Hospital Facilities for Disaster Preparedness

Department of Emergency Medicine
Faculty of Medicine – University of Brawijaya
Concept of Disaster & Emergency Assistance

Disaster

Mass victims
- injuries
- handicaps
- deaths

IDP’s
- injuries%
- deaths%
- malnutrition
- SAB & environment. (-)
- Paralyzed health services
- etc

Infrastructure damage
- building (hospital/PHC/Pustu) damaged
- Health equipment, Transport, communication equipment damage/missing
- Drugs supplies damage/missing, etc
“The key principle of disaster medical care is to do the greatest good for the greatest number of patients, while the objective of conventional medical care is to do the greatest good for the individual patient.”
Ruined Health Center

Hospital

PHC (Puskesmas)
1. Facilities

General:
• Command Post
• Information Center
• Public Relation
• Public Kitchen
• Logistic depot
• Volunteer post
• Relatives/Family room

Victims Management:
• Triage
• Minor OT
• OT
• Isolation Room
• Wards
• Intensive-intermediate care unit
• Mortuary

Supporting Facilities:
• Electricity
• Clean water
• Medical gas
• Fuel tank
• Communication system
• Waste disposal
• Air and ventilation

FOOD !!!
Pos komando

- Denah / peta RS tsb
- Peta kota dan provinsi
- Alat komunikasi
- Komputer, printer dan internet
- Televisi
- Daftar nomer telpon penting
- Buku Protap
- Alur sistim komando & struktur organisasi
TIP & TRIK

MINIMAL INTERVENSION, PENDEKATAN ~ KEBIJAKSANANAN LOKAL
Hospital facilities

Registration

Triage
Hospital facilities

P1 (RED)  P2 (YELLOW)
Hospital facilities

P3 (GREEN) Minor OT
Hospital facilities

Ward

Mortuary
Hospital facilities

Nutrition/Public Kitchen

Logistic & Pharmacy
Hospital facilities

Nurse Station

Office
Hospital facilities

Water Source

Disposal
Post

Volunteer Post  Command Post
Relatives/Family Post
Emergency Mass Casualty Decontamination Area
“Surge Capacity”:

Kemampuan memenuhi kecukupan personil, supply dan peralatan, fasilitas, serta sistem agar dapat memberikan pelayanan yang memadai dihadapkan kebutuhan segera dengan adanya arus pasien yang besar akibat bencana.
Components Of Surge Capacity

General agreement does exist on its key components, which are referred to as the “4 S’s” of ‘staff,” “stuff,” “structure,” and “systems.”

- **Staff** refers to personnel,
- **stuff** consists of supplies and equipment,
- **structure** refers to facilities, and
- **systems** include integrated management policies and processes
2. Plan
Hospital = Advance Medical Service
Post
Sign Boards

KANTOR
(Office)
Triage System for Disaster

RESPIRATIONS

NO

POSITION AIRWAY

NO

Minor

Morgue

Immediate

YES

<30/Min. or >10/Min.

>30/Min. or <10/Min.

Immediate

Radial Pulse Absent

Radial Pulse Present

Control Bleeding

Immediate

MENTAL STATUS

Can’t Follow Simple Commands

Immediate

Can Follow Simple Commands

Delayed

HOSPITAL DESTINATION

Oriented

Disoriented

Unconscious

TIME

PULSE

B/P

RESPIRATION

DECEASED

IMMEDIATE

DELAYED

MINOR
S.T.A.R.T. (Simple Triage And Rapid Transport)

- RESPIRATIONS
  - >30/Min. or <10/Min. → Immediate
- PULSE
  - Radial Pulse Absent → Immediate
- MENTAL STATUS
  - Can’t Follow Simple Commands → Immediate
Patients Flow At the Hospital

Patient comes

Registration

Patient

Triage

Visual Triage

Nurse

Unable to walk

Walk

P1

P2

P3

Ward/Discharged/Observ

Think globally, act globally, empower with local capacities
ED Flow; we are not only dealing with number of patients but also...

