

Respon Rumah Sakit dalam Penanggulangan Bencana

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Tujuan Pembelajaran Khusus (TPK)

- Setelah mempelajari materi peserta mampu :
- 1. Tersusun peta hazard,kapasitas dan kerentanan di RS setempat
- 2. SOP all Hazard
- 3. SOP untuk specific Incident (Major Incident)
- 4. Tersusun siteplan RS dan Standar pelayanan kedaruratan / Kapasitas darurat / surge capacity
- 5. Mampu mengidentifikasi RS jejaring terdekat

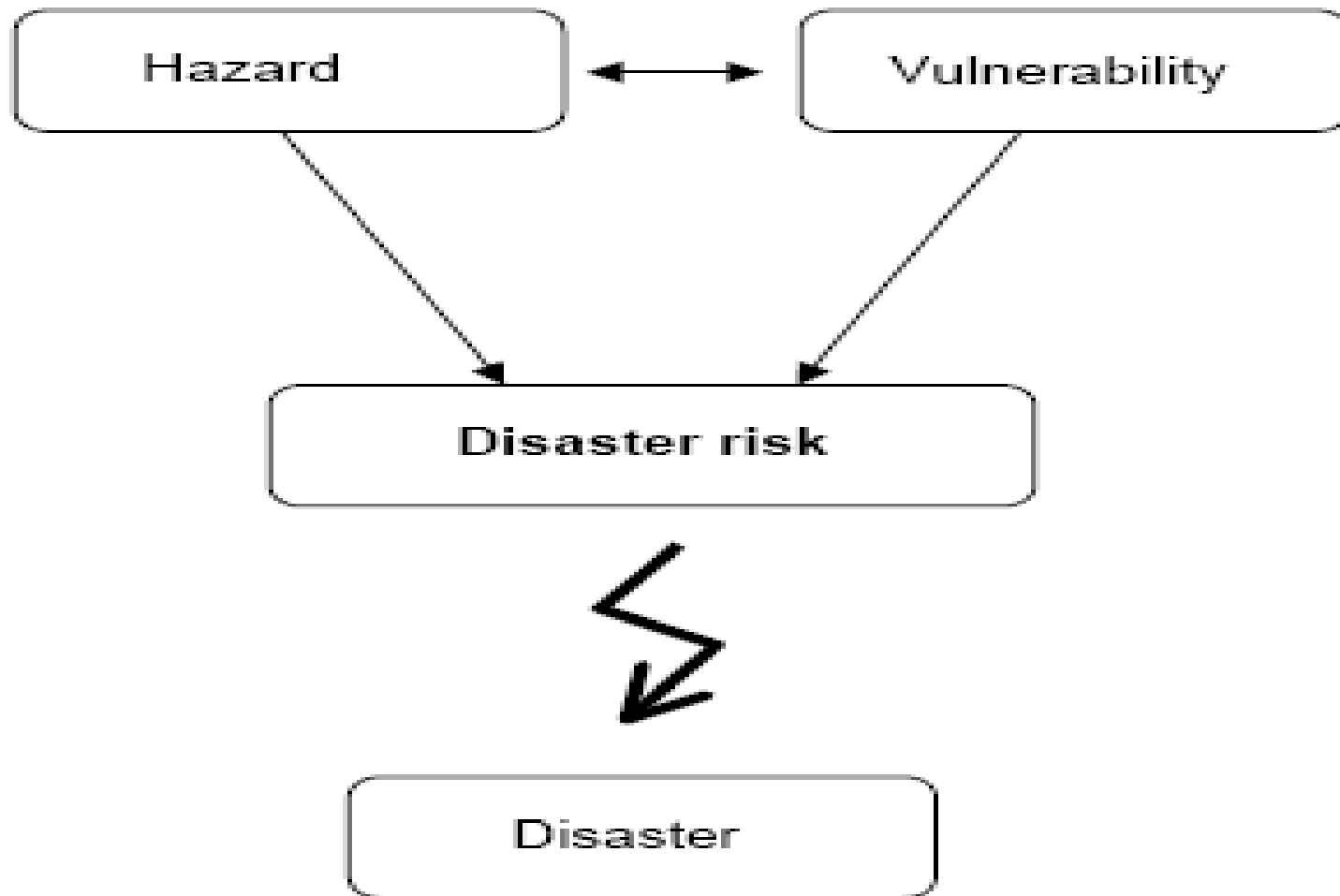
Pokok Bahasan & Sub Pokok Bahasan

- 1. Triase
- 2. Hazard Mapping
- 3. Tim Reaksi Cepat Penanggulangan Bencana (Disaster Medical Assistant Team)
- 4. Prosedur Umum Penanggulangan Bencana di Rumah Sakit (Emergency Operation Plan)
- 5. Peningkatan kapasitas darurat rumah sakit (surge capacity)
- 6. Prosedur khusus dalam melaksanakan dukungan medis dalam penanggulangan krisis kesehatan akibat bencana (Incident Operation Plan)
- 7. Area dekontaminasi

HAZARD MAPPING



Components of disaster risk.

