

From Complex Emergencies to Terrorism — New Tools for Health-Sector Coordination in Conflict-Associated Disasters

David A. Bradt, MD, MPH, FACEM, FAFPHM, FAAEM,¹
Christina M. Drummond, MBBS, DObst(RCOG), DTM&H, FRACP, MPH, MAE, FAFPHM²

1. Department of Emergency Medicine, Royal Melbourne Hospital, Melbourne, Australia; Center for International Emergency, Disaster, and Refugee Studies, Johns Hopkins Medical Institutions, Baltimore, Maryland USA
2. Department of Infectious Diseases and Clinical Epidemiology, Monash Medical Center, Melbourne, Australia; Center for International Emergency, Disaster, and Refugee Studies, Johns Hopkins Medical Institutions, Baltimore, Maryland USA

Correspondence:

David A. Bradt
Department of Emergency Medicine
Royal Melbourne Hospital
PO Box 2009
Grattan Street and Royal Parade
Parkville 3050
Victoria, Australia
E-mail: dbradt@jhsph.edu

Supported in part by funding from the World Health Organization under APW SE/01/500694

Keywords: complex emergencies; component summary; coordination; disaster; health sector; minimum essential data sets; terrorism

Abbreviations:

EHA = Emergency and Humanitarian Action
FAO = Food and Agriculture Organization
HA = humanitarian assistance
HC = humanitarian coordinator
HHA = humanitarian health assistance
MEDS = minimum essential data sets
NATO = North Atlantic Treaty Organization
NGO = Non-Governmental Organization
OCHA = Office for the Coordination of Humanitarian Affairs
SRSG = Special Representative of the United Nations Secretary-General
TFQCDM = Task Force on Quality Control of Disaster Management
UN = United Nations

Abstract

Inter-agency coordination in humanitarian assistance dates as a discipline from the 1960s. The United Nations, Red Cross, governmental, and non-governmental agencies have evolved different mechanisms to achieve it. Present practices in field-based, inter-agency coordination of the health sector remain variable and non-standardized. International experiences in coordination of humanitarian assistance reveal numerous issues of jurisdiction, authority, capacity, and competency. New tools to help overcome these issues in the health-sector coordination include binding principles of engagement, protocols for the assumption of responsibilities, standardized minimum essential data sets, and health-sector component summaries.

Bradt DA, Drummond CM: From complex emergencies to terrorism—
New tools for health-sector coordination in conflict-associated disasters.
Prehosp Disast Med 2003;18(3):263-271.

Introduction

Coordination in humanitarian assistance (HA) has been defined as “the systematic use of policy instruments to deliver humanitarian assistance in a cohesive and effective manner. Such instruments include strategic planning, gathering data and managing information, mobilizing resources and ensuring accountability, orchestrating a functional division of labor, negotiating and maintaining a serviceable framework with host political authorities, and providing leadership.”¹ Coordination in HA

dates as an operational issue from the 1960s. The United Nations (UN), Red Cross, and governmental and non-governmental organizations (NGOs) have evolved different mechanisms to effect it. The importance of coordination continues to be emphasized in numerous contemporary, international agency references.²⁻⁵ A leading non-governmental organization has placed coordination in emergency situations among its top 10 priorities.⁶ The Sphere Project, in its annex to

UNDP = United Nations Development Program
UNHCR = United Nations High Commissioner for Refugees
UNICEF = United Nations Children's Fund
UNSG = United Nations Secretary-General

WFP = World Food Program
WHO = World Health Organization

Web publication: 15 March 2004

1971:	UN General Assembly Resolution 2816 creates Office of the UN Disaster Relief Coordinator (UNDRO)
1991:	UN General Assembly Resolution 46/182 creates Inter-agency Standing Committee (IASC) and the UN Emergency Relief Coordinator (ERC)
1992:	UN Secretary General (UNSG) establishes Department of Humanitarian Affairs (DHA) as successor to UNDRO, and designates ERC as Under-Secretary-General (USG) for Humanitarian Affairs
1994:	IASC approves terms of reference for Humanitarian Coordinators (HC) to be appointed by the ERC on behalf of the UNSG as the senior UN official responsible for coordinating humanitarian assistance
1997:	UNSG establishes Office for the Coordination of Humanitarian Affairs (OCHA) as successor to DHA and divests OCHA of responsibility for operational activities

