



Hospital Phase in Disaster Management

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GATOT SOEBROTO
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Four Phases of Disaster



Four Phases of Disaster

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Emergency Preparedness

Phase 1. Mitigation

Phase 2. Preparation

Disaster Management

Phase 3. Response →

Phase 4. Recovery

a. Prehospital and Inhospital Care :

- Decontaminate every patient
- Disaster triage scheme
- Effective surge capability
- Life-saving procedures
- Traffic control system
- Special needs patients

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Four Phases of Disaster

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Emergency Preparedness

Phase 1. Mitigation

Phase 2. Preparation

Disaster Management

Phase 3. Response →

Phase 4. Recovery

b. Pathophysiology & Patterns of Injury :

- All natural / terror disasters cause injury
- All blast injuries can cause major trauma, and burns
- Early ABCDE management
- All CBRNe agents require decontamination

ABCDE : airway, breathing, circulation, disability, environment

CBRNE : chemical, biological, radiological, nuclear, explosive & incendiary

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Disaster Management in Hospital

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Note :

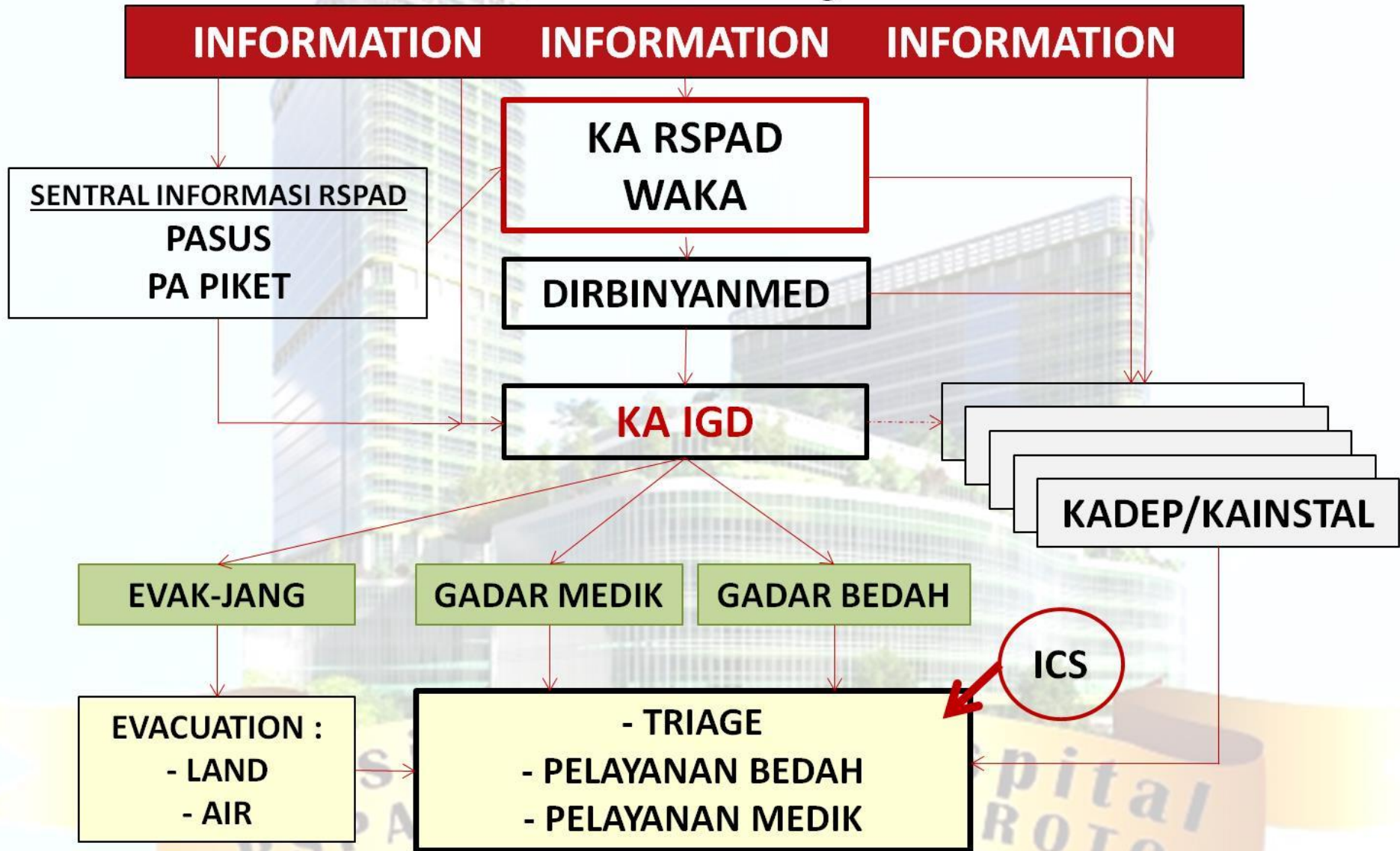
- Command system
- Evacuation principles / transportation of patient
- Management of disaster (internal or external)
- Triage and resuscitation
- MCI - MCE