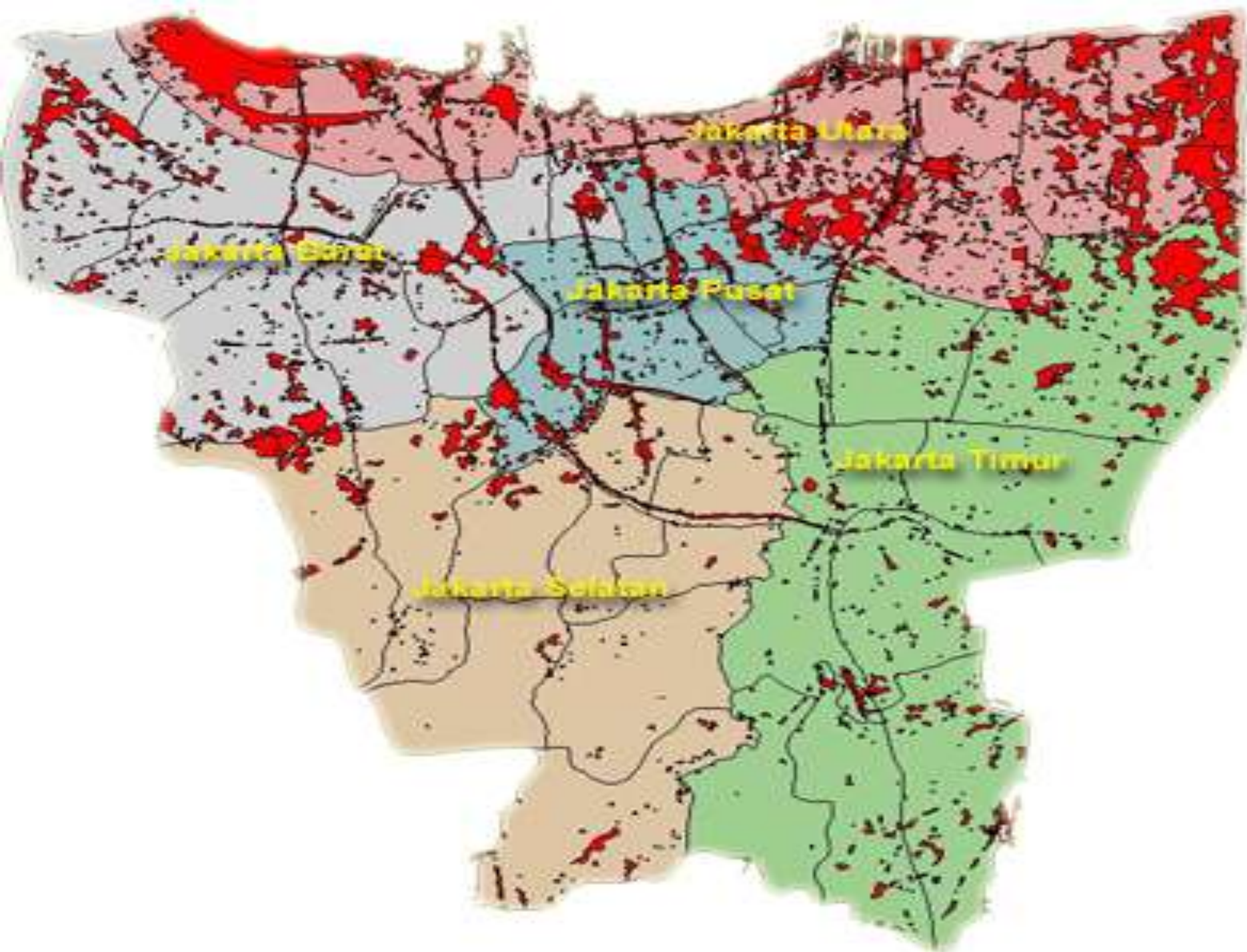


PETA RAWAN BENCANA

- SUATU INFORMASI FUNDAMENTAL DALAM PROGRAM PENGURANGAN RISIKO BENCANA
- **BADAN PENANGGULANGAN BENCANA DAERAH** MEMPUNYAI TUGAS A.L.
 - MENYUSUN, MENETAPKAN DAN MENGINFORMASIKAN PETA RAWAN BENCANA

Hazard Vulnerability Assessment:

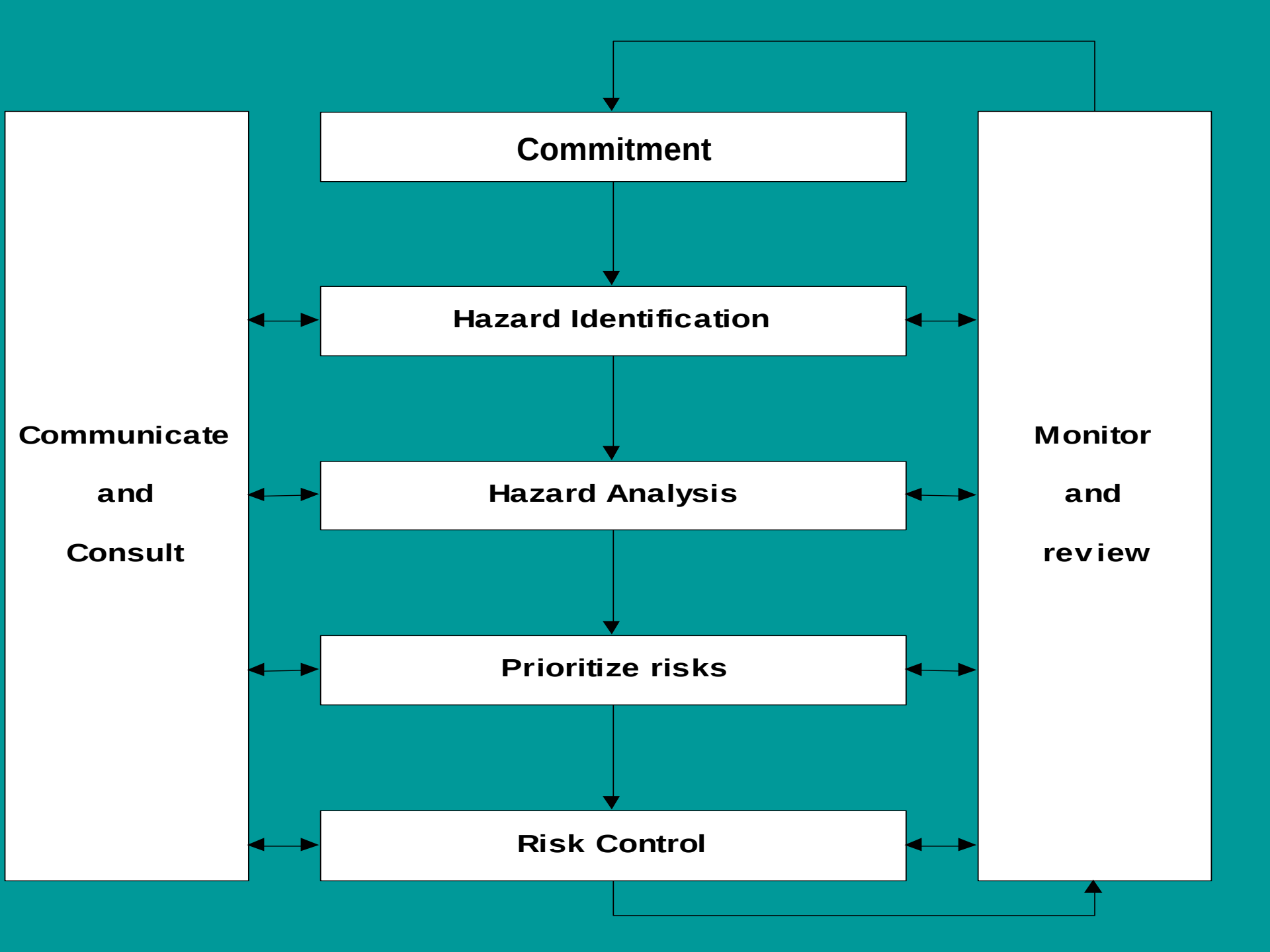
- **RUMAH SAKIT MELAKUKAN IDENTIFIKASI ADNYA POTENSIAL HAZARDS SERTA DAMPAK YANG DAPAT TIMBUL TERHADAP PELAYANAN RS.**
- **INCIDENT COMMANDER MENGEMBANGKAN PERENCANAAN PENANGGULANGAN BENCANA SESUAI DENGAN PRIORITAS YANG SPESIFIK BERDASAR HAZARD VULNERABILITY ANALYSIS.**