Prehospital and Disaster Medicine © 2003 Bradt

Table 1—Milestones in coordination of humanitarian assistance (UN = United Nations)

United Nations Development Program Resident Coordinator/Humanitarian Coordinator

Country examples of deployment include: Afghanistan; Angola; Burundi; Indonesia.

Major attributes of model

Fosters links between relief and development

Funded by UN Development Program

Major concerns with model may lack experience in coordinating disasters

Separate Humanitarian Coordinator

Country examples of deployment include: Horn of Africa (1999); Great Lakes (1998); Democratic Republic of Congo (1996);

Kosovo; East Timor

Major attributes of model

Dedicated solely to issues of humanitarian coordination

Amenable to trans-national (regional) requirements

Major concerns with model may experience overlap of roles with UNDP Resident Coordinator in continuum of relief-to-development

Lead Agency

Country examples of deployment include: UNHCR in Bosnia-Herzegovina (1999–2000); UNHCR in Kosovo (1999–2000);

UNICEF in South Sudan (through 1999); WFP in North Korea

Major attributes of model

Requirements of assistance may be closely linked to mandate

Agency may have extensive in-country experience antedating the disaster

Major concerns with model narrow vision and vested interests

Special Representative of the Secretary General

Country examples of deployment include: Angola; Federal Republic of Yugoslavia; East Timor; Sierra Leone; Tajikistan

Major attributes of model—Direct links to UN Secretary General

Major concerns with model—Not generally charged with coordination of disasters

Prehospital and Disaster Medicine © 2003 Bradt

Table 2—UN coordination models in humanitarian assistance (UN = United Nations; UNHCR = United Nations High Commissioner for Refugees; UNICEF = United Nations Children's Fund; WFP = World Food Program)

an international code of conduct, encourages inter-governmental organizations to provide an overall coordinating framework for international and local disaster relief.⁷

Nevertheless, present practices in field-based, inter-agency coordination of the health sector remain variable and non-standardized. Recognized minimum standards for such coordination presently do not exist.⁷ The evolving hazard-scape of conflict-associated disasters, encompassing complex emergencies and terrorism, places pressing challenges before disaster intervenors in the health sector to devise, implement, and refine their tools for the coordination of HA. This article highlights issues and actors in inter-agency coordination of humanitarian assistance emerging from present practices of UN agencies and member states, and then, presents tools to enhance field-based, inter-agency coordination of the health sector in conflict-associated disasters.

Issues and Actors in Present Practices

The UN system has numerous agencies providing humanitarian assistance (HA). Six dominant ones are the United Nations Development Program (UNDP), United Nations High Commissioner for Refugees (UNHCR), United Nations Children's Fund (UNICEF), World Food Programme (WFP), Food and Agriculture Organization (FAO), and the World Health Organization (WHO). Each listed agency was established under a separate international treaty, is governed by separate inter-governmental governance mechanisms, and is funded predominately through bilateral donor contributions external to the UN budget. The UN first institutionalized responsibility for coordination of HA in 1971 in the Office of the UN Disaster Relief Coordinator.⁸ Inadequate funding, staffing, competencies, and consensus on mandate hobbled the office from its inception.⁷ Milestones in the subsequent evolution of the UN responsibility for coordination of HA are summarized in Table 1. At present, the UN coordination responsibilities

1. Central coordination of joint operations
2. Early agreement on responsibilities and objectives
3. Common territorial areas of responsibilities
4. Compatible communications
5. Collocation
6. Deployment of liaison officers
7. Inter-agency meetings
8. Routine contact between desk officers
9. Civil-military operations centers
10. Reconnaissance missions by incoming staff prior to staff rotation

