

## Session No. 22

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**Course Title: Social Dimensions of Disaster, 2<sup>nd</sup> edition**

**Session 22: Emergent Multiorganizational Networks**

**1 hr.**

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### **Objectives:**

- 22.1 Describe the problem of over-response
- 22.2 Describe at least five strategies for enhancing interagency coordination
- 22.3 Define and illustrate the concept of emergent multiorganizational networks
- 22.4 Define and illustrate the concept of a social map
- 22.5 Describe at least three patterns documented among interagency coordination strategies
- 22.6 Describe the consequences of the use of selected coordination strategies on improvisation, emergent network structure and response effectiveness
- 22.7 Explain why an understanding of emergent multiorganizational networks is important for emergency managers.

### **Scope:**

This session introduces students to key strategies for enhancing interagency coordination and the concept of emergent multiorganizational networks. Documented patterns among interagency coordination strategies, improvisation, emergent multiorganizational network structures and response effectiveness are reviewed. The relevance to emergency management is explained.

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### **Readings:**

#### *Student Reading:*

Drabek, Thomas E. 2003c. *Strategies for Coordinating Disaster Responses*. Boulder, Colorado: Institute of Behavioral Science, University of Colorado (Chapter 5 only: "Coordination Strategies and Response Effectiveness," pp. 122-152.

#### *Professor Readings:*

Drabek, Thomas E. 2003c. *Strategies for Coordinating Disaster Responses*. Boulder, Colorado: Institute of Behavioral Science, University of Colorado.

Drabek, Thomas E. and David A. McEntire. 2002. "Emergent Phenomena and Multiorganizational Coordination in Disasters: Lessons from the Research Literature." *International Journal of Mass Emergencies and Disasters* 20:197-224.

*Background References:*

Drabek, Thomas E. 1985. "Managing the Emergency Response." *Public Administration Review* 45:85-92.

Auf der Heide, Erik. 1989. *Disaster Response: Principles of Preparation and Coordination*. St. Louis, Missouri: C.V. Mosby Company (Chapter 6 entitled: "Resource Management, pp. 103-132).

Dynes, Russell R. 1978. "Interorganizational Relations in Communities Under Stress." Pp. 49-64 in *Disaster: Theory and Research*, edited by E.L. Quarantelli. Beverly Hills, California: Sage Publications Inc.

Osborne, David and Peter Plastrik. 1998. *Banishing Bureaucracy: The Five Strategies for Reinventing Government*. New York: Plume.

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**General Requirements:**

Student Handouts (22-1 through 22-6 appended).

Overheads (22-1 through 22-11 appended).

See individual requirements for each objective.

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**Objective 22.1 Describe the problem of over-response.**

**Requirements:**

Use Overheads 22-1 and 22-2.

Start this session with student exercise and proceed with lecture material specified below.

**Remarks:**

I. Introduction.

A. **Exercise.**

1. **Remind** students of exercise procedures.
2. **Divide** class into four groups and assign roles.
  - a. Chair.
  - b. Reporter.
  - c. Timer.
3. **Announce** time limit: 5 minutes.

B. **Display** Overhead 22-1; “Workshop Tasks”.

1. Group 1 – According to Drabek (2003c), what are five social factors that constrained the use of the coordination strategies he documented?
2. Group 2 – According to Drabek (2003c), how did the use of the coordination strategies he documented constrain the degree of improvisation in the disaster responses?
3. Group 3 – According to Drabek (2003c), how did the use of the coordination strategies he documented constrain the structure of the emergent multiorganizational networks?
4. Group 4 – According to Drabek (2003c), how did use of the coordination strategies he documented constrain the effectiveness of the disaster responses?

C. **Start** discussion.

D. **Stop** discussion.

E. **Explain** that the workshop reports will be given later in the session.

II. The problem of over-response.

A. **Ask** students: “Given items you have read in this course thus far, and your own case studies, what do you think would be examples of and the reasons for disaster over-response?”

B. **Record:** List student responses on the chalkboard.

C. **Explain:** Auf der Heide (1989, pp. 104-114) analyzed case studies of numerous disaster responses and identified five main reasons for an “over-response.”

D. **Display** Overhead 22-2; “Reasons for Disaster Over-Response.”

E. **Review** each topic listed, illustrate as required and **integrate** with student generated examples (adapted from Auf der Heide 1989, pp. 104-114).

