



What to Teach in Emergency Management

Thoughts for Those New to the Discipline

June 1, 2020



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Welcome!

- Introduction of attendees
- Instructor's background
- Goals for the presentation
- Participation encouraged



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The Phases of Emergency Management

- Emergency management focuses on the **“four phases”** or the **“disaster life cycle.”**
 - Mitigation
 - Preparedness
 - Response
 - Recovery
 - See Neal’s article 1997
 - Prevention and protection – new phases?



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What is Emergency Management?

- **“Emergency management** is the discipline dealing with risk and risk avoidance” (Haddow and Bullock 2006).



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What is Emergency Management? (cont.)

- **“Emergency management** is the study of how humans and their institutions interact and cope with hazards, vulnerabilities, and resulting events (i.e., emergencies, disasters, catastrophes, and complex humanitarian crises), particularly through activities related to preparedness, response, recovery, and mitigation” (Jensen 2013).



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What is Emergency Management? (cont.)

- **“Emergency management** is the discipline and profession of applying science, technology, planning, and management to deal with extreme events that can injure or kill large numbers of people, do extensive damage to property, and disrupt community life” (Hoetmer 1991, xvii).



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Principles of Emergency Management

- **Definition:** Emergency Management is the managerial function charged with creating the framework within which communities reduce vulnerability to hazards and cope with disasters.



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Principles of Emergency Management (cont.)

- **Mission:** Emergency management protects communities by coordinating and integrating all activities necessary to build, sustain, and improve the capability to mitigate against, prepare for, respond to and recover from threatened or actual natural disasters, acts of terrorism, or other man-made disasters.



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Principles of Emergency Management (cont.)

- **Vision:** Emergency management seeks to promote safer, less vulnerable communities with the capacity to cope with hazards and disasters.



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Principles of Emergency Management (cont.)

- **8 Principles**
 - Comprehensive
 - Progressive
 - Risk-Driven
 - Integrated
 - Collaborative
 - Coordinated
 - Flexible
 - Professional



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Important Concepts

- **Hazard** – “natural phenomena that have the potential to cause fatal and costly damage, such as lightning, windstorms and floods” (FEMA 1997, 3).
- Characteristics (Burton, Kates and White 1993).
- Predominance of the concept?



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Important Concepts (cont.)

- **Risk** – “the probability of an event or condition occurring” (Mileti 1999, 106).
- Also related to the potential for loss.



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Important Concepts (cont.)

- **Vulnerability** - “the measure of the capacity to weather, resist, or recover from the impacts of a hazard in the long term as well as in the short term” (Mileti 1999, 106).



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Important Concepts (cont.)

- **Disaster** – “Accidental or uncontrollable events, actual or threatened, that are concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of a society, undergoes severe danger, and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented” (Fritz 1961, 655).



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Important Concepts (cont.)

- **Disaster** – “Deadly, destructive and disruptive events that occur when a hazard interacts (or multiple hazards interact) with human vulnerability” (McEntire 2007, 2).



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Important Concepts (cont.)

- Evolution of the term “Disaster”
 - An “evil star”
 - Acts of God
 - Natural hazards
 - Socially disruptive events
 - Socially constructed events
 - See Quarantelli (1998) and Perry and Quarantelli (2005)



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Important Concepts (cont.)

- Scale of events
 - Accidents
 - Crises
 - Emergencies
 - Disasters
 - Calamities and catastrophes



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History of Emergency Management

- Functions have always existed
- Government was not initially involved
- Piecemeal and reactive approach
- Disaster Relief Act and Civil Defense Act
- National Governors Association and FEMA
- Witt Revolution
- 9/11 and Hurricane Katrina
- See Rubin 2020 for a great review

- The impact of Covid-19?



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History of Emergency Management (cont.)

- Blanchard's Dirty Baker's Dozen (Blanchard)
- Historical Challenges Facing Emergency Management and Homeland Security (McEntire)
- What Keeps Me Up At Night (Natural Hazards Workshop)



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Resources

- Disaster Research Center
- Natural Hazards Center
- FEMA Higher Education Website/Learning Resource Center
 - Links
 - Courses
 - Books
 - Etc.



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Resources (cont.)

- Australian Journal of Emergency Management
- Disaster Prevention and Management
- Disasters
- International Journal of Mass Emergencies and Disasters
- Homeland Security Affairs
- International Journal of Disaster Resilience and the Built Environment
- Journal of Business Continuity and Emergency Planning
- Journal of Emergency Management
- Journal of Homeland Security and Emergency Management
- Natural Hazards Review
- International Journal of Emergency Management
- Journal of Contingencies and Crisis Management
- Risk, Hazards and Crisis in Public Policy
- Humanitarian Logistics and Supply Chain Management



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Schools of Thought

- Natural Hazards
 - American Hazardscapes (Cutter)
- Human Behavior
 - Human System Responses to Disaster (Drabek) and/or
 - The Human Side of Disaster (Drabek)
- Radical/Critical
 - At Risk (Wisner, Blaikie, Cannon and Davis)
 - Disaster Profiteers (Mutter)



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Schools of Thought (cont.)

- Crisis
 - Normal Accidents (Perrow)
- Administrative
 - Disaster Management in the US and Canada (Waugh and Sylves)
- Security
 - Terrorism and Homeland Security (Purpura)



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Foundational Works

- Catastrophe and Social Change (Prince)
- Man and Society in Disaster (Baker and Chapman)
- Organized Behavior in Disaster (Dynes)
- When Disaster Strikes (Quarantelli and Dynes)
- Human System Responses (Drabek)
- Facing Hazards and Disasters (National Research Council)
- Disasters: A Sociological Approach (Tierney)



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Foundational Works (cont.)