Prehospital and Disaster Medicine © 2003 Bradt

Table 3—Ten steps to effective coordination (Adapted from United Nations High Commission for Refugees (UNHCR) Handbook¹²)

Population of Concern	Context	Example
Refugees moving across international border	Government controls area of influx	Tanzania, 1994
Refugees moving across international border	Government lacks control over area of influx	Zaire, 1996
Refugees repatriating	Government lacks control over area of influx	Afghanistan, 2003
Internally displaced persons	Government controls area of influx	Angola, 1990s
Internally displaced persons	Government lacks control over area of influx	Northern Iraq, 1991
Victims of conflict in situ	Widespread areas of conflict with existing government controlling limited areas	Bosnia, 1992
Victims of conflict in situ	Delimited areas of conflict with stable government controlling non-conflict areas	Chechnya, 2001
Entire population	No conflict but economic embargo	Iraq, 2002
Entire population	Existing state with rogue government unrecognized by international community	Haiti, 1992
Entire population	Emerging state with government unrecognized by international community	Palestine, 2003
Entire population	Failed state without central authority	Somalia, 1990s

Prehospital and Disaster Medicine © 2003 Bradt

Table 4—Geopolitical contexts (Adapted from Toole¹⁵)

rest with the Office for the Coordination of Humanitarian Affairs (OCHA) in the UN Secretariat.¹⁰

Since the inception of a UN lead entity for coordination of HA, the UN has deployed various models for field-based coordination. The models are summarized in Table 2. In 2001, the lead coordination role was provided by a UNDP Resident Coordinator/Humanitarian Coordinator in 15 countries, a Humanitarian Coordinator separate from the Resident Coordinator in four countries, and a lead agency model in two countries.¹¹ Concurrently, the UN Office for the Coordination of Humanitarian Affairs (OCHA) had field coordination units in 23 of 37 countries with conflict-associated disasters. An external study commissioned by OCHA, examined the UN experiences in humanitarian coordination during crises of armed conflict during the last decade, and found recurring issues across the models. These issues included a lack of clear terms of reference, guidance on job responsibilities, reporting requirements, and consultation lines.¹¹ The study also underscored the critical role of sectoral coordination in effectiveness of overall humanitarian coordination.

United Nation agencies individually have recognized these issues, and endeavored to optimize their contributions to coordination. The UNHCR has been particularly innovative as the first UN agency to publish detailed guidance on coordination with the military in conflict-associated disasters.¹² Its 10 steps recommended for effective coordination are summarized in Table 3. Civil-military cooperation has been fostered by military initiatives as well. Pioneering work in the discipline occurred in 1994 with establishment of the Center of Excellence in Disaster Management and Humanitarian Assistance at Tripler Army Medical Center within the U.S. Pacific Regional Medical Command. The technical contributions of the Center's first Director include defining medical liaison roles and establishing requirements for education and training.¹³ In 1997, the Center became the first Pan-American Health Organization/World Health Organization (WHO) Collaborating Center for Humanitarian Civil-Military Cooperation, and continues to provide integrated education and training.¹⁴

In the health sector, the UN's lead technical agency is the WHO, whose Department of Emergency and