MCI : multiple casualty incident

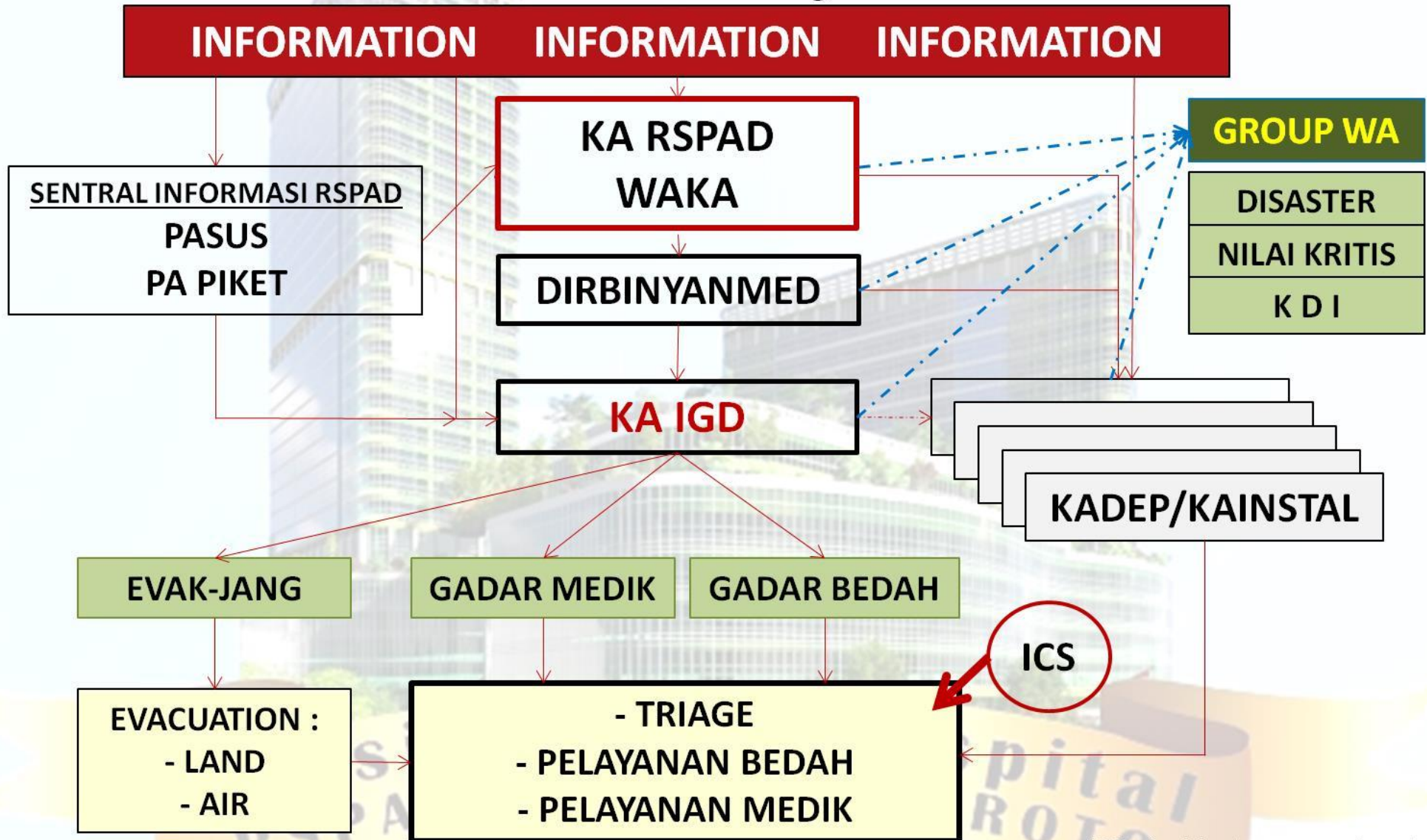
MCE : mass casualty event

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Command System



Command System



ICS : incident command system

KDI : kadep dan kainstansi

Incident Command System

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Role of ICS :

- Safety and security of health workers
- Communications and coordinations
