lists
   - labels (or labels in foreign languages) and
   - expiry date, or already out of date
4. Items are **not packed properly** or protected from the environment /weather
   - hazardous items are not separated from others, glass bottles are broken, food items are packed with liquids and chemicals

Common supplies problems

5. Ports, airports and warehouses are rapidly **overwhelmed with huge volumes** - so items are stored outside in the open (exposed to sun, rain, humidity, wind, dust, pests, damage, fire and pilfering)
6. Items are forwarded to the affected area based on what is nearest to the truck, not on what is **requested, needed or useful**
7. Items arrive at the disaster area at **multiple sites in an uncoordinated way** and without **prior notice** of arrival or item lists
**Common supplies problems**

8. Items arrive at the disaster area unsorted, unclassified and unrequested and in huge amounts that *overwhelm capacity* to distribute (so are again stored in the open)

9. Many donated items have to be *destroyed* and some items need *special incinerators* to do it

*All of these problems create additional expense and management problems for the affected country*

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**Critical Health Sector Supplies ...**

There is *increased demand* for, AND a need to replace *damage/losses*, of:

1. triage, first aid and victim transport equipment (kits, tags, stretchers etc - consumables, spare parts and hardware)
2. acute care medical and surgical equipment (consumables, spare parts and hardware)
3. pharmaceuticals, vaccines, antidotes, antivenins, gases, chemicals, IV fluids, disinfectants, antiseptics
4. diagnostic / laboratory supplies (reagents, culture media)
5. blood, blood products and blood bank consumables
Critical Health Sector Supplies ...

6. personal protective equipment
7. equipment and reagents for monitoring safety of food and water
8. communication, transport, administrative and reporting needs
9. food and basic cooking / household supplies (staff and the public)
10. fuel, electricity, gas and water supply systems and equipment

Critical Health Sector Supplies

11. orthotics, prosthetics and dental equipment
12. patient care needs – beds, linen etc.
13. damaged office furniture and general / administrative supplies
14. personal needs of health sector staff – uniforms/clothing, transport, communication, accommodation, personal hygiene etc.
Strategies for supply management capacity ...

1. Develop capacity for assessment of:
   a. *damage to, and capacities of*, critical infrastructure to maintain the continuity of the supply of goods and services
   b. *the supply needs* of the **operational agencies**, gaps in meeting needs and sources/availability of supplies

2. Establish a **supply management system** for selecting, procuring, maintaining, storing, transporting, distributing, tracking and reporting on supplies

3. Maintain a **directory of suppliers and manufacturers** (including contact details, manufacturing capacity, time required for production and delivery)

4. Establish **procedures** for ordering, paying for, distributing, reordering and accounting for supplies in emergencies

5. Establish a **policy on donations** of medical supplies and equipment

6. Participate in operational **coordination and reporting mechanisms**
Components of supply management systems ...

1. Standard treatment guidelines, protocols and diagnostic procedures for emergencies
2. Standard National Lists for use in emergencies:
   - pharmaceuticals, vaccines, chemicals, reagents and other supplies
   - kits for specific purposes (first aid, triage, injury, cholera, burns, chemical and radiation accidents etc.)
   - equipment (diagnostics, laboratory, personal protective equipment, administration, assessment and administration/reporting), consumables, spare parts
3. Emergency procedures for:
   - central procuring, transporting and distributing supplies
   - Local ordering and replacing essential consumables by health facilities (reagents, culture media, medical supplies, pharmaceuticals, linen, food and water)
   - security of controlled drugs
   - reporting and accounting for supplies

Components of supply management systems

3. Back up systems for health facilities to provide water, electricity, gases, fuel, heating/cooling, cold chains and waste-disposal

4. Regional, national, provincial and local stockpiles of essential supplies and equipment

5. Buffer stocking systems which use existing supply management systems to maintain an extra margin for emergencies (through rotating of stock - this resolves issues of safety, storage, lifetime cycle, expiry dates and packaging/ labelling)

6. Pre-agreements and MOU with manufacturers and suppliers for emergencies
Activity

- What are the constraints associated with managing health sector supplies in emergencies?

Why are there SUPPLIES problems?