1. Authority to work in [country] is conferred by the Government of [country] through the Ministry of Health.
2. [Lead agency] authority to coordinate organizations in the health sector is conferred by the Ministry of Health. [Lead agency] is requested to convene health coordination meetings to establish a periodic forum at which health agencies may discuss technical and programmatic issues affecting their delivery of humanitarian health assistance in [country].
3. Participants agree to conform to health policies and procedures established by statute of the Government of [country] and regulation of the Ministry of Health.
4. Participants agree to support minimum standards for humanitarian assistance as disseminated by the Sphere Project.
5. Participants agree to adhere to the International Code of Conduct.
6. Participants agree to fully characterize their organization's health activities in [country] to enable development of a health intervenor database that optimizes resources by identifying service gaps and preventing duplication of services.
7. Participants agree to undertake health activities relying on organizational competence to serve local needs with [lead agency] acting to encourage and coordinate multi-party involvement.
8. Meeting agendas are intended to support and complement interactions currently underway between participants and [country] health authorities.
9. Meeting discussions are intended to be interactive, field-oriented, and practical. The approach to health issues will involve dissemination of information, examination of problems, appraisal of options, development of consensus, and implementation of remedies.
10. Meeting minutes will be written by [lead agency] and disseminated to focal points among participant organizations and [country] health authorities to evidence ongoing transparency and professionalism among colleagues in humanitarian health assistance.

Prehospital and Disaster Medicine © 2003 Bradt

Table 5—Health coordination principles of engagement

Humanitarian Action (EHA) provides technical support to national and international agencies working in disasters and emergencies. Coordination of humanitarian assistance was studied extensively by the World Health Organization through a series of meetings and consultations that began in 1997. Consistent approaches to complex disasters, in particular, were seen to be constrained by the variety of geopolitical contexts (Table 4).¹² Consistent approaches to conflict-affected areas were difficult to prescribe, and the WHO's capacity to coordinate, much less implement, was difficult to predict. The WHO has responded with a number of steps codified in its Core Commitments in Emergencies.¹⁶ These Core Commitments include "ensuring presence and operational capacity in the field to strengthen coordinated public health management for optimal, immediate impact, collective learning, and health-sector accountability." Terrorism now emerges as a complicating factor for those commitments.

The WHO/EHA adopted recommendations for operations research to address outstanding technical issues relating to provisions of health services in complex emergencies. An Advisory Group on Research in Emergencies was established in 1998. By 2001, the WHO began funding specific projects in operations research on post-disaster health coordination. Concurrently, the WHO undertook development of a training program with academic institutions to improve coordination of health relief at the field level. Standardized tools presently are under consideration.

New Tools for Field-based Inter-agency Coordination

International experiences in inter-agency coordination reveal numerous issues of jurisdiction, authority, capacity, and competency. At a technical level, humanitarian health assistance (HHA) remains multi-disciplinary, as it relies upon information from many technical domains. Mission-critical information for health coordinators is obtained from security officers, public health officers, medical officers, management information officers, agency managers, politicians and bureaucrats, as well as health coordinators

from other agencies. Through an understanding of multi-disciplinary technical information, health coordination involves unique activities—serving as health liaison, crafting multi-party agreements, providing situational overview, verifying beneficiary needs and service gaps, focusing relief efforts on appropriate priorities, and seeking resources to address unmet needs. These activities commonly occur within a health-sector coordination committee comprised of health coordinators from involved agencies. While the normative practices of health coordination are well-characterized in the technical literature, coordination tools have not been well-standardized. Ultimately, the numerous information sources confronting health coordinators and the demands placed on them have prompted the development of new tools for field-based, inter-agency coordination of the health sector in conflict-associated disasters. The tool kit presented below contains four such tools: (1) binding principles of engagement; (2) protocol for assumption of responsibilities; (3) health-sector gap identification; and (4) health-sector component summaries.

1. Binding Principles of Engagement

Binding principles of engagement represent an opportunity for the health coordinators to develop consensus on health-sector principles, practices, and accountability. In their ideal form, the principles acknowledge humanitarian values, group commitment to international best practices, and ascendancy of the host country. An example is in Table 5.

The document specifics are less important in many ways than is the process of developing a consensus around them. The process evidences the ability of health coordinators to develop a consensus on non-controversial areas. The UNHCR lead health coordinator in Albania, in 1999, and the WHO lead health coordinator in Indonesia, in 2000, among others, developed such documents with their NGO colleagues. A fundamental problem in health-sector coordination occurs when the lead health coordinator cannot obtain such consensus early in a relief operation. This failure does not lend support for the group's ability to develop consensus around controversial issues later in the relief effort.