Risk Assessment – Hazard Guidelines

The potential hazards listed below are to be used as a guideline, it is not intended to act as a comprehensive checklist.

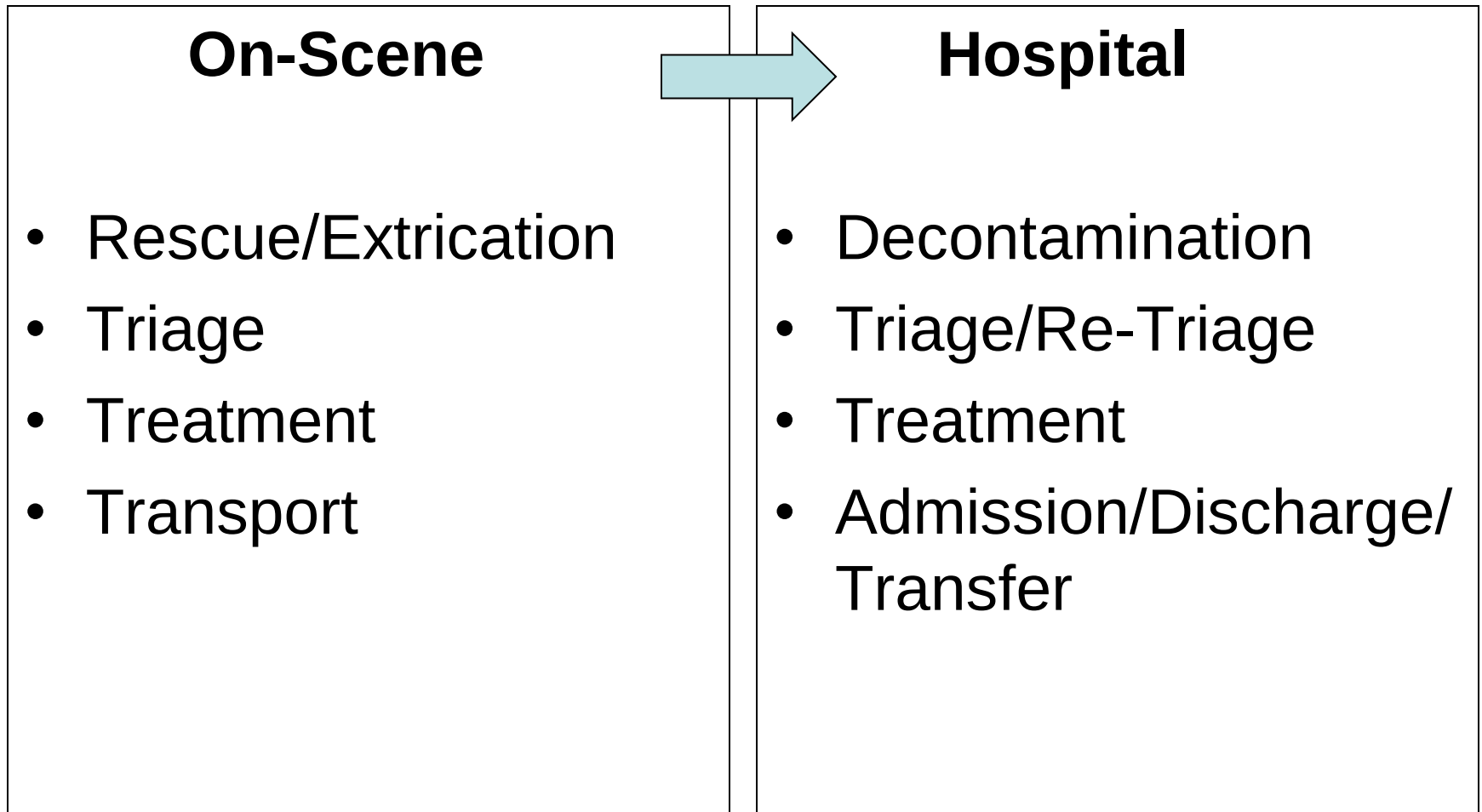
- **Vibration**
- **Emergency Switches/Guarding**
- **Confined Spaces**
- **High Pressure Fluid**
- **Fumes or emissions**
- **Hazardous substances**
chemicals, asbestos
- **Biological** human, plant and animal
- **Crushing** falling, collapsing, trapping
- **Cutting, Stabbing & Puncturing**
ejected, falling, disintegration
- **Striking** disintegrating, ejecting
- **Suffocation** low oxygen, high contamination, fumes
- **Friction**
- **Entanglement**
- **Fire**
- **Access / Egress**
- **Shearing**
- **Environmental** dust, noise, weather
- **Manual Handling** weight
- **Ergonomics** design, repetition, restriction, lighting, behaviour
- **Electrical** shock, burn, isolation, leads, cables, switches
- **Slipping Tripping & Falling**
surfaces, spills, obstacles, guard rails, ladders, collapse
- **Temperature** air, surfaces, stability



