

Information Seeking Behavior and Viewpoints of Emergency Preparedness and management professionals concerned with Health and Medicine

Final Report

Prepared for the National Library of Medicine

By

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Abstract

This is a study for the National Library of Medicine on information requirements for health-related issues in emergency preparedness, management, and response. Results are presented of a designed inquiry based upon returns of 34 professionals working in Emergency Management, Health Care, Academia, Libraries, and International organizations. The emphasis is on determining what sources are now used and what needs are unmet.

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Executive Summary

Introduction

A study for the National Library of Medicine (NLM) was conducted to assess the information requirements for health-related issues in emergency preparedness and response. The overall goal of the study was to identify the views of potential users about the most significant knowledge, information, and services they are seeking, some of which might be incorporated into the development of the Disaster Information Management Research Center (DIMRC) planned by the National Library of Medicine or into other related efforts.

The emphasis of the study was on determining the current information seeking behavior, existing preferred sources of information, and unmet information needs of professionals involved with the medical and public health aspects of emergency planning, preparedness, and response. The report summarizes responses to questions around the following topics: current sources, desired sources, organizing the information, examples of important materials and missing materials on the Web, librarian roles, information needs in extreme events, methods for dealing with information overload and organizing information, international issues, and level of experience with NLM resources. Detailed appendices include examples of grass roots efforts to mitigate information overload, a copy of the self report guide, a complete compilation of responses organized by type of respondent, and a list of international websites compiled by one of the respondents.

The study results address a full range of information needs, including the formal published literature, comprehensive databases for the management of specific types of disasters, practice-based documents that are typical of the gray literature, aids to developing and maintaining practitioner documents, and improved methods of organizing information of all types. Roles for librarians as well as disaster community experts were identified for enhancing access to important information at the time it is needed.

Methodology

Data collection took place during the period September to December 2007. Beginning with an initial list of expert informants identified by NLM and the study investigators, a “snowball” sampling technique was used, in which each expert was asked to suggest other appropriate participants in the study. Approximately 100 professionals involved in emergency preparedness and management were invited to participate. From this pool, there were 34 respondents representing emergency practitioners (7), health-related professionals (10), academics (7), librarians (3), and international professionals (7). All but three respondents provided their name, affiliation, and brief background information and are named as contributors in the report.

Although the initial design was for semi-structured interviews administered in person or by phone, the investigators found that the “on the spot” interview process did not obtain the detailed information about specifics of information seeking behavior that were

desired. The participants needed time to refer to their materials and reflect on their processes. The approach was therefore modified to solicit written self-reports in response to the set of questions, which yielded richer and more relevant information from this process than from the personal interviews. The methodology is thus most like the first round of a Delphi study, which uses written responses from groups of experts representing different stakeholders or roles. Three to five experts in a specific area are usually sufficient to cover the range of qualitative insights about a given issue or topic within their specialty. Like a Delphi, the objective of this study is “collective intelligence,” a body of knowledge and ideas that are richer than any that could be obtained from a single expert or a group of a single type of experts.

Findings and Observations

Currently used sources:

Respondents reported use of a diverse range of sources that they consider highly useful and important information for health-related emergency preparedness or response, with the diversity due partly to the varied specializations in particular types of emergencies. Current sources included primarily websites and journals, but other types of print resources were also identified. With the journal literature, there is a tremendous scattering of the literature over many different sources. Hundreds of web sites were mentioned, with little overlap. The most frequently mentioned was the CDC's <http://emergency.cdc.gov/> site, with eleven mentions. The next most frequently cited was the Department of Homeland Security general site or its Lessons Learned Information Sharing (LLIS) site, followed by Relief Web. The FEMA and Radiation Event Medical Management (REMM) sites were next, with three mentions each.

What's missing?

Users were also asked about desired resources that are currently lacking or are difficult to use. The practitioners were especially dissatisfied with their ability to get the current information they need, when they need it, and with the ability to know which resources are authoritative. In addition, practitioners, medical professionals, and academic researchers alike expressed the need for more practical, easy to understand information – “useful, real data on real-life emergency situations.” Examples included the need for more logistics and management information and for implementation information such as Standard Operating Guidelines and equipment lists. There were also requests for more websites similar to REMM, an “Event Type Information Portal” for radiation events, extended to other types of threats, for best practices summaries to inform about the best way to handle an event, for disaster related assessment instruments, protocols and intervention plans, and for disaster drill data. Other suggestions included more disaster planning and recovery information in the Go Local component of NLM’s MedlinePlus service, an all-hazard core Emergency Operations Plan (EOP) template for public health, and a coherent journal pulling together selected articles that focus on emergency preparedness and response.