- The Environment as Hazard (Burton, Kates and White)
- Interpretations of Calamity (Hewitt)
- Normal Accidents (Perrow)



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Foundational Works (cont.)

- The Professional Emergency Manager (Drabek)
- Emergency Management: Principles and Practice for Local Government (Drabek and Hoetmer)
- Principles of Emergency Planning and Management (Alexander)
- Managing Disaster (Comfort)



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Foundational Works (cont.)

- Living with Hazards, Dealing with Disasters (Waugh)
- Introduction to Emergency Management (Haddow and Bullock)
- Handbook of Crisis and Emergency Management (Farazmand)
- Introduction to Emergency Management (Phillips, Neal and Webb)



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Foundational Works (cont.)

- Natural Hazard Mitigation (Godschalk et. al.)
- Mission Improbable (Clarke)
- Emergency Management: Concepts and Strategies for Effective Programs (Canton)



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Foundational Works (cont.)

- Disaster Response (Auf der Heide)
- Flirting With Disaster (Schneider)
- Managing Multi-organizational Responses (Drabek)



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Foundational Works (cont.)

- Anatomy of Disaster Relief (Kent)
- Disasters and Development (Cuny)
- Reflecting on the Weakness of the International Community During the IDNDR (McEntire)
- Introduction to International Disaster Management (Coppola)



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Foundational Works (cont.)

- Disasters by Design (Mileti)
- Facing the Unexpected (Tierney, Lindell and Perry)
- Cooperating with Nature (Burby)
- Paying the Price (Kunreuther)



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Foundational Works (cont.)

- Introduction to Emergency Management (Lindell, Prater and Perry)
- Hazard Mitigation and Preparedness (Schwab, Eschelbach and Brower)
- Emergency Planning (Perry and Lindell)
- Disaster Response and Recovery (McEntire)
- Technology and Emergency Management (Pine)
- Risk Assessment (Ostrom and Wilhelmson)



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Foundational Works (cont.)

- Community Recovery from a Major Natural Disaster (Rubin)
- Planning for Post-Disaster Recovery and Reconstruction (Schwab)
- Holistic Disaster Recovery (PERI)
- Disaster Recovery (Phillips)
- Managing for Long-Term Community Recovery in the Aftermath of Disaster (Alesch, Arendt and Holly)
- Healthy, Resilient and Sustainable Communities After Disasters (Institute of Medicine, National Academies)



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Foundational Works (cont.)

- Disaster Management Handbook (Pinkowski)
- Handbook of Disaster Research (Rodriguez, Quarantelli and Dynes)
- Emergency Management: Principles and Practices for Local Government (second edition) (Waugh and Tierney)
- Principles of Emergency Management (Fagel)
- Managing Emergencies and Crises (Kapucu and Ozerdem)



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Foundational Works (cont.)

- Introduction to Homeland Security (Bullock et. al.)
- Homeland Security (Sauter and Carafano)
- Homeland Security and Terrorism (Howard et. al.)
- Introduction to Homeland Security (McEntire)
- Threats to Homeland Security (Kilroy)
- Introduction to Homeland Security (Logan and Ramsay)
- Comparative Homeland Security (Morag)
- 9/11, the War on Terror, and the Sociology of Mass Media (Wild)



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Topical Studies

- Methods of Disaster Research (Stallings)
- Understanding Qualitative Research (Phillips)
- Cross-National and Comparative Disaster Research (Peacock)
- The Use of GIS in Disaster Research (Dash)



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Topical Studies (cont.)

- Disaster Politics and Policy (Sylves)
- After Disasters (Birkland)
- Politics of Disaster Relief (May)
- Disasters and Democracy (Platt)
- Disasters and the American State (Roberts)
- Night and Day (Olson, Olson, Gawronski)



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Topical Studies (cont.)

- Natural Hazards (Keller and Blodgett)
- Natural Disasters (Alexander)
- Environmental Hazards (Smith and Petley)
- Crucibles of Hazard (Mitchell)
- Natural Hazards Analysis (Pine)



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Topical Studies (cont.)

- Environmental Risks and Hazards (Cutter)
- The Angry Earth (Oliver Smith and Hoffman)
- Perceived Stakeholder Role Relationships and Adoption of Seismic Hazard Adjustments (Arlikatti, Lindell and Prater)
- Social Roots of Risk (Tierney)



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Topical Studies (cont.)

- Gender, Risk and Disaster (Fothergill)
- The Gendered Terrain of Disasters (Enarson and Morrow)
- Race, Ethnicity and Disasters in the United States (Fothergill, Maestas and Darlington)
- Social Vulnerability to Disasters (Phillips, Thomas, Fothergill, Blinn-Pike)



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Topical Studies (cont.)

- Disaster Insurance Protection (Kunreuther)
- By Design (Geis)
- Disaster Resilience (Patton and Johnson)
- Designing Resilience (Comfort, Boin and Demchak)



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Topical Studies (cont.)

- Conceptualizing and Measuring Disaster Preparedness (Gillespie and Streeter)
- Are Local Emergency Planning Committees Effective? (Lindell)



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Topical Studies (cont.)

- Response to Disaster (Fischer)
- Reconsidering Convergence and Converger Legitimacy in Response to the World Trade Center Disaster (Kendra and Wachtendorf)



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Topical Studies (cont.)

- Effective Emergency Management (Phillips and Neal)
- Creativity in Response to the World Trade Center (Kendra and Wachtendorf)



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Topical Studies (cont.)

- Long Term Recovery (Bates and Peacock)
- After the Oklahoma City Bombing (Wendell and Baker)
- Disasters as Agents of Change (Passarini and Mileti)



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Topical Studies (cont.)