1. **Surviving resources.**

a. **Manpower.**

- 1) Off-duty personnel report without being requested.
- 2) Non-emergency personnel can be reassigned.

b. **Food and clothing.**

- 1) Large inventory of goods available from households, retail outlets and warehouses.
- 2) Power failures may precipitate contributions of product that can not be kept frozen, e.g., restaurants and grocery stores.
- 3) **Example:** Anchorage, Alaska (March 27, 1964) earthquake: “Only one family had to obtain meals from a kitchen set up in the neighborhood by the Army. Many wives pooled foods with their friends or relatives and cooked for the group on whatever stove was available. People needing food could go to the supermarkets where guards were patrolling or the clerks were cleaning up and ask for an item that was needed. If it could be found undamaged, it was freely given to the asker.” (Auf der Heide 1989, p. 106).

c. **Medical facilities, supplies, and personnel.**

- 1) Decentralized locations of medical operations often results in extensive availability even if a few suffer damage.
- 2) Many off-duty personnel report.

- 3) **Example:** “In a study of 29 major disasters, only 10-15% of the casualties were injured seriously enough to require overnight admission to the hospital; only 6% of the hospitals suffered supply shortages, and only 2% had personnel shortages.” (Auf der Heide 1989, p. 107).

## 2. **Outside volunteer assistance.**

- a. Massive convergence; desire to help.
- b. Personnel from near-by communities volunteer.
- c. Initial damage assessments may be overwhelming; tendency is to respond with “send everything you’ve got.”

## 3. **Coordination procedures are neglected.**

- a. Damage assessment may not be predetermined.
- b. Who determines which outside resources are needed?

## 4. **Communication inadequacies.**

- a. Many unofficial helpers, reflecting basic motives of altruism, convergence at impacted areas and elsewhere. As they **define the situation**, their actions are based on best judgments. Often, they have **little or no communication** with authorities.
- b. Some individuals seek to be available to relieve others on the **assumption fatigue** will set in soon.
- c. A desire to “**share in the glory**” also appears to be a motivational factor for some unofficial helpers.

## 5. **Refusal is difficult.**

- a. **Example:** churches and various ad hoc groups advise officials that a convoy of trucks loaded with canned goods, etc., have been dispatched to the scene and will arrive soon.
- b. **Example:** remind students of Neal’s documentation of the “excess donations” problem following Hurricane Andrew in Session No. 16 (Non-victim Responses to Disaster”; Objective 16.4, Section III).

### **Supplemental Considerations:**

This **brief** section serves as a springboard to the detailed discussion of emergent multiorganizational networks (EMONS) that follows. By linking discussion of community responses from prior sessions, student **integration of concepts** can be enhanced. Some professors may wish to **expand** this session by developing additional links to prior sessions and case examples therein. Also, an additional case study or two could be used to illustrate the basic reasons for over-response.

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**Objective 22.2 Describe at least five strategies for enhancing interagency coordination.**

**Requirements:**

Use Overhead 22-3.

Use Student Handout 22-1.

**Remarks:**

- I. Drabek research methods (2003c).
  - A. **Distribute** Student Handout 22-1; “Disaster Coordination Strategies: Research Methods.”
  - B. **Review** the research methods listed for both phases of the study.
  - C. **Explain:** Contact agency personnel (pp. 18-21).
    1. **Drabek requested** that each local emergency manager select a potential interviewee from a list of agency types he provided, e.g., law enforcement, fire, etc.
    2. Most of these **interviews were scheduled** by the local emergency manager.
  - D. **Explain:** emergency manager interviews (pp. 18-20).
    1. During the week long visit to most communities, Drabek interviewed the local emergency manager in two or three sessions, hence, 4-6 hours total.
    2. Contextual information about the community and event were obtained in a telephone interview when cooperation first was requested. These occurred prior to field visits.

E. **Explain:** secondary source materials (pp. 19-20).

1. Media reports were obtained and reviewed from each community studied.
2. Numerous organizational logs, critiques, and other such materials were obtained and reviewed.