- Hospital administration
- Nursing administration
- Human resources
- Health facility
(Special needs patients)
- Logistic :
 - pharmacy
 - nutrition
- Diagnostic :
 - radiology
 - laboratory
- Engineering and maintenance
- Security
- Laundry, cleaning, and waste management
- Traffic control system

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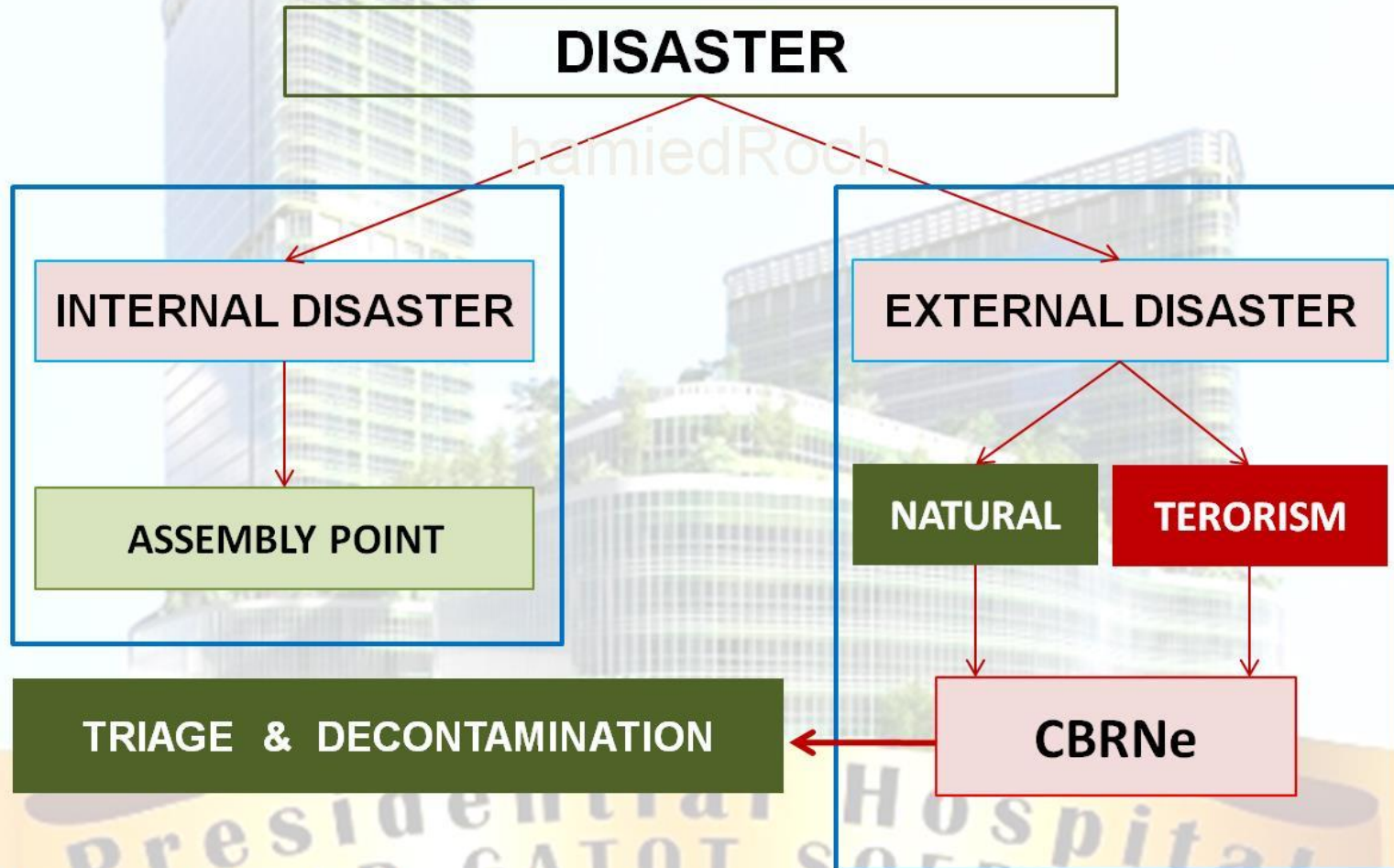
Principles of Transportation