- Local Emergency Management Organizations (McEntire)
- Businesses and Disasters (Webb and Tierney)
- Private Sector Responses (McEntire, Robinson and Weber)



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Topical Studies (cont.)

- Development in Disaster Prone Places (Lewis)
- Disaster and Development Research and Practice (Fordham)



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Topical Studies (cont.)

- Disasters, Environment and Development (Varley)
- Toward the Integration of Sustainable Development and Disasters (Mileti and Darlington)
- Can Sustainable Development Sustain Us? (Aguirre)



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Topical Studies (cont.)

- *Famine, Conflict and Response* (Cuny)
- *Mercy Under Fire* (Miner and Weiss)
- *Disasters without Borders* (Hannigan)



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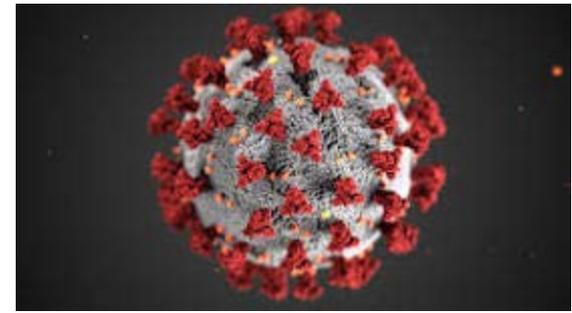
Topical Studies (cont.)

- When Technology Fails (Schlager and Petroski)
- Failed Technology: True Stories of Technological Disasters (Freiman and Schlager)
- Disasters of Technology (Sweeny)
- Problematical Aspects of the Information/Communication Revolution (Quarantelli)
- Inviting Disaster: Lessons from the Edge of Technology (Chiles)



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Topical Studies (cont.)



- Public Health Consequences of Natural Disasters (Noji)
- Public Health Management of Disasters (Young, Landesman and Burke)
- Disasters and Public Health (Clements and Casani)
- Public Health Humanitarian Responses to Natural Disasters (Ying Yang Chan)
- Case Studies in Public Health Preparedness and Response to Disasters (Landesman and Weisfuse)



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Topical Studies (cont.)

- The Environmental Disasters Will be More and Worse, but the Future is not Hopeless (Quarantelli)
- Worst Cases (Clarke)
- Climate Change and Natural Disasters (Thomas)
- When the Planet Rages (Officer and Page)
- Our Final Hour (Rees)
- The End (de Villiers)



Topical Studies (cont.)

- Disasters 2.0 (Crowe)
- Social Media in Disaster Response (Potts)
- Using Social Media in Disaster Recovery (Burton and Williams)
- Social Media in Disaster Response (Potts)
- Reporting Humanitarian Disasters in a Social Media Age (Cooper)
- Social Media, Crisis Communication and EM (White)



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Topical Studies (cont.)

- Humanitarian Logistics (Tatham and Christopher)
- Relief and Supply Chain Management for Disasters (Kovacs and Spens)
- Humanitarian Logistics (Tomasini and Wassenhove)
- Humanitarian Logistics (Cozzolino)
- Supply Chain Management in Humanitarian Relief Logistics (Rodman)



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Functional Studies

- Planning, Training and Exercises (Daines)
- Preparing Communities for Disasters (McEntire and Myers)
- Contingency Plan Exercises (Payne)
- Community Emergency Response Training (Simpson)
- Grant Administration in Emergency Management (McEntire)



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Functional Studies (cont.)

- Hazard Warning Systems (Sorensen)
- The Tornado Problem (Golden and Adams)
- Evacuation Behavior (Fischer)
- Patterns of Sheltering and Housing in US Disasters (Quarantelli)
- The Social Organization of Search and Rescue (Aguirre)



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Functional Studies (cont.)

- Triage: History and Horizons (Mayer)
- Theorizing Crisis Communication (Sellnow and Seeger)
- Coordination (Drabek)
- Critical Look at ICS (Buck et. al.)
- Current NIMS Implementation Behavior (Jensen)
- The Role of EOCs in Emergency Management (Scanlon)
- Principles of EM and EOC (Fagel)
- Disaster Operations and Decision Making (Huder)
- The Community Dispatch Center (McEntire and Gardner)
- Handling the Press (Payne)



Functional Studies (cont.)

- Local Mass Media Operations (Quarantelli)
- Coping with the Media (Scanlon)
- Not on the Record (Scanlon)
- Transportation Problems in Disasters (Scanlon)
- The Consequences of Unrequested Donations (Neal)



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Functional Studies (cont.)

- A Need to Help (Lowe and Fothergill)
- The Damage Assessment Process (Oaks)
- Damage Assessment After the Paso Robles Earthquake (McEntire and Cope)
- Debris Management in the 21st Century (Swan)
- Managing Debris Successfully after Disaster (McEntire)



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Functional Studies (cont.)

- Fatality Management in Mass Casualty Incidents (Hooft)
- Challenges in Mass Fatality Management (Sadiq and McEntire)
- “Unidentified Bodies and Mass Fatality Management in Haiti” (McEntire, Sadiq and Gupta)
- Dealing with Death (Scanlon)
- The Psychological Impact of Disasters and the Natural of Critical Incident Stress for Emergency Personnel (James)



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Important Cases

- Crisis Management I (Charles and Kim)
- Crisis Management II (Boin)
- Managing Crises (Howitt and Leonard)
- Disaster and Human History (Reilly)
- What Went Wrong? (Kletz)



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Important Cases (cont.)

- The Loma Prieta Earthquake (Bolin)
- Hurricane Andrew (Peacock, Morrow and Gladwin)
- Great Flood of 1993 (Chagnon)
- Northridge Earthquake (Bolin and Stanford)



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Important Cases (cont.)

