

**Forum Mutu Pelayanan Indonesia
2006**

Kuta, Bali, 19 – 21 Juli 2006

**Patient Safety Remains
Essential in Medical Care in
Hazard: Tetanus Surge and
Control in May 27, 2006
Bantul and Klaten Earthquake**

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The earthquake hazard on May 27, 2006 occurred in an area with dense population. The disaster resulted from the quake ruined hundreds of thousands houses of the population and killed and injured many. Many health care services were damaged, lightly, moderately or heavily, and many injured victims of the quake were brought directly to hospitals. Overwhelmed by the flood of injured victims many health care delivery institutions managed to guard patient safety. The typical injury from earthquake however resulted in infected wounds and deaths of tetanus. Control and protection against tetanus should be seen in the non-existence of surge of any tetanus occurrence.

Keywords: hazard, disaster, patient safety, tetanus.

Introduction

Understanding of Main Concepts used in this presentation

- **Hazard:** source of danger, extreme event, possible incurred loss or misfortune. Hazards, when experienced by a population CAN disrupt people's lives, cause harm to property, livelihood, and health. Examples: earthquake, flood, volcanic eruption, conflict.
- **Disaster:** any occurrences that causes damage, economic disruption, loss of human life, and deterioration in health and health services on a scale sufficient to warrant an extraordinary response from outside the affected area or community (WHO).



Disaster Preparation and Response in Jogja and Jawa Tengah Provinces



- Weeks of anticipation of Mt. Merapi eruption (Change of status from Alert to Danger on May 13, 2006). Hazard: Volcanic eruption.
- Evacuation of population from danger zone
- Provision of temporary shelters
- Anticipated main medical problem: Burn injuries
- Hazard that came to life on May 27, 2006: Earthquake
- Main medical problem: Trauma, wound and fracture injuries
- First Acute Medical Response: Triage, Life Saving, and wound and fracture treatment



The Differences between Java and Aceh Disasters

	Aceh	Yogya
Victims – death	120.000	3.923
- injured	4.632	151.225
Affected area	Wide	average
Structural function	Mostly collapse	Not collapse
Functional	Mostly collapse	mildly collapse
IDP's	184.000 stayed in barrack	2.111.872 Spread / host community
Contingency plan	Available, but for conflict	Available, although for volcanic eruption applied
Accessibility	Difficult	Not difficult
Security problem	Insecure	secure

PREPAREDNESS

RESPONSE

Rapid Assessment
Operational Plan

Contingency Plan

EMERGENCY

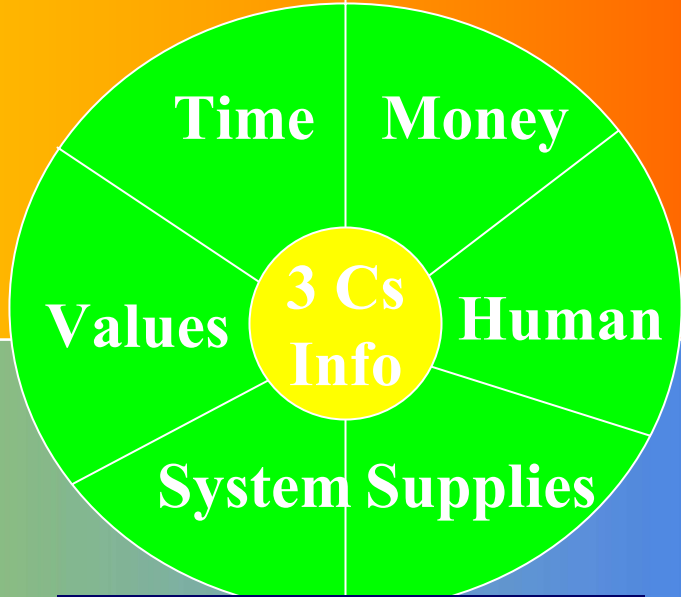
Early warning and Risk assessment

Review

Lessons learned

Preparedness Plan

Rehabilitation Plan



Management Wheel

Mitigation Plan

Re/Development Plan

Hazard evaluation

Disaster Management Plan

REHABILITATION

MITIGATION

VJ

The Basic Conceptual Framework



Tetanus

Tetanus is a condition characterized by the increased sensitivity to stimuli such as noise, touch and light, resulting in muscle contractions in the face, abdomen, back, and extremities. The condition may lead to death (around 45%).

Cause and risk factors:

- *Clostridium tetani sporae* enter a wound in the various unhygienic conditions.

Incubation period:

3 – 24 days

Treatment and care:

- Appropriate timing and dosage of: metronidazol, Anti Tetanus Serum, *anticonculsants* and wound *debridement*.

Specific protections:

- tetanus immunoglobulin, tetanus toxoid.