Response Time

Pts arrive → Triage → ED management → Admission/Discharge/Obs/Note → Further Management
Incident Operation Plan

A. Alasan untuk evakuasi
   Untuk memindahkan pasien/personel dari ancaman bahaya atau bahaya yang nyata misalnya kebakaran, ledakan, gempa dsb.

B. Implementasi pada bencana internal
   • Seluruh RS diinformasikan tentang pemberlakuan “interna disaster plan”.
   • Pasien dipindahkan dari daerah berbahaya kedaerah yang “aman”.
   • Keputusan pemberlakuan rencana bahaya internal dilakukan oleh “person in charge”.
   • Bila memungkinkan lakukan absensi sebelum, selama, dan sesudah bencana

C. SOP
   • Protap
Patient Referral

Koordinasikan dengan RS lain untuk kemungkinan merujuk pasien, perlu tambahan perbekalan atau tambahan personel.

RS rujukan harus diberi informasi jumlah pasien yang dirujuk dan catatan medisnya.
3. Equipment & Tools

- Emergency Drugs
- Portable Pulse Oxymeter
- Triage Tag (P1-P2-P2, different colors)
- Pts Observation Charts
- Non-Rebreathing Masks (adults & Paeds)
- Nasal Canules (adults & Paeds)
- Nebulizer Masks (adults & Paeds)
- Portable Ventilator
- Airway Management Set
- Oxygen Regulator
- Name tag with logo for team personnel
- TED Vest
- Sterile Gel
- Laboratory Labels
- Sticky Labels
- Disposal Bags (Yellow)
- Trays for paperworks flow
Tools

- Rapid Health Assessment
- Sign Boards
- Triage Tag
- Medical Record
- Registration Form
- Observation Chart
- Nursing Progress Note
- Emergency Drug List
- Non-emergency Drug List
- Informed Consent
Medical Record

(courtesy of Dr Ali Haedar)
# Registration Form

<table>
<thead>
<tr>
<th>Seq</th>
<th>Code</th>
<th>Name</th>
<th>Address</th>
<th>Contact</th>
<th>Age</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1234</td>
<td>John Doe</td>
<td>123 Main St</td>
<td>555-1234</td>
<td>25</td>
<td>Male</td>
</tr>
<tr>
<td>2</td>
<td>5678</td>
<td>Jane Smith</td>
<td>456 Elm St</td>
<td>555-5678</td>
<td>30</td>
<td>Female</td>
</tr>
<tr>
<td>3</td>
<td>9012</td>
<td>Michael Johnson</td>
<td>789 Oak St</td>
<td>555-9012</td>
<td>35</td>
<td>Male</td>
</tr>
<tr>
<td>4</td>
<td>3456</td>
<td>Sarah Davis</td>
<td>101 Pine St</td>
<td>555-3456</td>
<td>40</td>
<td>Female</td>
</tr>
<tr>
<td>5</td>
<td>7890</td>
<td>David Lee</td>
<td>222 Cherry St</td>
<td>555-7890</td>
<td>45</td>
<td>Male</td>
</tr>
</tbody>
</table>

*Please fill out only one.
Observation Chart

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
<th>Observer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- Date: Date of observation
- Time: Time of observation
- Activity: Description of activity
- Location: Location where observation was made
- Observer: Person who observed the activity
# Nursing Progress Note

<table>
<thead>
<tr>
<th>Date</th>
<th>Nursing Diagnosis</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Patient Name:**
- **Nurse:**
- **Age:**
- **Unit:**

[Check periodically and family informed of local expectations]
# Emergency Drug List