F. **Explain:** stress-strain theoretical perspective (pp. 2-3).

1. **Interpretative framework** that guided the design of the data collection instruments and analyses.
2. **Key assumptions.**
  - a. Organizational managers are actively involved in bargaining transactions.
  - b. Much managerial behavior reflects efforts to protect unit **autonomy, security and prestige.**
  - c. Disaster demands precipitate emergence of multiorganizational networks (EMONS).
  - d. All managers are **free to choose** alternative courses of action, but are **constrained** by past social learning and rapidly changing information bases.
  - e. Remind students of prior discussions of “emergent norm theory” and “bounded rationality theory” and the concept of **constraint**, e.g., Session No. 9 (“Understanding Disaster Warnings”; Objective 9.1, Section II.C.4. and Drabek 2000).

G. **Explain:** Osborne and Plastrik Typology (1998).

1. **Drabek validated** the relevance of the Osborne and Plastrik Typology for emergency managers, i.e., all five types of strategies within their typology were documented within the 62 disaster responses studied.
2. **The Osborne-Plastrik Typology** had been **formulated** for a variety of types of organizations.
  - a. Drabek explored each of the five general types of strategies, i.e., core, customer, etc., in the Phase I interviews so as to identify the 26 specific coordination strategies (pp. 123-124).

- b. These 26 strategies were validated through the telephone interviews with 52 Phase II local emergency managers.
- c. **Citation:** Osborne, David and Peter Plastrik. 1998. *Banishing Bureaucracy: The Five Strategies for Reinventing Government*. New York: Plume.

II. Disaster coordination strategies.

A. **Display** Overhead 22-3; “Disaster Coordination Strategies.”

B. **Remind** students that a list of the five general types and 26 specific coordination strategies are listed in the assigned reading (Drabek 2003c, pp. 123-124).

C. **Review several** of the strategies and illustrate as required. For examples, see Chapter 4 (“Disaster Coordination Strategies”) in Drabek (2003c, pp. 67-121).

1. **Core strategies.**

- a. Domain clarifications.
- b. Jurisdictional negotiations.
- c. Resource familiarizations.

2. **Consequence strategies.**

- a. Display of decisions.
- b. Use of information technologies.
- c. Maintenance of a hospitable EOC social climate.

3. **Customer strategies.**

- a. Communication of citizen expectations and requests.
- b. Facilitation of media relations.
- c. Documentation of damage assessments.
- d. Documentation of disaster repairs and restorations.

4. **Control strategies.**

- a. Appeals to prior legitimacy.
- b. Reference to planning documents.
- c. Reference to prior experiences, includes simulation exercises and prior disasters.
- d. Decentralization of decision-making.
- e. Use of self-managed work teams.
- f. Emergent collaborative planning.
- g. Emergent community-government partnerships.
- h. Implication of mutual aid agreements.

#### 5. Cultural strategies.

- a. Enhance awareness of cultural differences among responding agencies.
- b. Enhance awareness of vulnerable populations.
- c. Enhance awareness of community diversity.
- d. Interagency cross-talking.
- e. Building shared vision.
- f. In-house school house.
- g. Celebrating success.
- h. Monitor stress symptoms, includes EOC personnel and other responders.

#### **Supplemental Considerations:**

The **key message** of this section is that numerous coordination strategies are used by local emergency managers during disaster responses. Some professors may wish to **expand** this section by describing examples of each strategy. These may be obtained easily through reference to Chapter 4 in Drabek (2003c, pp. 67-121). **Additional analyses** have been completed and different examples for most of the 26 strategies are available (see Drabek 2003b). It is **essential** that all students demonstrate at least a

minimal understanding of the range of coordination strategies before proceeding to the next section. It is **recommended** that professors **ask for questions** and illustrate any of the 26 strategies that might be noted by students.

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**Objective 22.3 Define and illustrate the concept of emergent multiorganizational networks.**

**Requirements:**

Student Handout 22-2.

Overhead 22-4.

**Remarks:**

I. Origins.

A. **Explain:** Drabek et al. 1981.

1. **Research question:** How are search and rescue activities accomplished following disasters?
2. **Case studies** included (p. 13).
  - a. Tornado over water (Lake Pomona State Park, Kansas; showboat capsized) (June, 1978).
  - b. Flash flood (Texas Hill Country, including Bandera, Kendall and Kerr counties) (August, 1978).
  - c. Tornado (Wichita Falls, Texas) (April, 1979).
  - d. Tornado (Cheyenne, Wyoming) (July, 1979).
  - e. Hurricane Frederic (Jackson County, Mississippi) (August, 1979).
  - f. Volcanic eruption (Mount St. Helens, Washington) (May, 1980).
3. **Answer:** a multiorganizational network emerged (EMONS) reflecting personnel and resources from numerous local and extra-local organizations and agencies.