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- Perform only essential procedures
- Establish direct communication between referring and receiving doctors
- Transport to closest, appropriate facility
- Use most appropriate mode of transport
- **Safety** and **security** of health workers

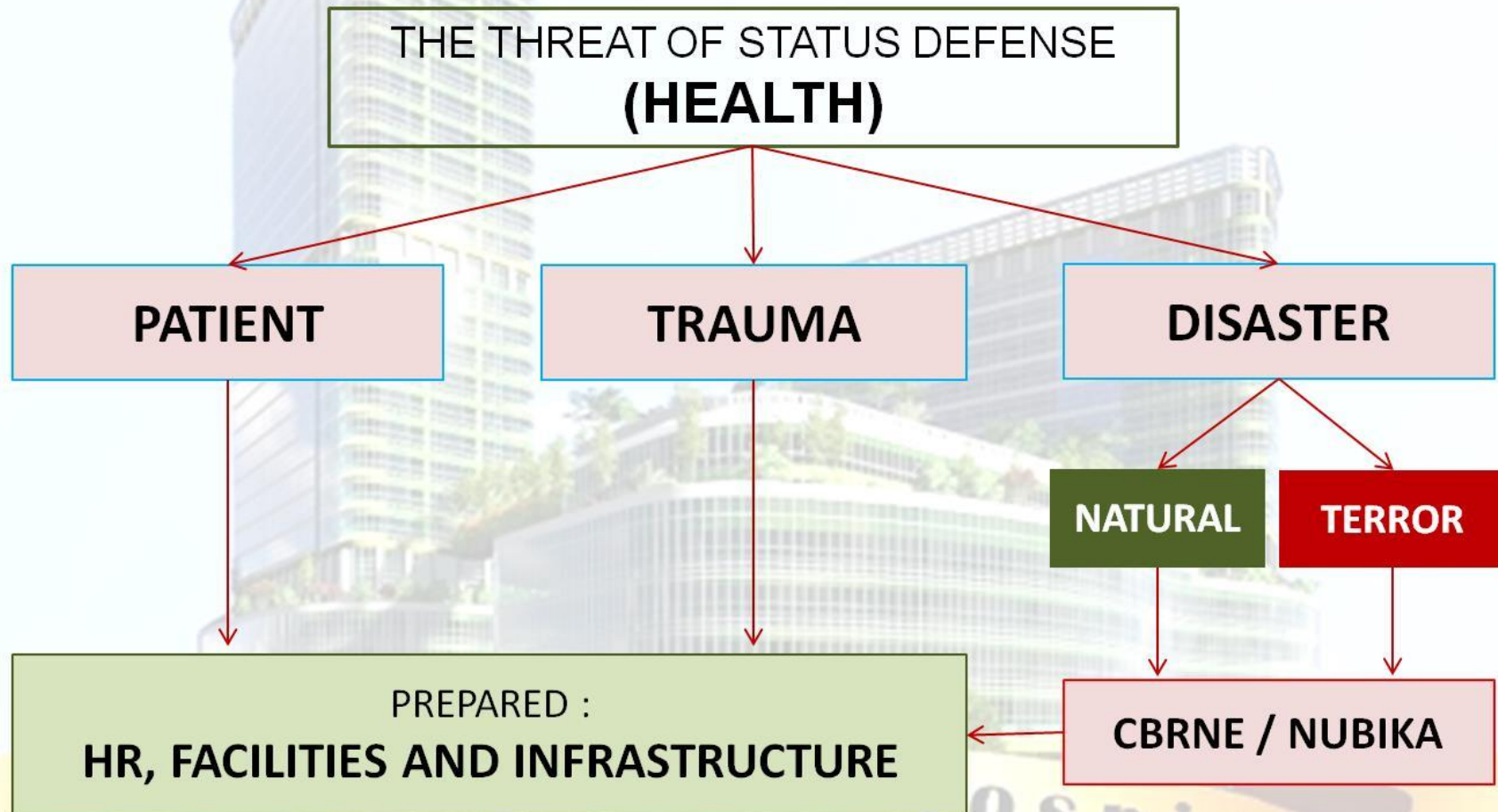
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Information about Disaster