Triage Systems



Assessment and Care of Multiple Patients



Sasaran Triage

**To achieve the greatest good
for the greatest number of casualties**



Hospital Triage Unit Leader Responsibilities:

- Identify the **location(s)** where triage will occur
- Ensure **safe access** and egress
- Anticipate **self transporting patients**
- Implement hospital MCI **triage protocol***
- **Communicate** / document triage decisions to
Treatment Group

S.T.A.R.T. Triage System

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

Example of a triage method that quickly classifies victims and prioritizes treatment

MINOR

- Little or no care needed,

DELAYED

- Delay care, injuries not life-threatening

IMMEDIATE

- Immediate care for life-threatening situation

MORGUE

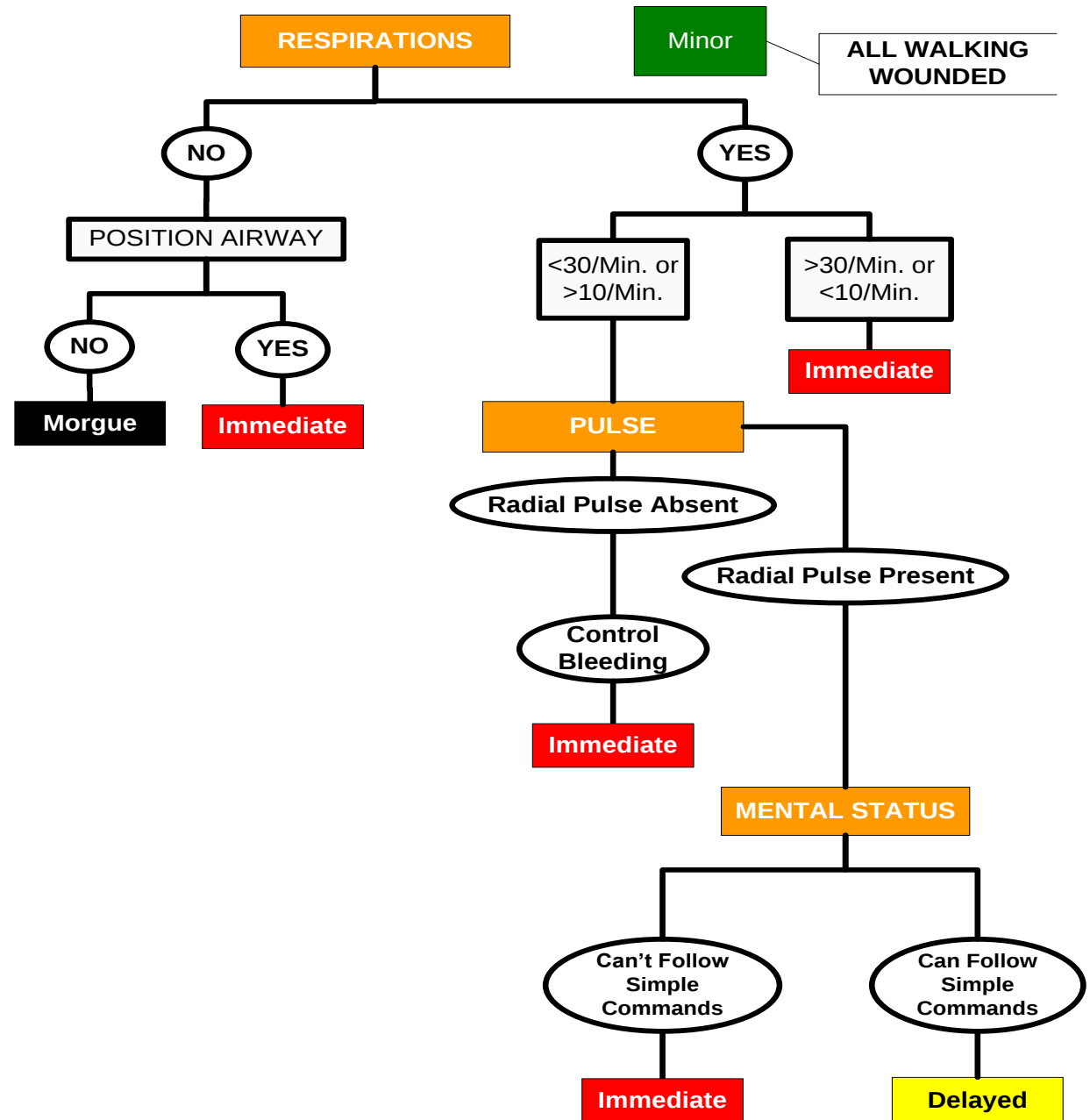
- No care, mortal injuries, cannot be saved

START uses R P M

- **R**espirations (<10 OR >30)
- **P**ulse (no radial pulse)
- **M**ental status (unable to follow simple commands)