- Beyond September 11th (Monday)
- Learning from Catastrophe (Natural Hazards Center)
- Disaster: Hurricane Katrina and the Failure of Homeland Security (Cooper and Block)



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Important Cases (cont.)

- Lower Manhattan Evacuation (Kendra and Lea)
- Looting (DRC)
- Recovery (Rozdilsky)
- Regional Coordination (Andrew and McGehee)
- Indian Ocean Tsunami (Arlikatti)



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Acceptance of Complexity

- The Next Catastrophe (Perrow)
- Disciplines, Disasters and Emergency Management (McEntire)



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Disaster Paradigms



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Natural Hazards

- Emerged with advances in science
- Focused on physical hazards



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Natural Hazards Strengths

- Natural hazards are common
- Relies on science
- Helps us to consider prevention



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Natural Hazard Weaknesses

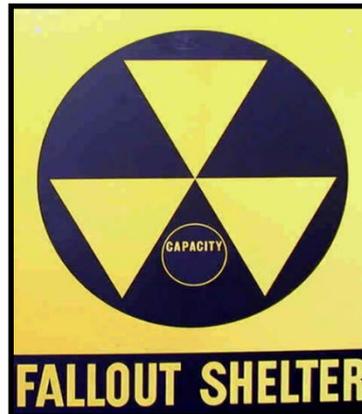
- Ignores other types of hazards
- Focuses mainly on land use, engineering and warning
- Limited to physical scientists and engineers



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Civil Defense

- Emerged during/at the end of WWII
- Concerned about a nuclear holocaust during the Cold War



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Civil Defense Strengths

- Nuclear war was a significant possibility
- A nuclear exchange would be devastating



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Civil Defense Weaknesses

- Ignores natural and other hazards
- Embraced predominantly by politicians and the military



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Industrial Hazards

- Emerged in the 1970s and 1980s due to events like Three Mile Island, Love Canal, Bhopal and Chernobyl



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Industrial Hazards Strengths

- Humans had not considered the dangers of nuclear energy, hazardous materials, and industrial processes
- Helped us to implement necessary policies and regulations



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Industrial Hazards Weaknesses

- Ignores other natural and civil hazards
- Related mainly to private industry (or government regulation over manufacturing)



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Comprehensive Emergency Management (CEM)

- Proposed by the National Governor's Association in 1979
- Noted the need for inclusive policies and procedures



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CEM Strengths

- Incorporated all hazards
- Integrated all phases
- Included all actors



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CEM Weaknesses

- Focused too heavily on natural hazards
- Provided a simplistic representation of phases
- Limited to first responders in practice
- Was still reactive in nature



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Social Vulnerability

- There is too much focus on hazards
- We need to address social issues specifically
- This includes poverty and politics



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Social Vulnerability Strengths

- Social issues had not been considered prior to this point
- Poverty and discrimination do produce vulnerability and disasters



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Social Vulnerability Weaknesses

- There are more variables at play than just social issues
- This school seems overly critical of democratic/capitalist countries (which often have the best emergency management programs in the world)



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Disaster Resistance

- Proposed by FEMA and Donald Geiss
- Adopted by FEMA as Project Impact
- Focused on mitigation



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Disaster Resistance Strengths

- Shift towards prevention
- Marketability of the “disaster resistant community”
- Involved the private sector



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Resistance Weaknesses

- Related to natural hazards only
- Applied to mitigation phase alone
- Limited to urban planners and engineers
- Neglected social causes of disaster
- Overlooked contributions of the social sciences



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Disaster Resilience

- Discussed by Mileti, Buckle and Paton
- Emerged as a reaction against disaster resistance and other paradigms
- Recognized the social dimensions of disaster



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Disaster Resilience Strengths

- Does not assume that prevention is always possible
- Captures social, economic and psychological variables
- Is related to disciplines other than the physical sciences and engineering



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Resilience Weaknesses

- Exclusive focus on natural hazards?
- Relevant mainly to the recovery phase
- Constrained to certain actors
- Overlooks physical variables?
- Discredits value of hard sciences and engineering?



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Sustainability/Sustainable Hazards Mitigation

- Evolved from the environmental movement
- Adapted by Mileti, Berke, McAllister, etc.
- Underscored unique relation of disasters, development and environment



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Sustainability Strengths

- Denotes importance of process (i.e. social construction) of disasters and prevention
- Adds to the understanding of the relationship between disasters, development and environment
- Provides a larger picture of the disaster problem than has been offered



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Sustainability Weaknesses

- Discusses natural hazards mainly
- Overlooks preparedness and response phases
- Includes mainly environmentalists, economists and urban planners
- Fails to address or recognize certain variables (e.g. psychological, warning, etc.)
- Does not fully embrace all disciplines



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Homeland Security

- Appeared in the 1990s and gained significant momentum after 9/11



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Homeland Security Strengths

- Recognized the actual and potential impact of terrorism
- Re-ignited involvement with private sector and focus on infrastructure



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Homeland Security Weaknesses

- Focused almost exclusively on terrorism
- Ignored prior disaster research (e.g., warnings)
- Applicable mainly to government and the military
- Overwhelmed emergency managers



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Whole Community

- We are not engaging the everyone in emergency management
- We need to pay specific attention to the most vulnerable such as the poor, minorities, and the disabled



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Whole Community Strengths

- There are more groups and individuals involved in disasters than just the public sector emergency manager
- The vulnerable need extra attention, help and support
- We need to consider cultural values and priorities of others



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Whole Community Weaknesses

- This perspective seems to downplay hazards
- The relation to disaster phases is implied and not direct
- It may not tell how we need to resolve vulnerability



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Which One is Right?