A. Host Government

1. Country profile
2. Public health country profile
3. Health system description
4. Ministry of Health organogram
5. Current government appeals

B. Beneficiaries

1. Local map (1:100,000)
2. Local map with locations of populations of concern
3. Table of number of disaster-affected persons and number of heads of households by (sub)districts
4. Table of number of disaster-affected sites by (sub)districts and site population size bracket (<5,000, 5,000–10,000, 10,000–15,000, etc.)
5. Table of number of disaster-affected sites and number of disaster-affected persons by health center catchments
6. Quantification of vulnerable groups—U5, orphaned, pregnant, etc.

C. Implementing Partners

1. Area activity matrix

D. Standardized Case Management

1. Clinical case definitions
2. Treatment protocols
3. Essential drug lists
4. Referral guidelines
5. Secondary prevention measures

E. Epidemic Preparedness

1. Clinical case definitions
2. Case management guidelines for communicable diseases with epidemic potential
3. Outbreak management protocol
4. Guidelines for specimen collection in communicable disease outbreak

F. Epidemiological Surveillance

1. Clinical case definitions
2. Camp logbooks
3. Weekly surveillance report forms
4. Reporting process—description and diagram
5. Recent field studies

G. Contact List (office address, phone, and E-mail)

1. Index organization
2. Government officials
3. NGO homologues

Prehospital and Disaster Medicine © 2003 Bradt

Table 6—Protocol for assumption of responsibilities in humanitarian health assistance data inventory (NGO = non-governmental organization; U5 = under five years)

2. *Protocols for Assumption of Responsibilities*

Assumption of responsibilities for health coordination in the field is plagued by numerous pitfalls—lack of hand-over planning, incomplete and absent documentation, non-overlap of individual successive job holders, poor communication with beneficiaries, misunderstanding of expectations, all exacerbated by urgency of intervention limiting opportunity to create smooth transitions. Hand-over of responsibilities in the field between different agencies further complicates problems. Recent civil-military experiences with North Atlantic Treaty Organization (NATO) units in the Balkans during the Kosovo Crisis illustrate many of these pitfalls:

- British military engineers managing Bojano refugee camp in Macedonia commenced field hand-over to an NGO after reporting the need to withdraw within 48 hours. Hand-over was aborted after 24 hours as the host government reassigned camp to another international

organization.

- German military medical units managing the Neprostino Camp in Macedonia effected field hand-over to an NGO. During the transition, the NGO learned that the camp services provided by the military, included heated water, showers, and three meals per day with fruit juice. Camp health services provided by the military utilized bedside ultrasound, digitized x-ray, operating theatre, and toys for each outpatient. The NGO was unable to match the standard of care provided by the NATO units. After the transition to NGO management, security tensions exacerbated in the camp in response to the “deterioration” of camp services.
- American military units erected and ran the showcase refugee Camp Hope in Albania. It promptly flooded in the seasonal rain. Hand-over to civilian control was deemed necessary.

Health coordination can anticipate and mitigate many of these kinds of problems through a protocol for assumption

Subsector	Site 1	Site 2
Sector Management		
Hazard identification/Containment		
Clinical Health Services		
Health Center/Post		
Clinical Health Services Mobile Clinics		
Clinical Health Services Hospital		
Clinical Pathology Laboratory Support		
Special Services Mental Health		
Special Services Maternal-Child Health		
Special Services Reproductive Health		
Special Services HIV/AIDS		
Special Services Supplementary Feeding		
Epidemic Preparedness		
Communicable Disease Control		
Immunization		
Community Health Education		
Epidemiological Surveillance		
Medical Logistics		

Prehospital and Disaster Medicine © 2003 Bradt

Table 7—Area-activity service matrix

of responsibilities with a structured data inventory. An example is presented in Table 6. Data inventory for transfer of responsibilities within an agency may include information on financial, material, and human resources as well.