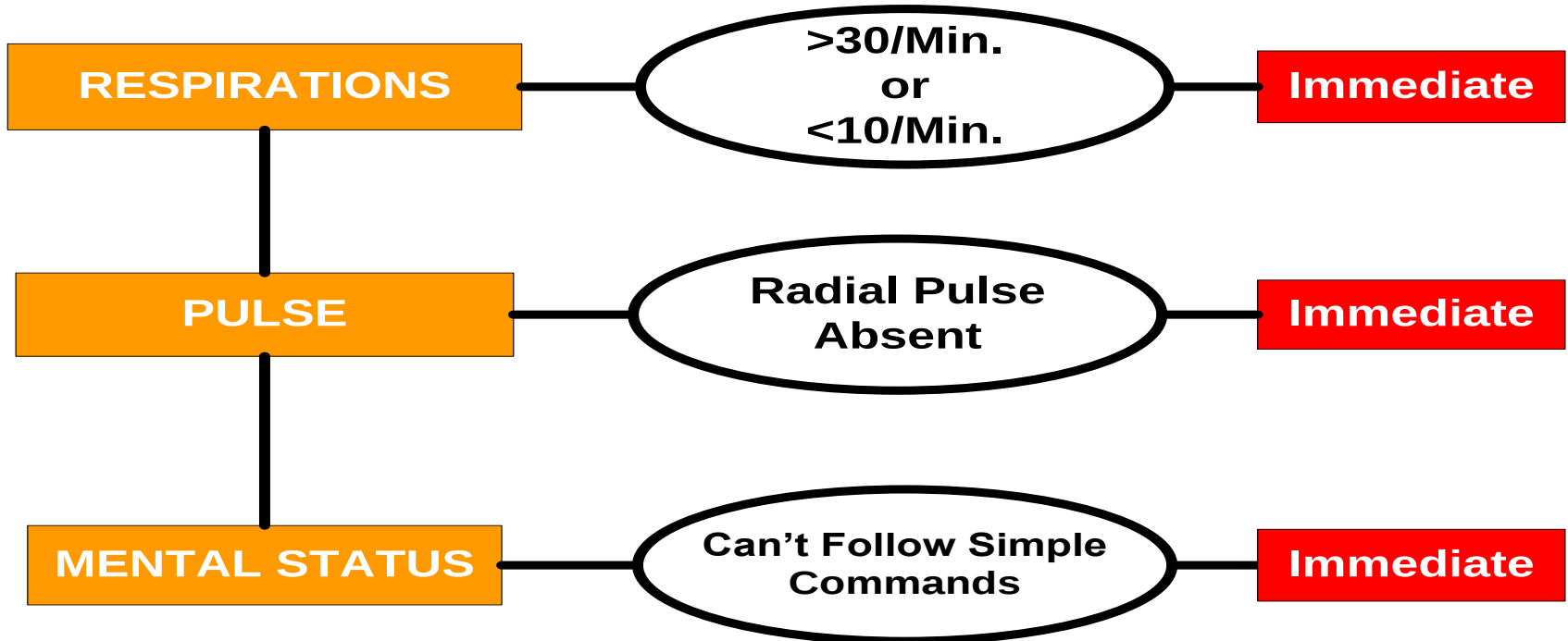
START Triage

A process in which victims are sorted into groups; priorities of care are established and resources are allocated.



PATIENTS ARE RED IF THEY HAVE EVEN ONE FINDING OF:

- RR <10 OR > 30
- No Radial Pulse
- Cannot follow simple commands



Tools for S.T.A.R.T.

Left side used
for notes on
injuries and vital
signs

Right side
contains
decision flow
chart (algorithm)

Note the four color-coded categories at the bottom

CONTAMINATED

FRONT

CONTAMINATED

Personal Property Receipt/ Evidence Tag 55555

Destination 55555

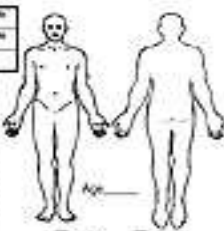
Via 55555

Comments/Information

Comments/Information

TRIAGE TAG 55555

Green Dues	Yes	No
Secondary Dues	Yes	No
Suspects		
Blunt Trauma		
Burn		
C-Spine		
Cardiac		
Crushing		
Fracture		
Laceration		
Penetrating Injury		

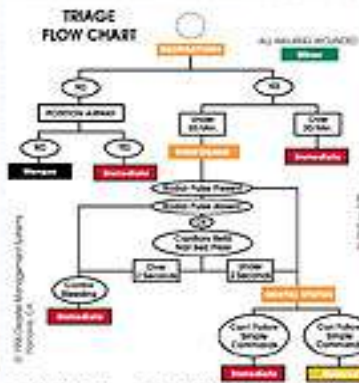


Age _____

☐ Male ☐ Female

Other: _____

TRIAGE FLOW CHART



VITAL SIGNS

Time	B.P.	Pulse	Respiration

Time	Drug Solution	Dose

RESPIRATIONS R
☐ Yes
☐ No
☐ Oriented

PERFUSION P
☐ < 2 Sec
☐ > 2 Sec
☐ Disoriented

MENTAL STATUS M
☐ Can Do
☐ Can't Do
☐ Unconscious

MORGUE 55555

IMMEDIATE 55555

DELAYED 55555

MINOR 55555

PERSONAL INFORMATION

NAME _____

ADDRESS _____

CITY _____ ST _____ ZIP _____

PHONE _____

COMMENTS _____

MORGUE 55555

IMMEDIATE 55555

DELAYED 55555

MINOR 55555

PERSONAL INFORMATION

NAME _____

ADDRESS _____

CITY _____ ST _____ ZIP _____

PHONE _____

COMMENTS _____



surge capacity

surge capacity

- The Joint Commission ([2008](#)) has defined surge capacity as :

“the ability to expand care capabilities in response to sudden or more prolonged demand”

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

- “surge capacity” dapat diartikan sebagai :
 - **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.**