- “We must modernize the emergency management house, but save the foundation”
 - Claire Rubin (2000)



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Reiterating the Importance of CEM

- There are many types of disaster agents (natural, technological, civil, etc.)
- Preparedness and response will always be needed, but we must be more proactive
- No individual or group can resolve the disaster problem alone



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Underscoring the Importance of Vulnerability

- Is related to each type of hazard
- Is applicable to all phases
- Is relevant to all the actors involved in disasters
- Is produced through the interaction of many variables
- Is discussed by numerous disciplines



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The Need for a Holistic Approach

- Must be built on the strengths (and overcome the weaknesses) of the CEM, resistance, resilience, and sustainability concepts, etc.
- Must directly and explicitly make vulnerability the foundation of the field in order to reduce disaster



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What is Invulnerable Development?

- “Invulnerable development is defined as development that addresses vulnerability.”



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What is Invulnerable Development?

(cont.)

- The term “invulnerable” suggests efforts to reduce liabilities from the physical and social arenas.
- The term “development” conjures up the building of physical infrastructure/edifices, as well as the strengthening of social/organizational capacity, in such a way as to reduce the probability and severity of disasters, and enhance the ability to more effectively withstand, respond to and recover from their detrimental impacts.



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What is Invulnerable Development? (cont.)

- Invulnerable development accordingly conjures up decisions and activities that are *intentionally designed and implemented to reduce risk and susceptibility, and raise resistance and resilience to disaster.*



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Examples of Invulnerable Development

- Physical development (of buildings and infrastructure) that takes hazards into account
- Social development that addresses the needs of special populations
- Cultural development that shapes people's attitudes about disasters
- Economic development that increases wealth, decreases poverty, and is interested in safety



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Examples of Invulnerable Development (cont.)

- Technological development that does not increase risk but may provide tools for decision makers in emergency management
- Individual and community development that encourages responsibility, self-reliance, and independence
- Organizational development that strengthens all types of emergency management institutions (regardless of whether they are in the public, private or non-profit sectors)



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Invulnerable Development Strengths

- Takes into consideration all hazards
- Integrates the four phases of disaster
- Includes the public, private and non-profit sectors as well as the public at large
- Recognizes the multi-causality of disaster
- Is interdisciplinary in nature
- Gives direction to focus our collaborative efforts



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Invulnerable Development Weaknesses

- Nothing is “invulnerable”
- Could Comprehensive Vulnerability Management be considered as a paradigm instead?



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Comprehensive Vulnerability Management as a Paradigm?

- Identify liabilities and capabilities
- Reduce risk and susceptibility
- Raise resistance and resilience



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Responding to Ebola in Dallas, Texas



The Need for Accurate Assumptions and Spontaneous Planning

Preview

- Preliminary comments and methods
- Background on Ebola
- Victims and timeline of events
- Primary responding agencies
- False assumptions and major challenges
- Lessons and implications for response
- Examples from California and Texas



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Preliminary Comments and Methods

- Study undertaken by UNT and UVU
- Qualitative research
 - Newspaper articles
 - After action reports
 - Interviews with key participants
 - Surveys
- Presentation from an Emergency Management (not Public Health) perspective



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What is Ebola?

- Previously known as Ebola hemorrhagic fever
- Is a rare and deadly disease caused by infection from Ebola virus strains (i.e., family Filoviridae, genus Ebolavirus)
- Can cause disease in humans and nonhuman primates (e.g., monkeys, chimpanzees and gorillas)



Five Ebola Virus Species



Four are known to cause disease in humans:

1. Ebola virus (Zaire ebolavirus)
2. Sudan virus (Sudan ebolavirus)
3. Tai Forest virus (Tai Forest ebolavirus)
4. Bundibugyo virus (Bundibugyo ebolavirus)

Another results in disease in nonhuman primates:

1. Reston virus (Reston ebolavirus)

Retrieved From CDC 2015 at: <http://www.cdc.gov/vhf/ebola/>



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Symptoms of Ebola

- Symptoms may appear anywhere from 2 to 21 days after exposure, but the average is between 8 to 10 days.

Fever
Muscle pain
Fatigue
Vomiting
Hemorrhaging

Severe headache
Weakness
Diarrhea
Abdominal pain



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Retrieved From CDC 2015 at: <http://www.cdc.gov/vhf/ebola/>

What Were the Impacts?

Individual	Economic	Societal
Isolation	Special equipment/ training (e.g., PPE)	Alleged discrimination
Altered daily activities	Cost of responding to an unknown threat	Marginalization of certain populations
Loss of income	Legal liability	NIMBY
Death	Impact on medical industry	Distrust in government

“They were treated like they were . . . lepers.
Everyone stared at them like they had Ebola.”

– K. Oden, Dallas OEM



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Why Should We Care?

- Any epidemic or pandemic could severely challenge society.
- Ebola has a high mortality rate (as high as 70%).
- Ebola presents unique problems for emergency managers, public health and medical officials, and public administrators.
- Costs associated with treatment/response are high.
- Attention may reduce risk and myths.
- A wide scale outbreak will prove overwhelming.
- Making this a priority can save lives!



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Ebola Timeline

Dec. 28, 2013	2 year old child dies in Guinea.
Mar. 22, 2014	Guinea confirms 59 deaths.
Mar. 28, 2014	Two Ebola cases reported in Liberia.
Sept. 26, 2014	WHO puts death toll at 3,091
Oct. 09, 2014	WHO sets fatality rate at 70%.

Sept. 2014 Thomas Duncan is infected.



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Thomas Eric Duncan



Sept. 19, 2014

Thomas Duncan travels to the USA.

Sept. 24, 2014

Duncan runs a fever.

Sept. 25, 2014

He goes to hospital but is sent home.