Pressure from the urgent situation and unrealistic demands/expectations of politicians, the media and the public lead to inappropriate operational decisions because of:

1. Lack of national policies and guidelines on emergency supplies
2. Lack of national standards, protocols and procedures
3. Lack of capacity and plans at local level to manage supplies
4. Lack of coordination (national and international)
5. Those who accept international donations (MOFA) and process them (Customs) do not know what is actually needed
6. Lack of investment in professional logistics systems
Donated medicines

**1976 Guatemala Earthquake**
- Over 90% of donations were unsorted
- In a two-week period, 100 tons of mixed, unused medicines were delivered

**1988 Armenia Earthquake**
- 5,000 tons of drugs donated but only 100 tonnes was needed
- 70% of all donated drugs were inappropriate
- International aid was needed to finance the safe disposal of expired and dangerous donated medicines
Donated medicines

1991 former Yugoslavia

1994 Rwanda

1994 WHO report on Croatia
- 15% donations were completely unusable
- 30% donations were not needed
- 340 tonnes of expired drugs were donated - the government spent approximately US$ 4 million to destroy them

1992-95 Bosnia and Herzegovina
- 30,500 tons of drugs donated but need was only 1,800 tons
- 50 to 60% of items were inappropriate

2004 Aceh Tsunami
- One country donated enough medicines to supply Aceh for one year, but there was no local capacity to store them
- Donors refused to allow donated medicines to enter national supply system and demanded all go directly to Aceh
- WHO had to build a special incinerator just to destroy dangerous and hazardous medicines/chemicals donated to Aceh – it processed an average of 20 tonnes of material a month
- PSF report on donations to Indonesia concluded that unwanted, unrequested and inappropriate donations are still a major problem in disasters
The 2004 Tsunami

In Indonesia, the volume and variety of donated supplies and the lack of a unified supply management system linking donated and national supplies resulted in:

A logistics disaster

SUMA

A software tool to support the management of humanitarian supplies in an emergency

It produces daily reports of all items received and distributed from a warehouse or port

It links information from multiple warehouse and port sites to produce a comprehensive accounting system for all supplies received and used in an emergency

SUMA is NOT a tracking system – it cannot follow a single item from arrival to final use
Components of SUMA

1. Register - Every item in every shipment arriving to the country is registered by the system at the entry point

2. Classify - What is it – medicine or shelter item? Categories are fixed

3. Sort by priority

4. Inventory

5. Warehouse management

6. Follow-up pledges for donations

SUMA Categories

- Medicines
- Food and Beverages
- Health
- Water and Environmental Health
- Personal Needs/Education
- Electrical/Construction
- Agriculture/Livestock Industry
- Human Resources
- Logistics/Management
- Shelter/Housing
- Unsorted
Sort by Priority

Urgently Needed: Priority # 1

Nice but can Wait: # 2

I wish it could dump it somewhere! # 3

Inventory criteria

1. Technical features
2. Presentation (syrup, tablets…)
3. Packaging (bottles, boxes…)
4. Total quantities

The greatest challenge is health supplies due to complexity and volumes of items

Customs officers and health workers must work as a team
SUMA

1. It provides *snap shots* of the flow of supplies at several stages

2. It does not identify and track any single item over time: Should SUMA do that?

3. The information belongs to the host government
SUMA in the 2004 Tsunami

SUMA was deployed to the tsunami affected regions in Indonesia

SUMA is also used by...

Major NGOs
- Red Cross
- MSF
- Caritas

The UN for
- UNDAC training
Logistics Support System (LSS)

LSS is an agreement between UN agencies (WHO, WFP, OCHA, UNICEF, and UNHCR) to develop an integrated logistics system.

It is part of a wider process to improve the overall coordination of UN agencies in emergencies.
Milestones of LSS

1. Agreement on the principles of humanitarian supply coordination between five UN agencies and key humanitarian NGO - 2004

2. Software design process
   - β version developed - mid August 2004
   - Verification of software - November-December 2004
   - Field tested - July-December 2005
   - First public version release - ?

LSS Main Objectives

1. Facilitate the exchange of information among humanitarian institutions

2. Complement agency-specific commodity tracking systems

3. Minimize duplication and improve the response to actual needs of affected population
3. Management of International Relief Teams
Question

*Should governments manage foreign relief agencies and workers entering their country after a disaster?*

Management of International Relief Teams

**Myth:**

*Foreign medical volunteers with any kind of medical background are needed*

**Reality:**

*The local population almost always covers immediate lifesaving needs. Only medical personnel with skills that are not available in the affected country may be needed*

Management of International Relief Teams

Types of international relief teams:

- government to government support – teams from Ministries and national agencies
- military support
- professional associations e.g. search and rescue
- NGO support
- spontaneous support – individuals arrive to “help”

Issues of International Relief

- How to know who is offering support, who is on the way and who is already in the affected area?
- How to know the agency has the necessary expertise and team members are qualified and competent
- How to ensure accountability and transparency of foreign teams
- How to refuse unwanted offers of assistance
- How to ensure national policies and practices are respected e.g. DOTS, EPI
- How to deploy teams to where they are needed rather than where they want to go
- How integrate international teams into coordination mechanisms
- How to get international teams to submit reports before they leave
### Principles in the Management of International Relief

- Foreign teams should **only be sent in response to a specific request** from the affected country.