- B. **Explain:** Denis 1995, documented a similar response network following the PCB fire in St. Basile, Quebec, Canada. Case study included in Session 20 (“Organizational Responses to Disaster”; Objective 20.2, Section I).
- C. **Explain:** research **parallels** case study syntheses completed by Barton (1969) and Dynes (1970) although the specific formulation was developed by Drabek et al. 1981.

II. Emergent multiorganizational networks (EMONS).

- A. **Definition:** Emergent multiorganizational networks (EMONS) are the structure of relationships that form among organizations, or segments of organizations, that are focused on a specific task.
- B. **Display** Overhead 22-4; “EMON Example: Lake Pomona SAR Response.”
- C. **Review** topics on Overhead and elaborate as follows (based on Drabek 1985).

1. **Event.**

- a. Tornado passed over Lake Pomona, a reservoir located within Lake Pomona State Park, Kansas (approximately 35 miles south of Topeka, the state capital).
- b. Showboat Whippoorwill capsized; 46 passengers and 14 crew and performers were thrown into reservoir water, some trapped beneath boat.

2. **EMON diversity.**

- a. Personnel from 78 organizations responded to participate in or support SAR activities.
- b. The 20 “most important” organizations were selected for detailed study.
- c. Distribute Student Handout 22-2; “Lake Pomona EMONS.”

3. **Fragmentation.**

- a. Both horizontal and vertical.
- b. Gaps documented.
  - 1) Communication.

2) Decision making.

3) Control.

4. **Managerial challenge.**

a. Extensive division of labor.

b. Diverse mix of organizations.

c. Multiple organizational cultures.

d. Differential types and levels of training.

e. High organizational autonomy.

f. Short-lived system.

g. Task structure:

1) Urgent.

2) Unpredictable.

3) Informational uncertainties.

5. **Conclusion:** it is through such EMONS that disaster demands are met; it is such EMONS that emergency managers must understand, nurture, and coordinate.

**Supplemental Considerations:**

The **key objective** of this brief section is to insure **student understanding** of emergent multiorganizational networks (EMONS). Some professors may wish to relate this discussion to those presented previously by Denis (1995) (Session 20; “Organizational Response to Disaster”, Objective 20.2, Section I) and Aguirre et al. (1994) (Session 19; “Emergent Social Groups in Disaster”, Objective 19.5, Section I). More **detailed analysis** of Drabek’s previous work (e.g., Drabek 1985 and Drabek et al. 1981) may be appropriate depending on the context of the course.

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**Objective 22.4 Define and illustrate the concept of a social map.**

**Requirements:**

Student Handouts 22-3 through 22-6.

## Remarks:

### I. Constructing social maps.

#### A. Origins.

1. Drabek's SAR research described above.
2. Parallels earlier developments in sociometry, e.g., Moreno 1953.

#### B. The process.

1. Identification of key elements of social structure, e.g., frequency of communication.
2. Collect information.
  - a. **Example interview item** (Drabek et al. 1981, p. 41): "During this time period, how often was there direct communication between your organization and each of the other organizations that you knew was involved in some aspect of the SAR activity?" Response categories were:
    - 1) Continuously.
    - 2) About once per hour.
    - 3) Every few hours.
    - 4) About once a day or less.
    - 5) No communication.
  - b. **Example interview item** (Drabek et al. 1981, p. 46): "Thinking in terms of the major decisions affecting the overall search and rescue operation, mark in order the organizations that made the key decisions. If several were equally important, rank them equally; name your organization if appropriate." Up to six organizations could be identified and rankings were recorded with a "1" for the organization that made most of the key decisions. Others were ranked accordingly.
3. Create diagrams that display data. That is, the linkage patterns are drawn paralleling the sociometric process. See Drabek 1985 (p. 89) for a social map of the communication structure of the EMON that

emerged during the response to the tornado that capsized the Showboat Whipperwill.