Sept. 28, 2014

Duncan returns by ambulance and is isolated.

Sept. 30, 2014

Tests confirms Ebola.

Oct. 08, 2014

Thomas Duncan dies.



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Nina Pham



- **Oct. 10, 2014** Develops fever and is isolated.
- **Oct. 12, 2014** Officials announce Pham's illness which as the first case of U.S. transmission.
- **Oct. 24, 2104** Declared Ebola free.
- **Oct. 31, 2014** Last day for those who came in contact with Pham to be monitored.



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Amber Vinson



- **Oct. 08, 2014**
 - **Oct. 13, 2014**
 - **Oct. 14, 2014**
 - **Oct. 15, 2014**
 - **Oct. 22, 2014**
- Travels to Ohio.
Returns to Dallas.
Reports to hospital with fever.
Tested positive for Ebola.
Declared Ebola free.



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Primary Responding Agencies

Local	County	Regional	State	Federal	Other
Mayor	Judge	EM	Governor	White House	Presbyterian
Fire/EMS	EM	PH	EM	CDC	Contractors
Police			SHHS	DOT	
PIO			DOT		
			Texas A&M		



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False Assumptions

- The federal government stated that the disease would not arrive in the United States.
- “Communicable diseases do not stop at borders” (Riddell 2014 citing Rep. Edward Royce, Chairman of House Committee on Foreign Relations).



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False Assumptions (cont.)

- “Disease containment . . . is something we do every day” (Garrett 2014 citing Janek, THHS Executive Commissioner).
- “The virus does not spread through the air – only through close contact with bodily fluids from a sick person” (Marchione 2014 paraphrasing Thomas Frieden, CDC Director).
- “If a symptomatic patient with Ebola coughs or sneezes on someone, the saliva or mucus come into contact with that person’s eyes, nose or mouth, [and] these fluids may transmit the disease” (Jacque Vilet 2014 citing CDC website).



False Assumptions (cont.)

- “We know how to deal with Ebola” (Riddell 2014 citing Scott Ries, Christian Medical and Dental Associations).
- “Unfortunately, in our initial treatment of Mr. Duncan, despite our best intentions and a highly skilled medical team, we made mistakes. We did not correctly diagnose his symptoms as those of Ebola. We are deeply sorry” (Levey 2014 citing Dr. Daniel Varga, Chief Clinical Officer with Texas Health Resources).



False Assumptions (cont.)

- The White House and CDC stated that the nation is prepared to deal with Ebola.
- “DHS may not be able to provide sufficient . . . preparedness supplies to its employees to continue operations during a pandemic” (Riddell 2014).



False Assumptions (cont.)

- “Edward Goodman, the infectious disease expert at the Dallas hospital, offered assurances that the hospital has robust facilities and protocols to handle Ebola” (Schneider 2014).
- “We had a medical protocols problem or a PPE problem” (Clay Jenkins, Dallas County Judge).



False Assumptions (cont.)

- “Clearly there was a breach in protocol”
Gillman 2014 citing Thomas Friedman, CDC Director).
- “The hospital worker . . . wore protective gear while treating the Liberian patient. . . . The worker wore a gown, gloves, mask and shield while she cared for Duncan”
(Merchant 2014).



False Assumptions (cont.)

- “The man remains in strict isolation at the Dallas hospital, which officials said is equipped to contain and care for infectious diseases” (Schneider 2014 paraphrasing David Lakey, Texas Health Services Commissioner).
- “The nation’s hospitals may be unprepared to deal with the waste caused by Ebola patients” (Riddell 2014).
- “We have a long way to go – we are nowhere near ready yet” (Riddell 2014 citing Dr. Macgregor-Skinner).



Major Issues and Concerns



- Hubris and insufficient knowledge
- EM and public health disconnect



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Major Issues and Concerns (cont.)

- Mixed messages
- Politics



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Major Issues and Concerns (cont.)



- Decision making
- Privacy, control orders and voluntary quarantines



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Major Issues and Concerns (cont.)

- Decontamination, debris and waste
- Caring for Bentley



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Major Issues and Concerns (cont.)



- Expense
- Scope



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Lessons and Implications

- “Personnel involved in the response to the Ebola event in North Central Texas showed an immeasurable commitment to public safety in spite of challenge media, political, and interpersonal scrutiny” (After Action Report).



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Lessons and Implications (cont.)

- “Inconsistent and/or changing guidelines and directives continued to be a challenge in response operations throughout the event” (After Action Report).



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Lessons and Implications (cont.)

- “Agencies should provide guidance to prepare for future events including standards of training, communication and coordination” (After Action Report).



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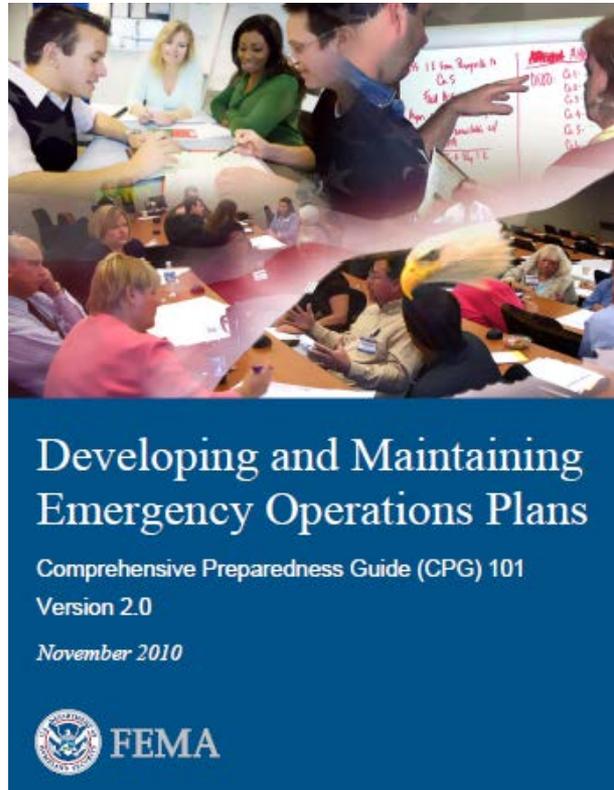
Lessons and Implications (cont.)