PROSEDUR UMUM
MENGHADAPI BENCANA
(Emergency Operation Plan)

Effective disaster management approach

- **Single “all hazards” plan**
- **Comprehensive approach**
 1. prevention and mitigation
 2. preparedness
 3. response
 4. recovery
- **Integration of agencies and organizations**
- **Community preparedness**

PEMBERITAHUAN KEADAAN BENCANA

- **1. KARYAWAN RS YANG MENERIMA INFORMASI TENTANG TERJADINYA BENCANA HARUS BERUSAHA MENGKLARIFIKASI :**
 - **A. NAMA DAN NO TELP. SUMBER INFORMASI**
 - **B. LOKASI BENCANA DAN TINGKAT KERUSAKAN**
 - **C. PENYEBAB BENCANA**
 - **D. JUMLAH KORBAN**
- **2. INFORMASI SEGERA DISAMPAIKAN KE RESEPSIONIS / BAGIAN TELEKOMUNIKASI**
- **3. RESEPSIONIS / TELEKOMUNIKASI MELAPOR KEPADA DIREKTUR / KOMANDAN BENCANA / PEJABAT YANG DITUNJUK (DILUAR JAM KERJA)**
- **4. PEJABAT YANG BERWENANG MEMBERLAKUKAN RENCANA PENANGGULANGAN BENCANA (HOSPITAL DISASTER PLAN) SECARA PENUH ATAU SEBAGIAN, SESUAI SITUASI BENCANA**

Pemberlakuan HOSDIP

- Bila ada informasi tentang kemungkinan bencana, Komandan Bencana melakukan “Immediate Action” :
 - Kapasitas RS ditambah
 - Pengorganisasian area penerimaan pasien
 - Pengaturan transportasi
 - Arus informasi yang terorganisir
- Rumah Sakit dinyatakan dalam keadaan “Waspada” atau “Stand By”
- Keseluruhan aktivitas dikoordinasikan oleh Komandan Bencana (INCIDENT COMMANDER)

LOKASI DI RS YANG SEGERA DIAKTIFKAN :

- **Control Centre**
- **Triage**
- **Decontamination Area**
- **Red/Yellow Area**
- **Green Area**
- **Media/Press Area**
- **Relatives Waiting Area**
- **Discharged Casualties Area**
- **Volunteers Area**
- **Police Documentation**
- **Ambulance Liaison**
- **Off Duty Staff Assembly**
- **Paediatric Area**



PUSAT KOMANDO

- 1. **LOKASI.** TENTUKAN LOKASI POSKO SESUAI RENCANA
- 2. **ADMINISTRASI.** KEGIATAN PENGENDALIAN PENANGGULANGAN BENCANA TERPUSAT DI POKO

Emergency Patient Management:

- **1. Triage Officer.**
- **2. Triage location.**
- **3. First aid center.**
- **4. Assessment and transportation of injured persons.**

AKSES KE RUMAH SAKIT

**PENGENDALIAN YANG KETAT MENGENAI ARUS PASIEN
DAN PERSONEL LAIN.**

PINTU RUMAH SAKIT YANG DIBUKA HANYA :

- **PINTU MASUK UTAMA : UNTUK KELUARGA,
PENGUNJUNG,SUKARELAWAN DAN
STAF RS**
- **PINTU MASUK AMBULANCE : UNTUK SEMUA
KORBAN YANG MASUK KE RS**
- **PINTU KELUAR : UNTUK SEMUA ORANG YANG
KELUAR DARI RS**

Pengakhiran Rencana

- **Pernyataan pengakhiran dari Rencana dilakukan oleh CEO**
- **Setelah diakhiri, kegiatan RS kembali ke keadaan normal**
- **Ketua Tim Bencana (INCIDENT COMMANDER) mengadakan pertemuan dengan seluruh tim untuk mengadakan evaluasi guna perbaikan**

Incident Operation Plan

PERENCANAAN BENCANA INTERNAL

- **EVAKUASI PADA BENCANA INTERNAL**

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 “RENCANA BENCANA INTERNAL”.**
- 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**

- **RUJUKAN PASIEN & SUMBER DAYA**

- **KOORDINASIKAN DENGAN RS LAIN UNTK KEMUNGKINAN MERUJUK PASIEN,PERLU TAMBAHAN PERBEKALAN ATAU TAMBAHAN PERSONEL.**

- **RS RUJUKAN HARUS DIBERI INFORMASI JUMLAH PASIEN YANG DIRUJUK DAN CATATAN MEDISNYA.**

- **Inter-Hospital Transfers**

- **Policy: If, in the judgment of the physician or emergency physician, the patient cannot be adequately cared for at this hospital, the patient should be transferred to an appropriate private care facility.**

- **This applies to the following conditions:**

- Severely ill newborn.**

- Severe burn patients that require burn center.**

- Severe cardiovascular trauma requiring open heart pump and/or intra-aortic balloon.**

- Patients requiring kidney dialysis.**

- Intracranial injuries.**

- Condition where the specialty physician cannot be reached, i.e. pediatric emergencies, complicated orthopedics, etc.**

- **EVAKUASI RUMAH SAKIT**

- **AKTIFKAN TANDA BAHAYA.**
- **EVAKUASI SEMUA PASIEN MENJAUHI AREA YANG BERBAHAYA DENGAN CARA SISTEMATIS.**
- **BILA HARUS EVAKUASI SELURUH RS :**
 - . **SEMUA HARUS MELAPOR DITEMPAT PARKIR.**
 - . **SETIAP BAGIAN/DEPARTEMEN MELAKUKAN ABSENSI/APEL .**

- **HARUS DIINGAT :**
 - LAKUKAN DENGAN TENANG, SESUAI PROSEDUR DAN**
 - JANGAN PANIK !**



Geriatrics

Uninjured &
Volunteers
Gathering

OBS. DR. IVF.
Neonatal
Management

Surgery

Int. Med.