- Foreign agencies should register their presence and their staff with the national disaster agency and commit to participate in national and local coordination processes.

- Foreign teams should be asked to sign a **code of conduct**, to commit to be self-sufficient and to not “poach” the best government staff.

### Tools in the Management of International Relief

- The emergency / disaster laws of the country should define the roles and responsibilities of foreign teams and define **mechanisms to initiate requests** for foreign assistance.

- Mechanisms and procedures are needed to accept, register and deploy foreign teams, ideally administered by and through the national disaster coordination agency.

- Special arrangements may be needed to accept assistance from foreign military teams.

- Mechanisms are needed to ensure that foreign teams know and respect local health practices: e.g. DOTS and EPI policy.

- Mechanisms are needed to monitor the ethics and competencies of foreign relief workers, and to address issues of malpractice and abuse.
Management of International Relief Teams …

The Ministry of Foreign Affairs is the lead government agency for managing foreign assistance, through providing:

- guidelines for foreign embassies on national policy and procedures for accepting foreign assistance (supplies and teams)
- standard protocols for embassies in foreign capitals to register agencies and qualifications of proposed team members wishing to travel to the disaster
- fast track process for National Disaster Coordinating Body to receive and clear applications to provide foreign assistance
- fast track process for visas, immigration and customs clearances

Management of International Relief Teams

- designated arrival points for foreign teams and supplies (they should never arrive directly at the disaster site)
- welcome desks at designated airports to receive, register, brief, issue ID cards, transport and accommodate foreign teams
- mechanisms to consult sectoral agencies and national disaster management agencies on pending offers to seek acceptance / refusal / delay / more information
- mechanisms to deploy foreign teams to places where they are actually needed and requested
- mechanisms to document the work of foreign teams
Activity

• What are the constraints associated with managing international teams in emergencies?

Why are there INTERNATIONAL RELIEF TEAM problems?

Pressure from the urgent situation and unrealistic demands/expectations of politicians, the media and the public lead to inappropriate operational decisions because of:

1. Lack of national policies and guidelines on foreign assistance in emergencies

2. Lack of national standards, procedures, protocols and criteria for selecting personnel needed to provide international relief assistance

3. Those who accept international offers (MOFA) and process them (Immigration) do not know what is actually needed

4. Lack of coordination (national and international)
Exercise Background

It’s 7 am on a Sunday morning in January. It is raining heavily and rain is expected to continue for the coming days.

At midnight, there was a severe earthquake to the north east of the Fiji islands – reports are that much of Vanua Levu is badly damaged. There is an assessment team from the military already on the island. They report that the airport and port at Savusavu can be used but repairs are needed and it will take 2 days to restore full capacity.

The government has declared a disaster, activated the national disaster response system and called for international assistance. Damage is light on Vitu Levu.

You are members of the logistics sub-committee of the NDMO, based in Suva. Your task is to set up a national supply management and logistics system for this emergency.
### Exercise

Mark on the map of the Fiji Islands:

1. The "red" and "yellow" and "green" zones around the disaster area, with access control points marked
2. The **forward operations bases** for local operations commanders and their logistics bases
3. The **operational command base** where:
   a. the overall commander is based
   b. teams and supplies gather before being sent to the forward operational bases
4. The designated **international arrival points for foreign teams**
5. The **designated (air) ports** for receiving foreign donations
6. The **chain of medical evacuation** and the preferred routes
7. The **chain of communications**
8. The **traffic flow and security control points**

Task A - develop symbols and colour codes to represent each element
Task B - draw the flow of logistics on the map using symbols and lines

### Zoning

<table>
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<tr>
<th>Zoning</th>
<th>Red</th>
<th>Yellow</th>
<th>Green</th>
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<tr>
<td>Cool</td>
<td></td>
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<tr>
<td>Warm</td>
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<tr>
<td>Hot</td>
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</table>

**Zoning**

Red
Yellow
Green
The Logistics Flow Map

- Injured, dead, evacuees, debris
- Local NGO, voluntary and commercial response
- Foreign teams arrival point
- Operations Command Base
- International donations at ports and airports

Zone A
- HQ

Zone B
- HQ

Zone C
- HQ

Zone D
- HQ

PHEMAP | LOGISTICS AND SUPPLIES
The Operations Command Structure

Zone A    Zone B

Zone C    Zone D
LOGISTICS AND SUPPLIES

THANK YOU