- Existing plans were inadequate.
- There was poor information gathering, insufficient adaptation, and incomplete coordination.
- The need for spontaneous planning.



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Planning



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Planning Defined

- “Preparing before the event” (Perry and Lindell 2007, 8).
- Exploring “how organizations will deal with uncertainties in the future” (Kartez and Lindell 1987, 487).
- Developing “strategies and procedures covering a range of disaster events” (Phillips, Neal and Webb 2012, 484).



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Principles of Planning

- Plans must:
 - Be comprehensive
 - Be based on actual behavior
 - Assign responsibility
 - Facilitate coordination
 - Avoid common pitfalls (paper plan)
 - Be updated frequently



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Planning Challenges

- We still don't know enough about planning
- Planning may be inadequate
- Planning is different than managing



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Improvisation



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Improvisation Defined

- A combination of intuition, creativity and bricolage (Layborne and Sadler-Smith 2006).
- “Adaptation to the unique circumstances of an unfolding situation” (McEntire 2007, 431).
- “Unscripted activities, improvised behaviors, and emergent organizational structures” (Webb and Chevreau 2006, 67).



Principles of Improvisation

- It is impossible to plan for everything
- Relying on plans can be detrimental
- Improvisation allows flexibility to deal with unfolding needs



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Improvisation Challenges

- Is it divorced from prior plans?
- Have we misread environmental cues?
- Is our intuition correct?
- Were the implications of our decisions vetted sufficiently?



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Is the Dichotomy too Simple?

- “A significant hypothesis of this research states that *managers respond to crisis challenges either rapidly by relying upon familiar norms or templates or with creative and flexible improvisation*” (Rouz Duffort and Vidaillet 2003).



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Is the Dichotomy too Simple? (cont.)

- *“Without improvisation, emergency management loses flexibility in the face of changing conditions. Without preparedness, emergency management loses clarity and efficiency in meeting essential disaster demands” (Kreps 1991).*



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Is the Dichotomy too Simple? (cont.)

- Alterman (1995) admits that planning may occur before a disaster, but he is also careful to acknowledge that *planning will occur during and after a disaster as well.*



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Is the Dichotomy too Simple? (cont.)

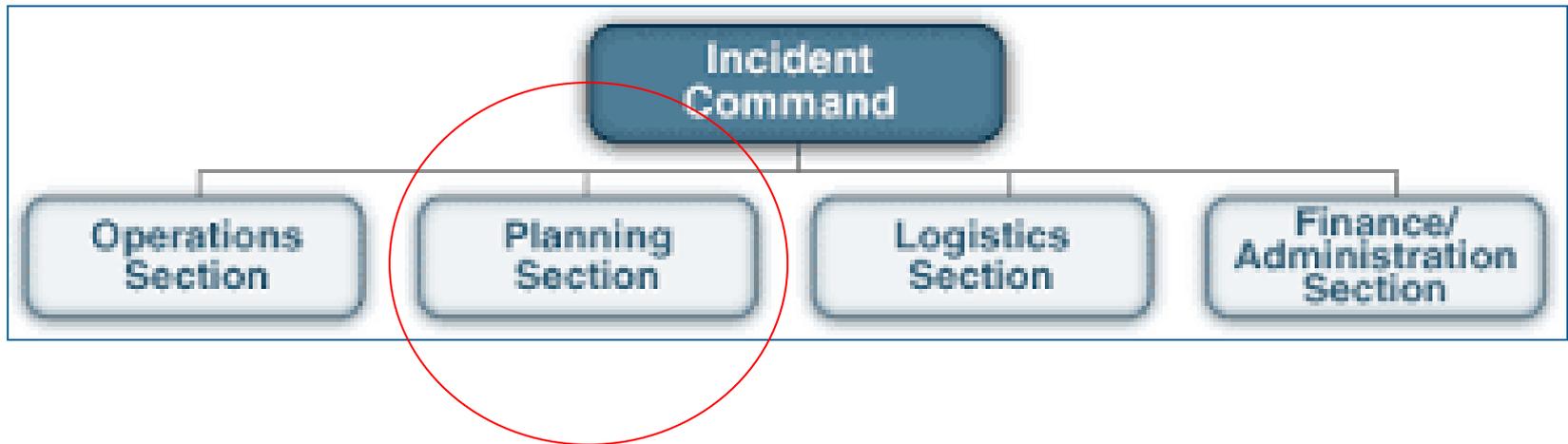
- Mendonca (2005) asserts that *emergency managers must recognize that pre-planned operations do not apply to the situation and that organizations must seek the “real-time development and deployment of new procedures.”*



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Is the Dichotomy too Simple? (cont.)

- NIMS and ICS advocate planning in disaster response operations



Spontaneous Planning

- A “semi-formal process of evaluating existing and unfolding problems as well as determining potential solutions and required emergency management actions” (McEntire et. al. 2013, 3).



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Spontaneous Planning (cont.)

- “Planning that occurs during and after the disaster, but is not equivalent to planning or emergent improvisation.”
- “It is a decision making endeavor undertaken to identify available options and specify additional or novel tactical guidelines based on situational awareness and the acquisition of context-specific knowledge.”
- “Spontaneous planning is detailed planning in the aftermath of a disaster to inform and shape improvised response behavior.”