Objectives

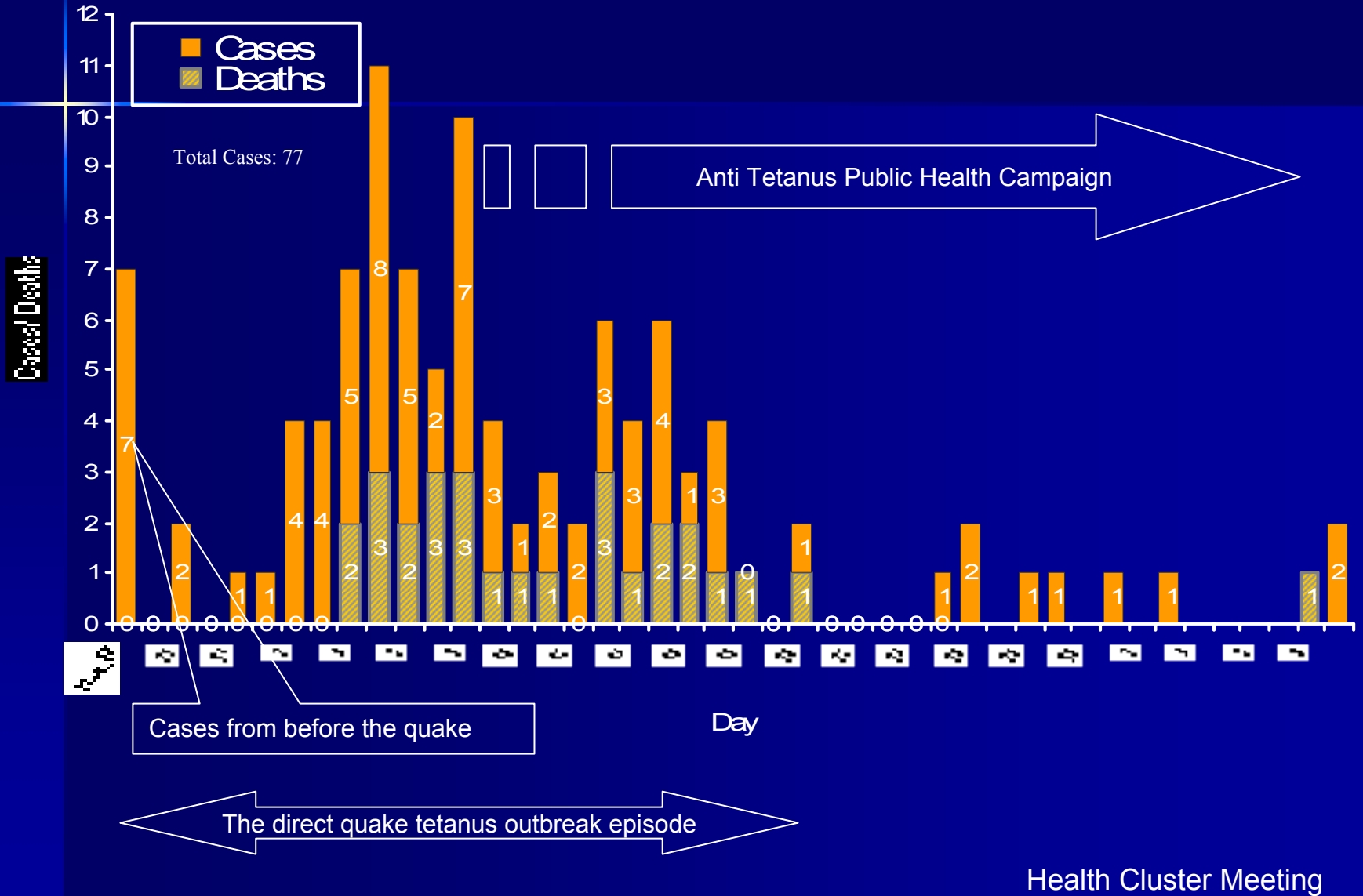
- To assess the magnitude of occurrence and tetanus cases due to the direct effects of the earthquake
- To identify the factors underlying the occurrence
- To propose the management aspects that may prevent any surge of tetanus cases in the health and medical care services

Methods and materials

- Tetanus cases related to the wound afflicted in the May 27, 2006 earthquake were reported.
- A survey in conjunction with a surveillance system was conducted in the hospital reporting the cases.
- Data included the gender, age, origin, recipient hospital, date of clinical manifestation, outcome of the disease, any treatment, prophylaxis and care.
- Field Epidemiology graduate students and their supervisors were dispatched with collaboration of the hospitals' personnel.
- Preliminary, descriptive analyses have been done, and further analyses are yet to conduct.

Results

Tetanus cases and deaths by date of admission and date of death in Jogjakarta from 27 May to 21 June 2005



Other results

- Case Fatality Rate: 36%
- Men > Women
- Men aged 50+

Lessons Learnt for Quality in Patient Safety

- Hazard: In Indonesia almost all kinds of hazards exist
- Disaster: A hazard may occur in a populated area and the livelihood and functions of the population are disrupted, and external help is needed.
- Epidemiology in Disasters
- Emergency
- Surveillance
- Standard Operating Procedure in all levels of prevention
- Management support and medical support
- Indicators of performance link to epidemiology of outcome of disasters.

Matang Suku Sma