3. Standardized, Minimum, Essential Data Sets

A Task Force on Quality Control of Disaster Management (TFQCDM) found disaster needs assessments difficult and subjective, and called for further development of standardized tools.¹ The concept of minimum, essential data sets in rapid epidemiological assessment recently has been characterized in the medical literature.¹⁸ A minimum, essential data set relevant to health coordination is *health sector gap analysis*. This analysis specifies domains of responsibility in HHA defined by geographic area. Such responsibilities may be assigned or assumed. Individual agencies may have extensive agreements with host government authorities concerning their authority to act, and agencies so armed, may be highly contentious in asserting their “rights” to serve in a given area. However, there typically are few documents that integrate these agreements among individual organizations involved in health coordination at the local level. The weakness in health coordination is failure to explicitly articulate both the domains of responsibility and the geographic areas to which they apply. This information is especially important to newly arrived organizations seeking a niche in the disaster relief efforts. Consequences of the failure in transparency are service gaps, service duplication, and ultimately, denial of responsibility for subsequent problems.

The standardization needed in gap analysis is inventory of the services to be provided for specified catchment areas.

While area-activity agreements may be presented in matrix form, the format is less important than is the understanding and dissemination. An example is presented in Table 7.

4. Health-sector Component Summaries

Health-sector component summaries serve participating agencies in relief operations by concisely identifying the subsector lead agency, milestones and benchmarks, project current status, and overall priority/unmet need. This tool, unlike others mentioned above, requires little input from outside agencies. The tool requires only that the lead health coordinator exercises due diligence. Insofar as it is a conceptual burden for the lead health coordinator to succinctly profile the current status of an entire evolving disaster outside of the scope of his/her organization, the task commonly is avoided. The weakness in health coordination is failure to capitalize on a three-fold opportunity: (1) the leadership opportunity for the lead health coordinator to quickly demonstrate an ability to organize cross-cutting information relevant to numerous stakeholders in the disaster response; (2) the strategic opportunity to shape the optics of disaster relief by proper prioritization of relief issues; and (3) the tactical opportunity to quickly orient health coordinators from organizations newly arriving in the field. All opportunities enable the health coordinator to contribute to a common understanding of disaster issues in the field and should not be overlooked. An example adapted from the terrorism on Ambon Island in the Maluku is in Table 8.¹⁶

Discussion

Conflict-associated disasters threaten security that jeopard-

Components of Assistance	Milestones and Benchmarks	Status	Priority	Lead/Contact
Security Assessment				
Security stabilization	Access, ongoing security incidents			
Hazards identification	Site mapping			
Rapid Epidemiological Assessment				
Beneficiary identification	Site mapping			
	Registration			
Communication	Radio handset provision			
Rapid epidemiological assessment	Template			
Assessment priorities	Crude mortality rates			
Environmental Health Services				
Water supply	Minimum standards			
Food supply	Minimum standards			
Supplementary feeding	Minimum standards			
Sanitation	Minimum standards			
Shelter	Minimum standards			
Vector control	Service delivery			
Public Health and Clinical Services				
Immunization	Measles coverage rate			
	Vitamin A distribution			
Clinical services	Complete camp/site allocation			
Primary Health Care	Service delivery			
Mobile clinics	Service delivery			
Hospitals	Service delivery			
Standardized case management	Clinical case definitions			
	Treatment protocols			
	Essential drugs			
	Referral guidelines			
	Secondary prevention measures			
Special Needs				
Reproductive health	Service delivery			
Maternal-child health	Service delivery			
HIV/AIDS	Service delivery			
Mental health	Service delivery			
Epidemic Preparedness				
Communicable diseases of epidemic potential	Clinical case definitions			
	Case management guidelines			
Outbreak management protocol	Rapid response team to investigate			
	Specimen collection protocol to follow			
	Reference lab to identify			
	Patient isolation			