CBRN : chemical, biological, radiological, nuclear

Military Health Responsibility



CBRNE : chemical, biological, radiological, nuclear, explosive & incendiary
NUBIKA : nuklir, biologi, kimia
HR : human resources

Disaster Management

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Concept :

- ABCDE approach to evaluation and treatment
- Treat greatest threat to life **first**
- All CBRN agents require decontamination
- Definitive diagnosis **not** immediately important
- Time is the essence
- Do no further harm
- **Safety and security** of health workers

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Standard Precautions



Cap Gown Gloves Mask Shoe covers
Protective eyewear / face shield

Disaster Management

DISASTER VICTIMS

CBRN

CHEMICAL

BIOLOGICAL

RADIATION

NUCLEAR

TRIAGE & DECONTAMINATION

WARD
(OBSERV. ROOM)

ISOLATION ROOM
(NEGATIVE PRESS)

ISOLATION ROOM
(DETECTION)

Decontamination Chamber

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Mobile Patient



Immobilisation Patient



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Surveymeter Detection



Radiation Exposure



Front View



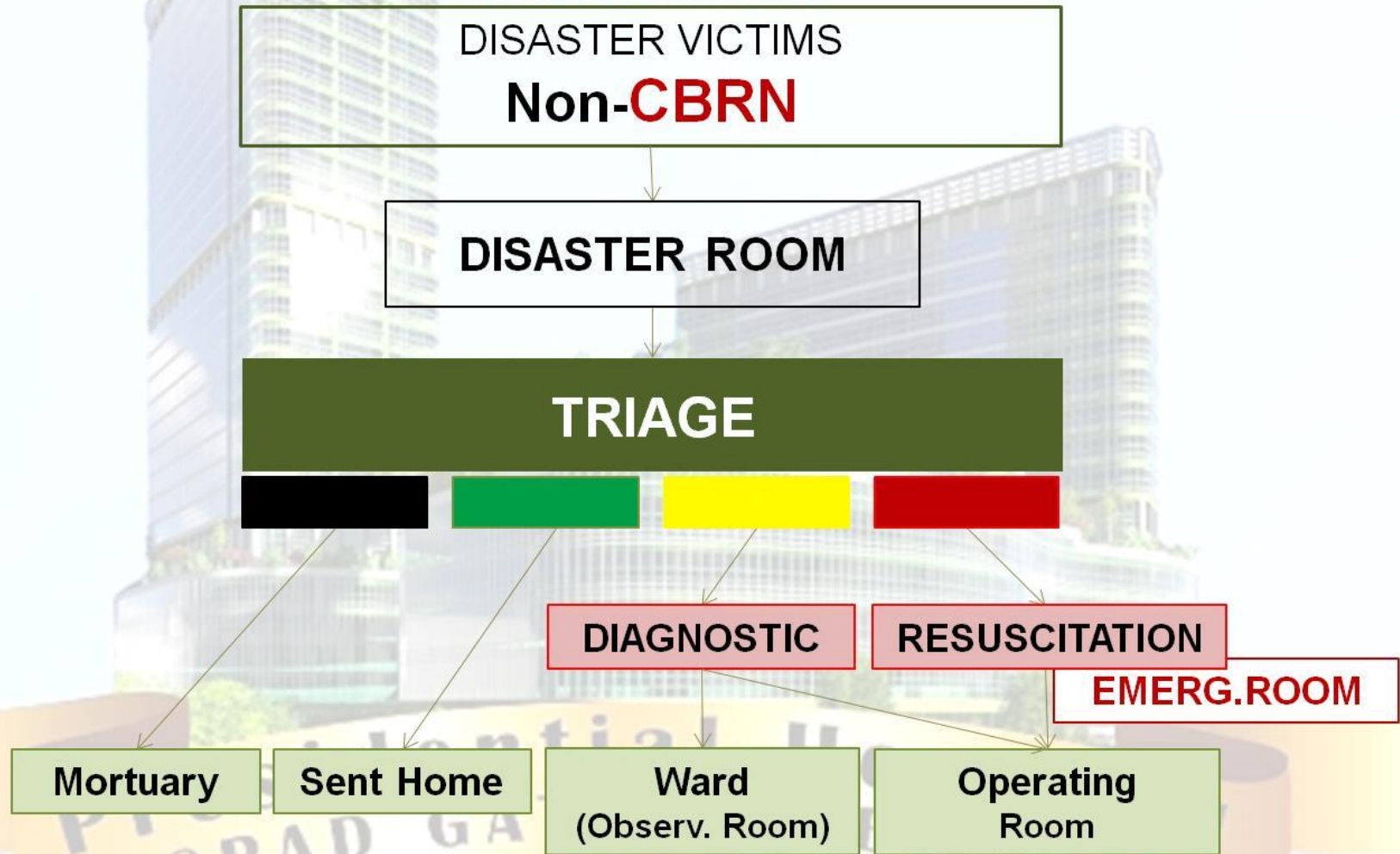
Back View

radiation sensor

Surveymeter :
radiation detection device

- Normal air radiation :
0.008 - 0.18 mR
- Radiation exposure :
 ≥ 1.4 mR

Disaster Management



Disaster Room

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AULA DISASTER



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Disaster Room

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Lobby of Emergency Room

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Emergency Room

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Triage

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- **Primary Survey :**
 - Airway with C-spine protection
 - Breathing and ventilation
 - Circulation with hemorrhage control
 - Disability : Neuro status
 - Exposure / Environmental control