Example of Planning



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Example of Spontaneous Planning



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Spontaneous Planning in EM



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Example from San Bruno



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Example from San Bruno (cont.)



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Example from San Bruno (cont.)



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Example from San Bruno (cont.)



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Example from San Bruno (cont.)



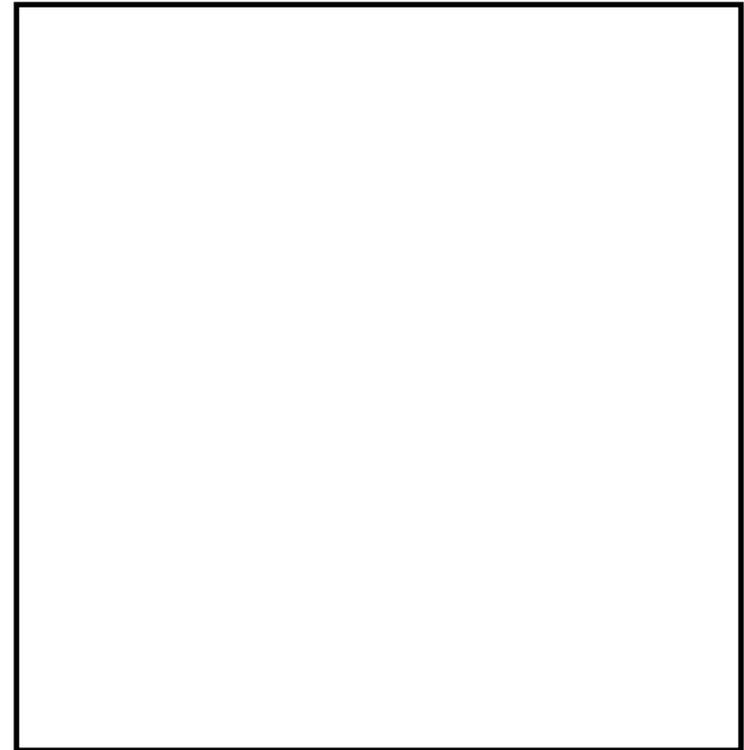
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Example from San Bruno (cont.)



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Example from San Bruno (cont.)



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Example from San Bruno (cont.)



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Example from San Bruno (cont.)

- Rescue operations
- Lack of water
- Extended hoses
- Water tenders



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Example from San Bruno (cont.)

- Rural/urban interface challenges
- Need of additional assistance
- Coordination with CalFire for aerial drops



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Example from San Bruno (cont.)

- “What we’ve done continuously is to be anticipating what’s going to be needed and . . . [then] do what needs to be done.”



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Example from San Bruno (cont.)

- “I mean, literally, we had thought through every possible contingency and had addressed it, and the operation was so smooth that people didn’t even believe it themselves – that they had been able to pull it off.”



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Example from Texas Tornadoes



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Example from Texas Tornadoes (cont.)



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Example from Texas Tornadoes (cont.)



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Example from Texas Tornadoes (cont.)



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Example from Texas Tornadoes (cont.)



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Example from Texas Tornadoes (cont.)

- “You can’t write a plan that you . . . follow every single time. Every plan has to be adjustable and modifiable. . . . Your . . . objective is to adjust to the particular incident.”
- “We had everybody in . . . a big room with key players, and we went . . . group by group [to get an update on the situation]. . . . Then . . . we would develop our plan.”



Example from Texas Tornadoes (cont.)

- “And we would identify every issue, and . . . what actions we were going to take and what the challenges [were]. And we wouldn’t leave the room until we had a . . . defined set of actions that we were going to take to address those issues.”
- “So, literally, from the first hour . . . we were in a mode of problem solving and decision making. There was no down time, and we worked 24 hours a day.”



Example from Texas Tornadoes (cont.)

- “All decisions are on the fly – even the ones you have planned for.”
- “The planning would be conducted at the EOC . . . to develop the incident action plans – which in this instance . . . there was never an incident action plan written.”



Major Lessons

- Avoid hubris
- Prepare for public health emergencies
- Consider spontaneous planning
- Focus more on planning in disasters (e.g., ICS)
- Develop new skills in emergency management and public health



Major Lessons (cont.)

- Pursue situational awareness
- Assess environmental cues
- Make sense of the unfolding disaster
- Reflect on existing plans and prior experience
- Entertain hunches about the future
- Identify emergent goals
- Develop mental models of what needs to be done



Major Lessons (cont.)

- Learn on the job (e.g., in the crisis itself)
- Seek the assistance of potential collaborators
- Communicate or meet with others
- Present, critique and negotiate options for problem resolution
- Determine how to improvise and implement new priorities
- Coordinate activities with pertinent agencies
- Adapt and follow up as needed



Recent/Current Concerns

- Social media in disasters
- Impact of NIMS and DHS
- Mass fatality management
- Long term recovery
- Comparative emergency management/International relief
- Logistics and supply chain management
- Environment/Climate Change



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Future Concerns

- EOC software
- Daily emergency management operations
- Management and emergency management
- Relationship between emergency management and homeland security, first responders, public health, business continuity planning, etc.
- Impact of COVID-19



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Future Concerns (cont.)

- Non-profits and emergency management
- Functional case study book
- Critical assessment of disaster policies
- School and workplace violence
- Scholar/practitioner interaction
- Scholarship of Teaching and Learning



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Ideas for Program and Classes

- Advisory board/council
- Reflect on curriculum
 - Guest speakers
 - Videos
 - Field trips
 - Student presentations
 - Exercises
 - Assignments and tests
 - Internships



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Your Thoughts?

- What else should be discussed and included?



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Thank You!

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