Prehospital and Disaster Medicine © 2003 Bradt

*continued***Table 8**—Health sector component summary

Components of Assistance	Milestones and Benchmarks	Status	Priority	Lead/Contact
Communicable Disease Control				
EPI	National program			
Malaria	National program			
Tuberculosis	National program			
Community Health Education	Culturally appropriate messages			
Quality improvement	Site monitoring visits			
Epidemiological Surveillance				
Data source identification	Camp size threshold/village level targeting			
Data management	Logbooks, village + block level records			
	Data collection and analysis			
	Information reporting and dissemination			
Special surveys	Methodology			
Health Sector Coordination				
Inventory of organizations	Contact list			
Sectoral coordination meetings	Schedule			
Existing health system catchments	Defined areas of responsibility			
NGO/agency area-specific task designations	Matrix			
Health personnel credentialing	Defined process			
Drug importation/medical logistics	Defined process			
Provincial health authority capacity building	Self-sufficient health sector management			

Prehospital and Disaster Medicine © 2003 Bradt

Table 8-(Continued)—Health sector component summary (NGO = non-governmental organization)

dizes HA. Success in HA requires a secure area in which to conduct relief operations. Re-establishing this security commonly entails civil-military interaction. Terrorism appears likely to increase the need for this interaction in future disaster preparedness and response. The military's recognized means for this interaction will vary by country and coalition. Humanitarian operation centers, humanitarian assistance coordination centers, civil-military operations centers, and on-site operations coordination centers all have served as venues for it. The attributes of each are well-characterized through case reports and analysis.²⁰

However, defining and obtaining security remain a polarizing issue in humanitarian assistance. Security for the military means force protection by arms, which leads to displays of overwhelming force in everything it does. Security for civilian intervenors means legitimacy of acting in a humanitarian manner that creates a willingness to engage a situation on the humanitarian merits. Given the difficulty of defining security in a humanitarian intervention, there must be ongoing communication between the military and the humanitarian communities ideally before, and certainly throughout, the humanitarian response to conflict-associated disasters. Communication remains the

vital link between two different operational paradigms—C4I (command, control, computers, communications, and intelligence) in the military and C4A (cooperation, coordination, consensus, communication, and assessment) in the humanitarian community.²¹ There must be an extraordinary effort at redundant communication and network development. There is no one single point of coordination, and liaison alone certainly does not establish a relationship or commit to outcomes. Overall, coordination is a duty shared by the entire participant community.

Nevertheless, improvements in tools for field-based coordination of the health sector alone are unlikely to yield substantial improvements in the humanitarian response system without structural changes to other components. There remain clear needs to reform humanitarian operations, strengthen the current decentralized system, and improve the funding for humanitarian coordination.¹¹ The expanding hazardscape, accentuated by ubiquitous availability of weapons for terrorists, heightens the urgency of this challenge.

Conclusions

Four tools for field-based, inter-agency coordination of the

health sector in conflict-associated disasters are binding principles of engagement, protocols for assumption of responsibilities, standardized minimum essential data sets, and health-sector component summaries. While these tools have been developed for and applied in conflict-associated disasters, they may have demonstrable utility in other disasters as well. Further refinement depends on future applications in field settings.

A pioneer in humanitarian assistance wrote an early sentinel publication in which he embraced the notion of a

World Disaster Coordinating Center.²² Frederick Cuny acknowledged that the primary responsibility for disaster response remains with the host government, that international aid has limited effects, and that intervention is not totally positive. The World Disaster Coordinating Center remains far off. Nevertheless, common tools in inter-agency coordination of the health sector in conflict-associated disasters can contribute to enhancing the benefits of HA anticipated by the visionaries of the discipline.