4. Additional social maps are contained in Drabek et al. 1981, e.g., pp. 44, 48.

## II. Social maps: disaster coordination strategies study; Drabek 2003c.

### A. Explain.

1. Drabek used parallel methods to establish social maps of the disaster response EMONS among the 10 Phase I communities. These are listed on Student Handout 22-1.
2. **Examples** of two social maps and corresponding data appear in several tables and diagrams in the assigned student reading, e.g., Tables 3.1 (p. 44), and 3.2 (p. 49) and Figures 3.1 (p. 47) and 3.2 (p. 50).

### B. Distribute Student Handout 22-3; “An EMONS Communication Structure During the Emergency Response Phase\* (Community A).”

1. **Explain:** unpublished data from the Drabek (2003a) study were used to create this communication system matrix.
2. **Emphasize:** data are identified only as “community A” to disguise the actual study community.
3. **The interview item** was (listed at bottom of matrix): “Now I want to ask you a series of questions about these agencies. As we review these, please tell me the appropriate code for each based on this card (give Card #2). Let’s start with contact frequency. During the emergency response phase you identified a minute ago, how often did you and your staff have direct contact (e.g., not monitoring of radio) with personnel in each of these agencies?” (Card #1 was a listing of the names of the agencies selected for study in each community).
4. **Response codes** were listed on a card (Card #2) that was given to the interviewee (see bottom of matrix).
  - a. “Continual” = 1.
  - b. “About once per hour” = 2.
  - c. “Every few hours” = 3.
  - d. “About once per day” = 4.

- e. “Less than once per day” = 5.
- f. “No contact during this phase” = 6.
- g. “Not applicable” = 9.

5. **Identify** the 14 agency types; listed at the bottom of the matrix on Student Handout 22-3.

- a. County Emergency Management.
- b. Sheriff’s Department.
- c. City #1 Fire Department.
- d. Public Works.
- e. Elected Official.
- f. Red Cross.
- g. Military.
- h. Warning Agency.
- i. Emergent Group.
- j. State Water Resources.
- k. City #1 Manager.
- l. City #1 Police.
- m. City #2 Fire.
- n. City #2 Police.

6. **Interpretation.**

- a. **The top row** of responses were those given by the representative from the County Emergency Management agency in Community A. For example, a “3” (“every few hours”) best reflected the frequency of communications between this agency and agency #2, i.e., Sheriff’s Department.

b. **Each column** of responses reflects the counterpoints. That is, Emergency Management has no communication link to itself, hence, a “9” is the code listed in the far left column (top cell). Under that, a “3” is listed, followed by a “5”. These are the **responses given by** the representatives of the Sheriff’s Department and City #1 Fire Department. These codes reflect their **perception** of the frequency of communication with the Emergency Management Agency.

7. **Emphasize:** perceptions may differ regarding communication frequency. It is **common** for managers of coordinating units like emergency management to perceive a higher level of agency interaction with others, than they perceive is the case.

8. **Ask students:** “Where do you see examples of these types of perceptual inconsistencies in the communication data matrix presented in Student Handout 22-3?” (**Answer:** Emergency Management with agencies listed as #'s 3,4, and 12).

C. **Distribute** Student Handout 22-4; “Primary Communication Pathways: Emergency Response Phase (Community A).” **Explain** the diagramming process.

1. **Each linkage** between each pair of agencies was listed and an average was calculated. Agency 1 to Agency 2 = 3; Agency 2 to Agency 1 = 3. Average score =  $6 \div 2 = 3$ .

2. **Reference the legend**, i.e., **solid line** identifies linkages with values between 1 and 2; **dotted line** identified linkages with values greater than 2.

D. **Ask students:** “In what ways does this **social map** of the communication structure of this EMONS reflect fragmentation during the disaster response?” (**Answer:** certain agencies are minimally linked to others).

III. A contrasting community response.

A. **Distribute** Student Handout 22-5; “Emergency Response Phase: EMONS Communication Structure (Community B).”

B. **Explain:**

1. These data were obtained from one of the other Phase I communities in the Drabek (2003c) study of coordination strategies.

2. Analysis procedures were identical to those described above so as to construct a social map.
- C. **Distribute** Student Handout 22-6; “EMONS Emergency Response Phase (Community B).”
- D. **Ask students:** “How does the social map of the EMONS communication structure in Community B differ from that of Community A?” (**Answers**).
1. **The number** of interagency linkages is much greater.
  2. **The centrality** of the emergency management agency is much greater.
  3. **None** of the agencies are **isolates**.