OPC

Others

ED



RENCANA UNTUK BENCANA EKSTERNAL

FIRST RECEIVING, LISTED AND SUPPORTING HOSPITALS

- **RS TERDAFTAR (Listed Hospitals) :**
SIAP MENERIMA PASIEN/KORBAN SELAMA 24 JAM
- **RS PENERIMA PERTAMA(First Receiving Hospital) :**
RS YANG TERDEKAT DENGAN KEJADIAN BENCANA
- **RS PENDUKUNG (Supporting Hospitals) :**
SEMUA RS YANG DAPAT MENDUKUNG RS PENERIMA PERTAMA :
 - **MENERIMA LIMPAHAN PASIEN DARI TEMPAT KEJADIAN**
 - **MENGIRIMKAN TIM LAPANGAN KETEMPAT KEJADIAN**
 - **MENERIMA RUJUKAN DARI RS PENERIMA PERTAMA**

TIM LAPANGAN

**RS HARUS MEMPERSIAPKAN TIM LAPANGAN
DALAM HAL :**

team composition (by speciality)

team commander

who can activate teams

medical equipment

protective clothing

communications

situation reports to the hospital

transport arrangements

roles & responsibilities of team members

briefing & debriefing arrangements

duties on return to hospital

- **Disaster Medical Assistance Teams
(DMAT)**

What Is A Disaster Medical Assistance Team (DMAT)?

- **DMAT ADALAH KELOMPOK PERSONIL PROFESIONAL MEDIS DAN PARAMEDIS, DIDUKUNG DENGAN UNSUR LOGISTIK DAN ADMINISTRASI YANG DIDISAIN UNTUK MEMBERIKAN PELAYANAN KESEHATAN PADA KONDISI BENCANA.**
- **DMAT DIDISAIN SEBAGAI UNSUR REAKSI CEPAT DALAM RANGKA MEMBANTU PELAYANAN KESEHATAN DILOKASI BENCANA**

Team composition and equipment

- DMATs are composed of physicians, nurse practitioners, physician assistants, nurses, pharmacists, respiratory therapists, paramedics, Emergency Medical Technicians, and a variety of other health and logistical personnel
- DMATs come equipped with **medical equipment and supplies, large tents, generators**, and other **support equipment (cache)** necessary to establish a Base of Operations, designed to be **self-sufficient for up to 72 hours**, in a disaster area.

DMAT Functions

- **Triage**
- **Medical Care**
- **Casualty Clearing /
Staging**
- **Patient Reception**



Team Make Up

- Team leader – 1 & 1 Deputy Team Leader
- Medical Officer (physicians) – 4
- Admin/Finance Chief – 1
- Logistics Chief – 1
- Communications – 2
- Pharmacists – 2
- Pharmacy Assist. – 2
- Supervisory Nurse – 2
- Staff Nurse – 6
- Physician Assistants – 2
- Paramedics / EMT's – 6
- Administrative Assistant – 1
- Equipment Specialist – 1
- Safety & Security Officer – 2
- Others as Determined by DMAT