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Triage

- **Secondary Survey :**

- History : AMPLE

- A- allergies

- M- medications

- P- past illnesses / pregnancy

- L- last meal

- E- events / environment / mechanism

- Physical examination : head to toe

- Complete neurologic exam

- Special diagnostic test

- Reevaluation

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Triage

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what's the problem

facial trauma

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Triage : Airway

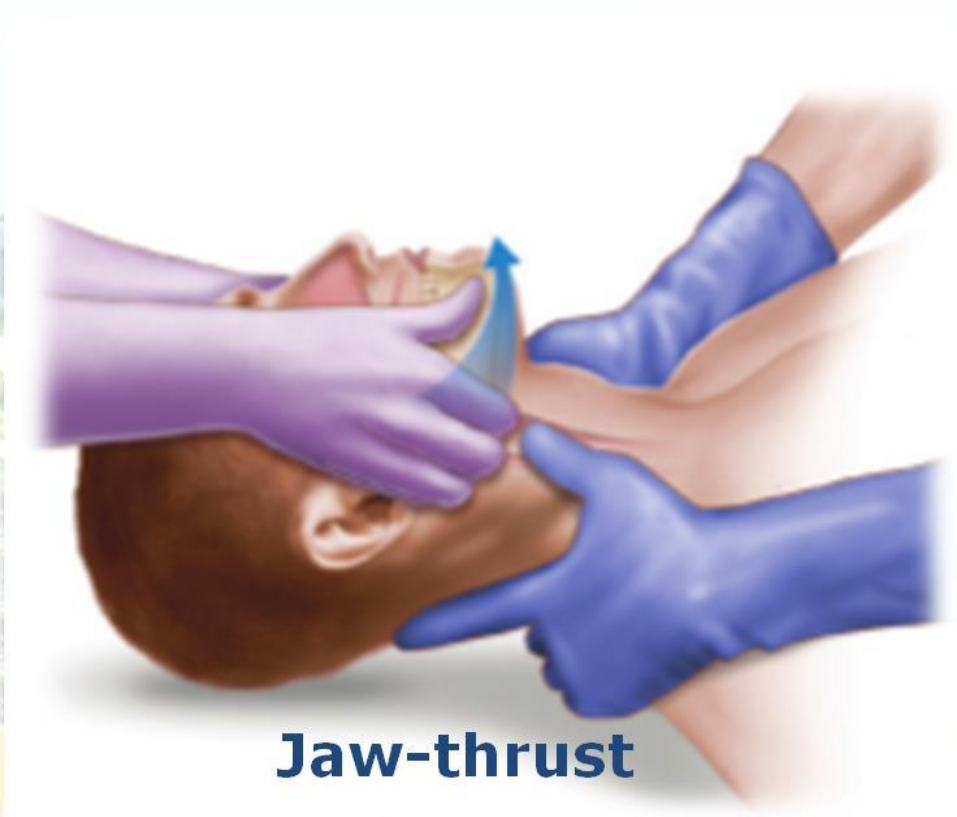
- Airway and C-spine protection
 - airway clear : can speak clearly
 - gargling : semirigid/rigid suction
 - snoring : evacuation of foreign body,
chin-lift / jaw-thrust / OPA
 - hoarseness : definitive airway
(intubation, surgical cricothyroidotomy,
tracheostomy)
 - total airway obstruction :
needle cricothyroidotomy-jet inslufasion

Basic Airway

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Chin-lift



Jaw-thrust

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Oxygenation

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- Adequate oxygenation
 - give O₂ 10-12 l/mnt, NRM
 - O₂ saturation : 95-100%

- dose of oxygen : $BW \times TV \times MV$
($BW \times 6-8cc \times 12-18x/mnt$)
($60 \times 7 \times 15 = 6,3 \text{ l/mnt}$)

to meet the need for O₂ saturation up to 100%,
needed of O₂ → $2 \times 6,3 = 12,6 \text{ l/mnt}$

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Triage

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gunshot wounds

stab wound

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Triage : Breathing

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- Breathing and Ventilation
 - assess and ensure adequate oxygenation and ventilation
 - Respiratory rate
 - Chest movement, pattern of injuries
 - Air entry
 - Oxygen saturation (SO_2 : 95-100%)
 - pneumothorax (needle decompression, chest tube)
 - haematothorax (chest tube, surgical stop bleeding)
 - pulmonary contusion and flail chest (ventilation)