### **Supplemental Considerations:**

For **most students** the concept of a social map will be new. It is recommended that the professor allocate enough class time so as to at least **illustrate the concept** through comparisons of the two community illustrations. Others may desire to walk students through the details of analysis presented above. Some may go **several steps beyond** this minimal coverage and select other case illustrations from the Drabek book (2003c) or prior publications, e.g., Drabek 1985, Drabek et al. 1981. Students might be encouraged to ask how the structure of these EMONS might **shift across the phases** of the life cycle of a disaster. Drabek’s (2003c) analysis documents many such shifts. Finally, it should be emphasized that this **research base is very thin** and awaits elaboration by other researchers who may use far more precision and rigorous measurement systems, e.g., Gillespie et al. 1993.

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### **Objective 22.5 Describe at least three patterns documented among interagency coordination strategies.**

#### **Requirements:**

Use Overheads 22-1 and 22-5.

#### **Remarks:**

- I. **Display** Overhead 22-1; “Workshop Tasks”.
  - A. **Remind** students of the task assigned to Group 1.
  - B. Group 1 – “According to Drabek (2003c), what are five social factors that constrained the use of the coordination strategies he documented?”

- C. **Remind** students that Drabek (2003c) used the typology of strategic choice formulated by Osborne and Plastrik (1998) to identify and document 26 strategies used by local emergency managers to coordinate disaster responses.
- II. Constraints on use of coordination strategies.
- A. **Group 1** report: 2 minutes.
  - B. **Display** Overhead 22-5; “Constraints on Use of Coordination Strategies.”
  - C. **Review** items listed on overhead and **supplement** Group 1 report as necessary (Drabek 2003c, p. 135-136).
    - 1. **Disaster training and responses** (more frequent).
    - 2. **Community population growth** (high).
    - 3. **IAEM membership** (yes; International Association of Emergency Managers).
    - 4. **Managerial strategies.** (Used more of these).
      - a. Based on prior research, e.g., Drabek 1990.
      - b. Eleven questionnaire items reflecting use of certain strategies during normal, non-disaster times.
      - c. This study will be reviewed in a subsequent session in this course, i.e., Session 32, “Strategic Planning by Local Emergency Managers.”
    - 5. **Community size** (larger).
    - 6. **Scope of impact** (more extensive).
    - 7. **Years of education** (more).
    - 8. **Time lived in community** (shorter).

**Supplemental Considerations:**

Depending on the **quality** of the group report, this section could be very **brief**. Perhaps only a **quick review** of the items listed on the Overhead will be required. Some professors may wish to **expand** the section by reminding students of prior discussions of model building and multivariate analysis. The **meaning** of the **regression coefficient** (Adjusted  $R^2 = .404$ ) might be discussed (see Drabek 2003c, p. 135). Also, the measures

used and discussions of **reliability** and **validity** could illustrate research method techniques for those professors desiring to **link the course** to social science theory and research. The **key message** is that the **degree of use** of the 26 coordination strategies **varied** among the 62 local emergency managers. Their actions reflected **eight sectors of constraint** that ranged from individual, agency, community, and event characteristics.

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**Objective 22.6 Describe the consequences of the use of selected coordination strategies on improvisation, emergent network structure and response effectiveness.**

**Requirements:**

Use Overheads 22-6 through 22-10.

**Remarks:**

- I. Use of coordination strategies and improvisation.
  - A. Group 2 report: 2 minutes.
  - B. **Display** Overhead 22-6; “Use of Coordination Strategies and Improvisation.”
  - C. **Review** topics on overhead and **supplement** Group 2 report as required; **integrate** with Group 2 report.
    1. **Coordination strategies used; improvisation high.**
      - a. **Explain:**
        - 1) Degree of improvisation; range 1 (low) to 5 (high).
        - 2) Rating made by Drabek (2003c, p. 137) at end of each interview.
      - b. **Five coordination** strategies were used **more frequently** by local emergency managers whose community disaster response reflected the **most improvisation.**
        - 1) Domain clarifications.
        - 2) Jurisdictional negotiations.
        - 3) Emergent collaborative planning.
        - 4) Emergent community-government partnerships.

5) Implementation of mutual aid.

2. Coordination strategies **not** used; **improvisation high**.

a. **14 coordination** strategies were **not used** as frequently by local emergency managers whose community disaster response reflected the **most improvisation**.

b. The **less used** coordination strategies were these.

