Developing Standardized Terms and Methods in Disaster Research: A First Step Towards Evidence-Based Disaster Medicine

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Number of Disasters Worldwide

- Disaster defined in the CRED database:
  - \( \geq 10 \) people killed
  - \( \geq 100 \) people affected
  - Declaration of State of Emergency
  - Call for international assistance
Most disaster research has been limited to narrative descriptions of the event

- Cause of the disaster
- Number of persons injured, killed, displaced
- Descriptions of interventions that were / were not applied
- After-action reports by responding agencies-
  - Many biased and self-serving;
  - Many are for organizational use only

Impediments in Disaster Research

1. Lack of uniformly accepted, standardized definitions
2. Lack of a conceptual framework to provide a structure
3. Lack of endorsed set of indicators for evaluation of specifics
4. No uniformly agreed upon operational or conceptual framework
Disaster Research/Evaluations

- Disaster planning/response ALWAYS involves multiple disciplines—MUST use same definitions
- Access to research/evaluations from other disciplines — understand what others are doing and how it applies to my work
Donated Medical Supplies to Bosnia

1) In accordance with WHO Guidelines, inappropriate for setting (2-3%)
2) Meds unsorted + required resources to sort + repack (28-36%)
3) Useless or unusable (20-25%)

50-60% of 34,000 tons = inappropriate
Value = $249,900,000 (not incl tax break)
Cost recipient country $34,000,000

Methods

- A focus group of international experts in health aspects of disaster management met at the Utstein Abbey in Stavanger, Norway
  - The Task Force for Quality Control of Disaster Management
- Initial consensus building for terminology and conceptual framework was born
Methods

- Terminology was piloted at several international meetings
- Feedback and areas of confusion were incorporated
Conceptual Framework: Language of Disaster

Hazard
Risk 1 ➔ Modification

Event
Risk 2 ➔ Absorbing Capacity

Damage
Risk 3 ➔ Buffering Capacity

Change in Function
Risk 4 ➔ Responses

Disaster

Characteristics of Events

- Onset
- Scope
Components of scope

- Amplitude: measure of power
  - Flood crest, storm surge height, Richter scale
- Intensity: amplitude/sample time
  - Rainfall/hour
- Scale: intensity in an area (intensity x area)
  - Incidence of disease in county, hectares flooded
- Magnitude: total energy of the event
  (scale x duration)

Operational Framework

- The first two portions of the operational framework deal with describing the:
  - Disaster
  - Society(s) affected by the disaster
- The disaster is described with **Longitudinal**
- The society is described with **Transectional**
Disaster A

Pre-event status tertiary care hosp
Earthquake
Tertiary care hosp collapse
40% HC provider loss, no OR, 50% in patient bed loss
Field hosp, volunteer HC providers recovery

Basic Societal Functions
- Public Health
- Medical Care
- Logistics and Transport
- Security
- Energy
- Water and sanitation
- Economy
- Education
- Public Works and Engineering
- Food and Nutrition
- Shelter and Clothing
- Communications
- Environmental Services
Subfunctions of Public Health

- Surveillance
  - Health and epidemiologic
  - Water and sanitation
  - Food and nutrition
  - Hazard
  - Environmental
- Epidemiologic and laboratory analysis
- Interventions

 Transectional “Snapshots”
Results

- This material has been taught at short courses at international meetings, with more short courses scheduled.
- A standard curriculum available with slides and small group exercises.
- The second volume of the Guidelines is in the final editing stage.
- The language and terminology is being incorporated into current World Health Organization meeting proceedings and peer reviewed literature.