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Triage

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what's the problem

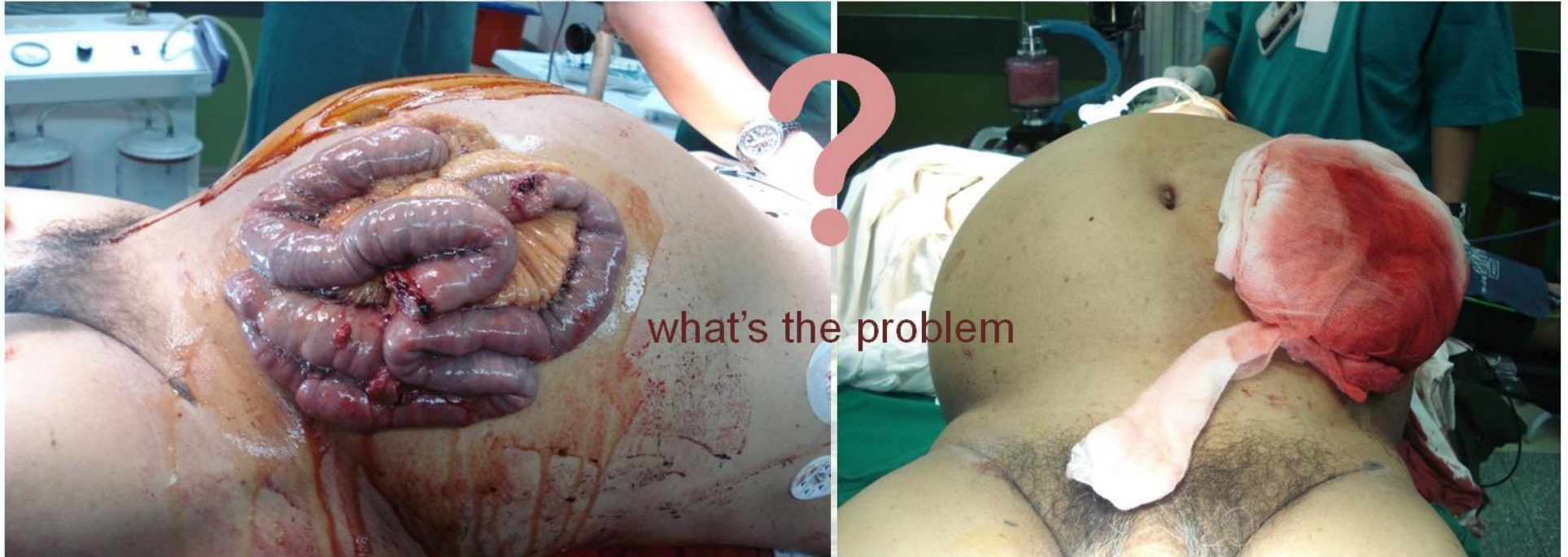
stab wound

pelvic fracture

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Triage

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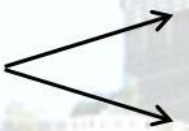
what's the problem

stab wound and ileum evisceration

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Triage : Circulation

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- Circulation with Hemorrhage control
 - external bleeding : stop bleeding (direct pressure)
 - internal bleeding 
 - stable hemodynamic
 - unstable hemodynamic
 - initial fluid resuscitation 1000-2000 ml,
warm kristaloid, 2 iv line, needle no 16 or 18
 - important : - **balanced resuscitation**
- **permissive hypotension**

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Triage : Circulation

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- Balanced resuscitation and permissive hypotension
 - accepting a lower-than-normal blood pressure
 - too much may be as bad as too little
 - transfusion : PRC, FFP, platelets
 - not a substitute for definitive surgical control of bleeding
 - hemodynamics is stable even though it has not returned to normal tension, but is sufficient for tissue perfusion (MAP > 65)

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Disability

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- Disability : neuro status
 - baseline neurologic evaluation
 - glasgow coma scale score
 - pupillary response

Exposure

- Exposure / Environmental control
 - completely undress the patient → missed injuries
 - prevent hypothermia

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An architectural rendering of the Presidential Hospital RSPAD Gatot Soebroto. The image shows a tall, modern skyscraper with a glass facade and a curved, multi-story building in the foreground. The text "THANK YOU" is overlaid in the center. At the bottom, a yellow ribbon banner contains the hospital's name.

THANK YOU

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