1) Display of decisions.

2) Maintenance of a hospitable EOC climate.

3) Communication of citizen expectations and requests.

4) 11 additional coordination strategies (see Table 5.5, p. 138).

II. Constraints on improvisation.

A. **Ask students:** “What social factors did Drabek document that most constrained the degree to which improvisations were made during these 62 community disaster responses?”

B. **Answer: Display** Overhead 22-7; “Constraints on Improvisation.”

C. **Review** items listed on overhead and **illustrate** as required (adapted from Drabek 2003c, pp. 138-139).

1. **Domain consensus.**

a. **Definition:** extent of agreement on agency roles and responsibilities.

b. **Relationship:** **lowest levels** of domain consensus were documented in communities wherein the disaster response reflected the **highest degree** of improvisation.

2. **Length of forewarning** (shortest).

3. **Disaster training exercises** (less frequent).

4. **Frequency of past agency contact** (lowest).

5. **Use of managerial strategies** (lowest).

- D. **Conclusion:** “Pay me now, or pay me later.”
- III. Relationship between strategy and structure.
- A. Group 3 Report: 2 minutes.
- B. **Display** Overhead 22-8; “Coordination Strategies and Emergent Network Structures.”
- C. **Review** items listed on overhead and **illustrate** as required; **integrate** with Group 3 report.
1. **EMONS interagency communication.**
    - a. Frequency of agency contact was calculated for each of the 62 emergent structures for each of four disaster phases.
    - b. Correlations were computed with the use of the 26 coordination strategies in each of the four disaster phases.
    - c. **Conclusion:** “Managers who used more of the 26 coordination strategies operated within EMONS that had higher rates of interagency communication.” (pp. 141-142).
  2. **Rank in EMONS decision structure.**
    - a. All emergency managers were asked to rank each agency that participated in the response including their own regarding their role of the EMON decision making process (for measurement details, see p. 141).
    - b. The rankings for the emergency management agency were correlated with the frequency that the coordination strategies were used.
    - c. **Conclusion:** “. . . managers who used more of the 26 coordination strategies ranked higher in the EMON decision structures.” (p. 142).
  3. **Variations by disaster phase.**
    - a. Interagency communications and use of coordination strategies documented during warning and restoration phases. (p. 142).

- b. Decision structure and use of coordination strategies were documented in all four disaster phases, but were strongest during warning and restoration. (p. 142).

IV. Constraints on response effectiveness.

A. Group 4 report: 2 minutes.

B. **Display** Overhead 22-9; “Constraints on Response Effectiveness: Perceived.”

C. **Review** items listed on overhead and illustrate as required; **integrate** with Group 4 report (see Drabek 2003c, pp. 143-145).

1. **Perceived response effectiveness:** rating done by local emergency manager during interview; scaled from “1 to 5”, with “5” = “very effective”.
2. **Coordination strategies** (more used by emergency managers who rated the community disaster response as more effective).
3. **Disaster training exercises** (more frequent exercises and/or actual disaster responses).
4. **Past agency contact** (more frequent).
5. **Length of forewarning** (lengthy).
6. **Domain consensus**(high).
7. **Explain:** Adjusted  $R^2 = .965$ , i.e., 97% of the variance in response effectiveness explained (p. 144).

D. **Display** Overhead 22-10; “Constraints on Response Effectiveness: Actual”.

E. **Review** items listed on overhead and illustrate as requested; **integrate** with Group 4 report (see Drabek 2003c, pp. 145-147).

1. **Actual effectiveness:** 10 criteria proposed by Quarantelli (1997). Each criterion rated by Drabek on one to five (high) scale, then combined to create scale with range of 10 to 50.
  - a. Clear differentiation of agent-generated versus response generated demands.
  - b. Generic functions accomplished.

- c. Personnel and resource mobilization.
- d. Division of labor.
- e. Processing information.
- f. Decision-making.
- g. Coordination.
- h. Blending emergent groups.
- i. Information to media.
- j. Functioning EOC.

2. **The seven social constraints.**

- a. **Domain consensus** (high).
- b. **Coordination strategies** (more used).
- c. **Length of forewarning** (lengthy).
- d. **Disaster training exercises** (more frequent).
- e. **Local community service organizations** (more emergency managers with high effectiveness ratings reported such memberships).
- f. **Rate of population growth** (high).
- g. **Managerial strategies** (more used).