**Field Hospital Wasior, Fakultas Kedokteran Universitas Brawijaya**

<table>
<thead>
<tr>
<th>Golongan</th>
<th>Nama Generic</th>
<th>Merah Dagang</th>
<th>Sediaan</th>
<th>Penggunaan</th>
<th>Akuatik</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analgetika</td>
<td>Difensone</td>
<td>Difensone</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Narkotika</td>
<td>Narkotika</td>
<td>Narkotika</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Sedative</td>
<td>Sedative</td>
<td>Sedative</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Anti-inflamasi</td>
<td>Anti-inflamasi</td>
<td>Anti-inflamasi</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Antitobulsi</td>
<td>Antitobulsi</td>
<td>Antitobulsi</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Antihistamin</td>
<td>Antihistamin</td>
<td>Antihistamin</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Antibiotik</td>
<td>Antibiotik</td>
<td>Antibiotik</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Antisyphilis</td>
<td>Antisyphilis</td>
<td>Antisyphilis</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Antipikolin</td>
<td>Antipikolin</td>
<td>Antipikolin</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Anti-inflamasi</td>
<td>Anti-inflamasi</td>
<td>Anti-inflamasi</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Antidote</td>
<td>Antidote</td>
<td>Antidote</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Antiemetic</td>
<td>Antiemetic</td>
<td>Antiemetic</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Antituberkul</td>
<td>Antituberkul</td>
<td>Antituberkul</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Antifungina</td>
<td>Antifungina</td>
<td>Antifungina</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Antihematina</td>
<td>Antihematina</td>
<td>Antihematina</td>
<td>60 mg</td>
<td>60 mg</td>
<td>60 mg</td>
</tr>
</tbody>
</table>
Non-emergency Drug List

<table>
<thead>
<tr>
<th>Category</th>
<th>Medication</th>
<th>Trade Name</th>
<th>Package</th>
<th>Shelf Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticoagulant</td>
<td>warfarin</td>
<td>Coumadin</td>
<td>Tab</td>
<td>3 years</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>amoxicillin</td>
<td>Augmentin</td>
<td>Cap</td>
<td>18 months</td>
</tr>
<tr>
<td>Antihypertensives</td>
<td>captopril</td>
<td>Capoten</td>
<td>Cap</td>
<td>18 months</td>
</tr>
<tr>
<td>Antidepressants</td>
<td>fluoxetine</td>
<td>Prozac</td>
<td>Tab</td>
<td>18 months</td>
</tr>
<tr>
<td>Antipsychotics</td>
<td>risperidone</td>
<td>Risperdal</td>
<td>Tab</td>
<td>3 years</td>
</tr>
<tr>
<td>Antihistamines</td>
<td>cetirizine</td>
<td>Zyrtec</td>
<td>Tab</td>
<td>3 years</td>
</tr>
<tr>
<td>Antidiabetic</td>
<td>metformin</td>
<td>Fortamet</td>
<td>Tab</td>
<td>18 months</td>
</tr>
<tr>
<td>Antihypoglycemics</td>
<td>sitagliptin</td>
<td>Januvia</td>
<td>Tab</td>
<td>18 months</td>
</tr>
<tr>
<td>Antituberculosis</td>
<td>isoniazid</td>
<td>INH</td>
<td>Tab</td>
<td>18 months</td>
</tr>
<tr>
<td>Anticancer</td>
<td>cisplatin</td>
<td>Cisplatin</td>
<td>Inf</td>
<td>18 months</td>
</tr>
<tr>
<td>Antineoplastic</td>
<td>mitomycin</td>
<td>Mitomycin</td>
<td>Inf</td>
<td>18 months</td>
</tr>
<tr>
<td>Antileukemia</td>
<td>daunorubicin</td>
<td>Daunorubicin</td>
<td>Inf</td>
<td>18 months</td>
</tr>
<tr>
<td>Antihyperuricemia</td>
<td>probenecid</td>
<td>Probalan</td>
<td>Cap</td>
<td>18 months</td>
</tr>
<tr>
<td>Antihyperuricemia</td>
<td>benzbromarone</td>
<td>Dyazide</td>
<td>Cap</td>
<td>18 months</td>
</tr>
</tbody>
</table>

*Note: This list is a simplified representation of the actual drug list.*
WE NEED TO ALWAYS BE PREPARED!