References

1. Minear L, Chelliah U, Crisp J, et al. UN coordination of the international humanitarian response to the Gulf Crisis 1990-1992. Occasional paper #13. The Thomas J. Watson Institute for International Studies, Brown University, Providence, Rhode Island. 1992.
2. International Committee of the Red Cross: *War and Public Health*. Geneva, Switzerland: International Committee of the Red Cross, 1996, pp 310-318.
3. International Federation of Red Cross and Red Crescent Societies: Disaster response programme components. In: *Handbook for Delegates*. Geneva, Switzerland: International Federation of Red Cross and Red Crescent Societies, 1997. p 661.
4. United Nations High Commissioner for Refugees: Emergency management. In: *Handbook for Emergencies*. Geneva, Switzerland: UNHCR, 2000. pp 58-65.
5. World Health Organization Department of Emergency and Humanitarian Action: *Handbook for Emergency Field Operations*. Geneva, Switzerland: WHO, 1999. pp 32-36.
6. Médecins Sans Frontières: *Refugee Health—An Approach to Emergency Situations*. Hong Kong: Macmillan Education, 1997. pp 223-230.
7. The Sphere Project: *Humanitarian Charter and Minimum Standards in Disaster Response*. Geneva, Switzerland: Oxfam Publishing, 1998.
8. United National General Assembly: UN General Assembly Res 2816 (XXVI), 14 December 1971.
9. Macalister-Smith P: *International Humanitarian Assistance—Disaster Relief Actions in International Law and Organization*. Dordrecht, The Netherlands: Martinus Nijhoff, 1985. pp 129-147.
10. Office for the Coordination of Humanitarian Affairs: *What It Is, What It Does*. New York: United Nations, undated.
11. Reindorp N, Wiles P: Office for the Coordination of Humanitarian Affairs. Humanitarian Coordination: *Lessons from Recent Field Experience*. London: Overseas Development Institute, June 2001. Available from the UN Office for the Coordination of Humanitarian Affairs, New York, and the Overseas Development Institute, London.
12. United Nations High Commissioner for Refugees: *UNHCR Handbook for the Military on Humanitarian Operations*. Geneva: UNHCR, 1995.
13. Burkle FM: Complex humanitarian emergencies: Medical liaison and training. *Prehosp Disast Med* 1995;10(1):43-47.
14. Center of Excellence in Disaster Management and Humanitarian Assistance. Civil-Military Relations. Available at <http://coe-dmha.org/civmil.htm>. Accessed April 2003.
15. Toole M: *Health Coordination in Emergencies: Options for the Role of WHO*. 1997. WHO Division of Emergency and Humanitarian Action, and the Macfarlane Burnet Centre for Medical Research, Melbourne.
16. World Health Organization, Department of Emergency and Humanitarian Action: *WHO's Core Commitments in Emergencies*. June 2001. Available from WHO/EHA, Geneva.
17. Task Force on Quality Control of Disaster Management: Health Disaster Management: Guidelines for Evaluation and Research in the Utstein Style: Executive Summary. *Prehosp Disast Med* 1999;14(2):43-53.
18. Bradt DA, Drummond CM: Rapid epidemiological assessment of health status in displaced populations—An evolution toward standardized minimum essential data sets. *Prehosp Disast Med* 2002;17(4):178-185.
19. Bradt DA: Ambon health situation report. August 2000. WHO Department of Emergency and Humanitarian Action Situation Reports for Indonesia (Maluku). Available at <http://www.who.int/disasters/repo/5853.doc>. Accessed May 2003.
20. Seiple C: *The U.S. Military/NGO Relationship in Humanitarian Interventions*. Carlisle Barracks, Pa: Peacekeeping Institute, Center for Strategic Leadership, US Army War College, 1996.
21. Report from a Roundtable on Humanitarian-Military Sharing. Good Practices: Information Sharing in Complex Emergencies. Worldwide Civil Affairs Conference. United States Institute of Peace, 2001. Available at <http://www.usip.org/virtualdiplomacy/publications/reports/11.html>. Accessed April 2003.
22. Cuny FC: *Disasters and Development*. New York: Oxford University Press, 1983.