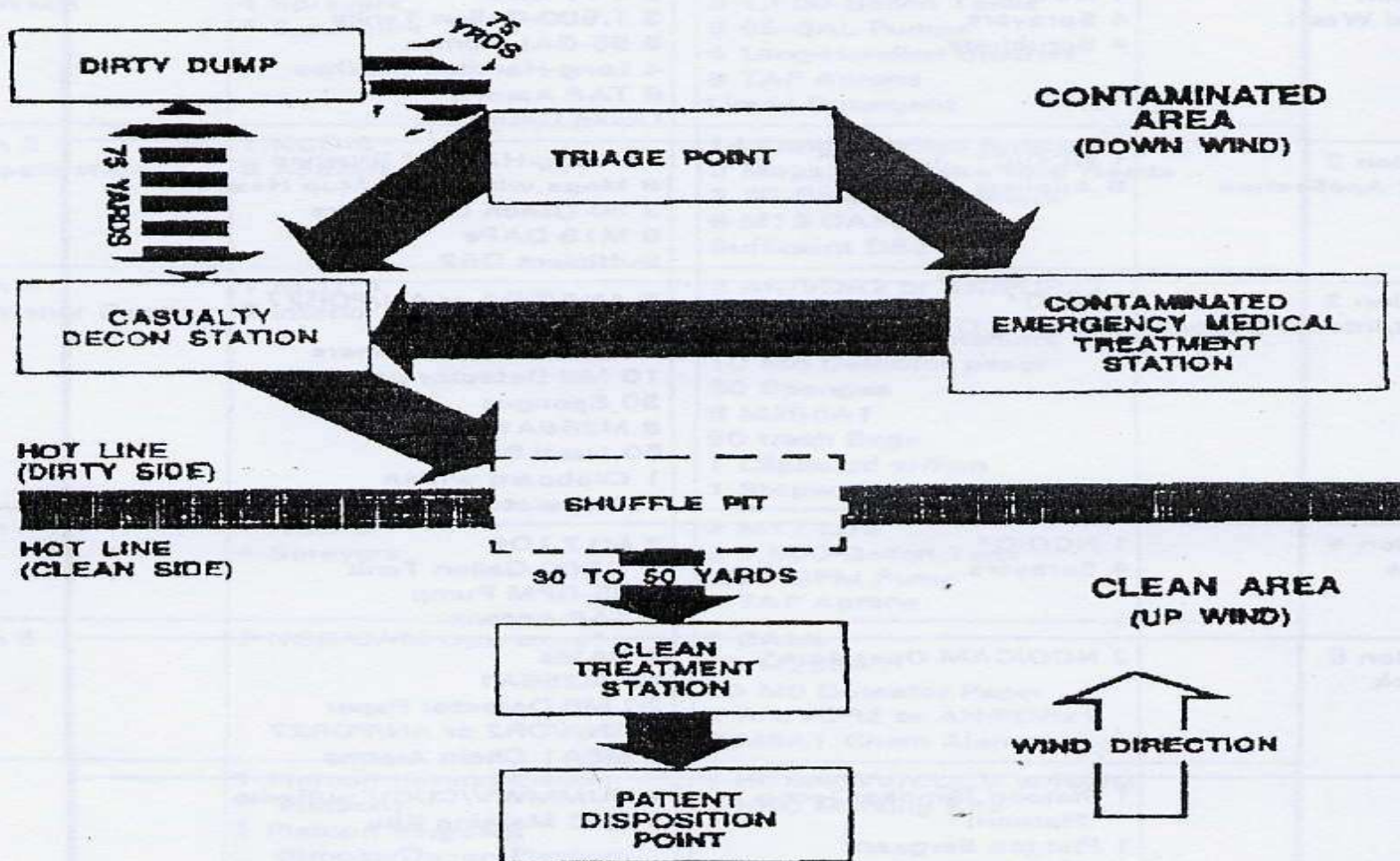
Decontamination Area

Decontamination Area

- The decontamination site has 3 zones:
 - ***hot zone*** – *incoming casualties*
 - ***warm zone*** – *decontamination area*
 - ***cold zone*** – *triage and transport*

Emergency Mass Casualty Decontamination Principles

- **In Warm Zone, Near Hot Zone**
- **Upwind, Upgrade**
- **Large Volume, Low Pressure Water**
- **Consider Runoff**
- **Shelter for Decontaminated Victims**
 - **Adverse Weather**
 - **Modesty - Media and Crowds**

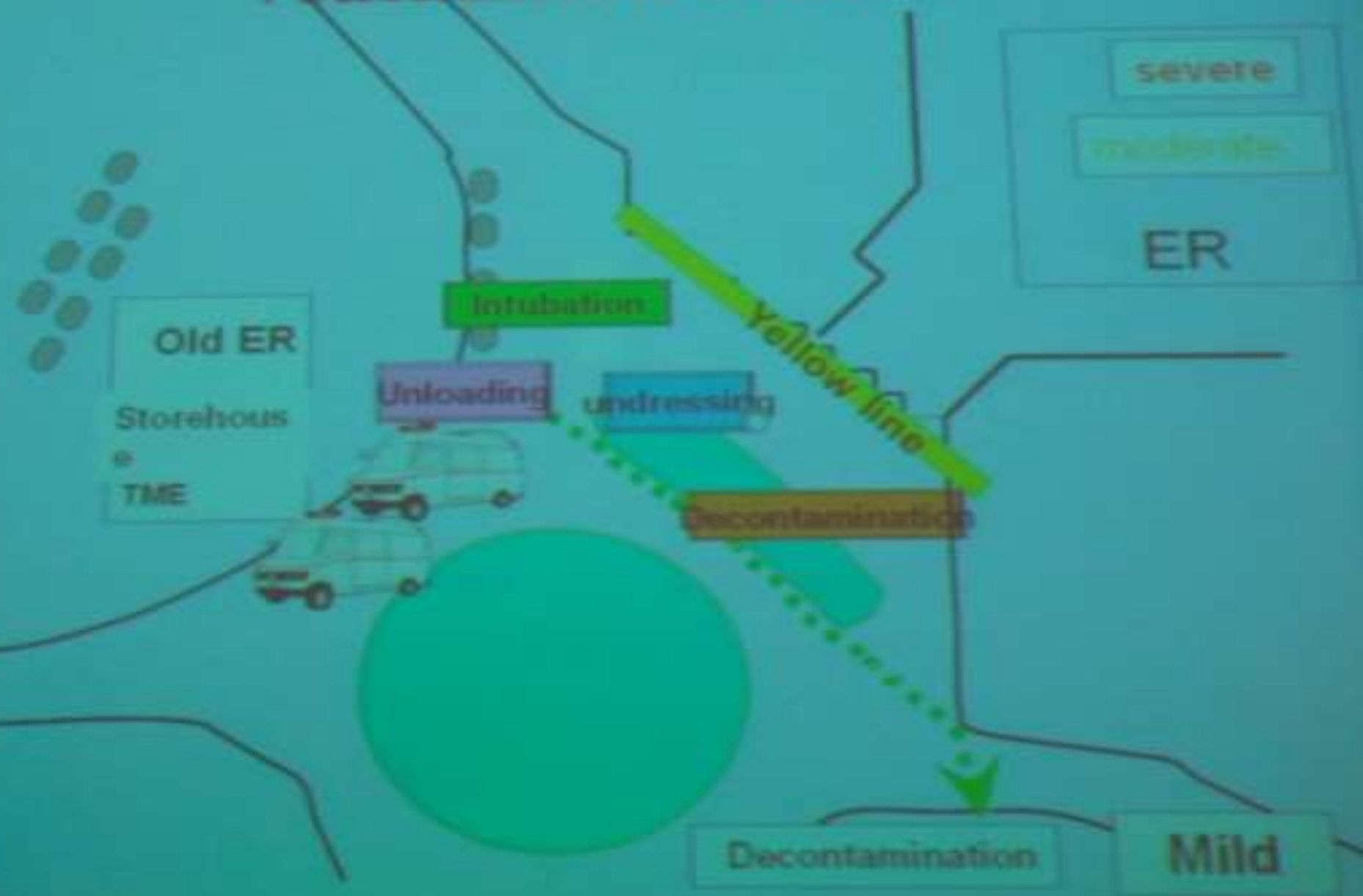


Emergency Mass Casualty Decontamination Procedures

- **Ambulatory Decon**
 - Communicate Directions
 - Arms Out, Legs Apart, Head Back
 - Top Down Wash
- **Non-ambulatory Decon**
 - Cut off Clothing
 - Use Stretcher Supports



Admission Sides





TERIMAKASIH