3. **Explain:** Adjusted  $R^2 = .688$ , i.e., 67% of the variance in response effectiveness explained (p. 147).

**Supplemental Considerations:**

The **key messages** of this section are that: 1) the **degree of improvisation** in disaster responses **varies** and is somewhat predictable; 2) **strategy and structure are related** in patterned ways, i.e., the usage pattern of coordination strategies by emergency managers **guides the emergence** of the multiagency response network (EMONS); and 3) the **degree of response effectiveness is predictable** with a multivariate model that reflects elements of strategic choice, preparedness actions and both community and event characteristics. Many professors may choose to limit this section to the major

conclusions. Others may **expand** it considerably through the introduction of more detailed reviews of the analysis used, critiques of the measures, and posing such questions as these: 1) “What other approaches to assessing response effectiveness might be used?” 2) “What other structural features of an EMONS might be useful to assess?” and 3) “How could such an approach, combined with the social mapping technique, be used in training?”

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**Objective 22.7 Explain why an understanding of emergent multiorganizational networks is important for emergency managers.**

**Requirements:**

Use Overhead 22-11.

**Remarks:**

- I. Introduction.
  - A. **Ask students:** “Why is an understanding of emergent multiorganizational networks (EMONS) important for emergency managers?”
  - B. **Record:** List key reasons on the chalkboard.
- II. Relevance of EMONS for emergency managers.
  - A. **Display** Overhead 22-11; “Relevance of EMONS for Emergency Managers.”
  - B. **Review** topics listed on Overhead 22-11 and illustrate as required; **integrate** with student generated responses (see also, Drabek and McEntire 2002, pp. 214-215).
    1. **Understanding over response.**
      - a. Difficulties in coordination exacerbate over response.
      - b. Plans and training exercises can aid emergency managers in guiding the structure of the emergent community response.
    2. **Interorganizational resource management.**
      - a. The 26 coordination strategies are consistent with and reflective of many basic principles of resource management.

- b. Documentation of varied use patterns provides important linkages to a broader and more comprehensive theoretical perspective required for emergency management.

**3. Structural characteristics of U.S.A. disaster responses.**

- a. Localism, lack of standardization, unit diversity, and fragmentation in U.S.A. community disaster responses has been documented repeatedly (Drabek 1985).
- b. Through the emergent multiorganizational network perspective, emergency managers can bring an administrative theory to their task that better fits both the analytic characteristics of disasters and the cultural and political systems within which they work.

**4. Emergent multiorganizational networks exist.**

- a. Emergent networks have an independent reality.
- b. Like gravity, these networks constrain the actions of responders.
- c. Network strains cause managerial frustration and system failure.

**5. Social maps for training and planning.**

- a. Social maps can be used in multiagency training, e.g., “How does your organization fit into the network decision-making structure?”
- b. Social maps can facilitate multiagency planning, e.g., “Where do we have holes in our communication structure?”

**6. Context for operational problems.**

- a. Communication structures fail; often it is not the people.
- b. Strategic resource allocation decisions are best made at the network level, not within or by any single agency acting in isolation.

**7. Strategies for enhanced coordination.**

- a. Relationships between strategy and structure have been documented.

- b. Patterns of use of selected coordination strategies are a critical constraint on the degree of improvisation in community disaster responses.
- c. “Pay me now, or pay me later.”

#### 8. Constraints on emergent multiorganizational networks.

- a. Response effectiveness varies with use of selected coordination strategies.
- b. Response effectiveness reflects elements of strategic choice, preparedness actions, and both community and event characteristics.

#### Supplemental Considerations:

A good way to **wrap-up this session** would be through student discussion of the eight topics listed on the overhead. Following the initial responses to the recommended “start-up” question, the professor could **guide discussion** of each of the **eight key points** and elaborate on student proposed illustrations and linkages across topics. It is essential that enough discussion time be allowed so that **every student** has a **clear understanding** of the **basic theory** of emergent multiorganizational networks and their role in **response failures**. Some professors may wish to **highlight the theoretical model** constructed by Drabek (2003c, p. 149, Figure 5.1). Through discussion of this model, **like layers within an onion**, the systems within systems imagery could be illustrated. **Student understanding** would be **enhanced** greatly through this pictorial representation of **constraints** ranging from **policy and events external** to the local community.

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