Other needed resources deal with the “gray” literature that is not formally published and can exist in either print or web-based form, or both. Many respondents believe this type

of literature often contains the most up-to-date and most relevant content. Examples include forms, procedures reports or assessments, operations plans, databases of personnel and other resources, and “best practices” and case reports.

With respect to what is lacking in Web resources, again the responses were diverse, but there was a general feeling that there should be less guidance-related information and more information related to hands on assistance. There were several mentions of the need to use “new media” typical of Web 2.0 and use of cell phones to reach isolated, deep field populations. Needed materials included online training materials and courses; specific compilations of local best practices; actual plans for organizations such as hospitals and community service organizations, schools, and local agencies; and access to information on local response efforts, such as a list of shelters and first responders (with a role for GoLocal mentioned).

In actual emergency situations, participants provided examples of information that was needed but was difficult to obtain. One example dealt with displaced persons standing around the emergency room and not knowing where to go, illustrating the need for up to date information and action advice for a specific emergency and locale. The development of online templates that could be used in any specific disaster to facilitate compilation of such information was suggested. Another example addressed people wading through inches of ash with no information about toxicity and use of safety equipment such as respirators. In another case, physicians caring for people outside their areas of specialty not only needed access to medical and prescription records, but also to quality information health care information, including from previously unauthorized sites.

In extreme emergencies and crisis situations, the need for focused background information in advance of disasters was mentioned in terms of minimizing mortality and morbidity. This information includes baseline health indices, disease prevalence and vaccination coverage, ethnographic data on populations at risk, information on in-country NGOs and UN agencies, the country's disaster plan, logistics information, and in-country capacity for food, drugs, and supplies. Due to the unpredictability of emergency situations, respondents also reported that systems need to be flexible to the needs of rapid specialized information delivery, and the physical communications infrastructure for delivery of this fast breaking information must be considered.

Organization of information:

Regarding the issue of organization of information and methods used to find useful material, respondents emphasized the need to be able to obtain information that is relevant among an abundance of diverse and scattered resources. There is a general feeling that there is better information out there that they have not accessed, information that would enable them to do better plans, improve training, and make better decisions. A range of tactics to find useful, relevant material were reported, including restriction of inputs to limited sources with good filters; using material that has been vetted by trusted sources; relying on individual contacts; developing classification structures; and seeking specific types of information such as after action reports, reports of best practices, and

specific plans. Trust in sources and lack of cooperation or collaboration between different organizations or levels of government were reported as underlying problems. Many different sources are attempting to become the one source that everyone should go to for disaster information, and some respondents felt that this was not a worthy goal given the diversity of topics and problems that are involved.

Regarding ways to better organize resources to reduce the time needed to find useful new material, suggestions included having information specialists retrieve and synthesize relevant information, establishing integrative portals to quality sites for each type of disaster, expanded indexing, and classification systems with expert input, and community-based approaches to organizing material, including use of social tagging to create taxonomies.

Respondents were also asked about what they would like to see represented in an index or ontology of disaster preparedness and response. Ideas about various approaches to organization were offered, but the emphasis was less on the specific content, and more on the need for input from experts (including experienced emergency management practitioners) and for dynamic systems that can evolve to meet changing knowledge and needs.

Library roles:

When asked about current or potential roles of libraries, librarians, and information specialists, there was considerable support for the idea that librarians must become an integral part of the nation's emergency preparedness and response team. Among the suggestions for librarian roles were:

- creating and maintaining taxonomies with expert input;
- serving as a clearinghouse of knowledge concerning the different aspects of disasters;
- equipping libraries to access real-time emergency telemedicine networks;
- working with specialists to identify high-quality information;
- developing easy-to-use methods of delivering specific content;
- producing annotated bibliographies and syntheses;
- participating in call centers taking questions from the public;
- developing FAQs for local emergency preparedness and response and making them easy to locate;
- assisting in text and data mining,
- aggregating and compiling information to support public health decision-making;
- and sharing expertise with those in developing countries through an international network of librarians and archivists.

International issues:

Study participants were also asked about international considerations relevant for NLM. Cultural and language diversity were cited in the context of not relying solely on high tech solutions and the need for culturally appropriate information. Creating an international network that allowed librarians and archivists in developed countries to

share expertise with those in developing countries was also suggested. The need for a central point of decision support information was cited, much of which is currently obtained in an ad hoc fashion from various international organizations when a disaster strikes. Examples of ways in which such a resource could facilitate international disaster relief included more targeted intervention; effective stockpiling; geographical pre-positioning; better strategic decision making by senior managers, and improved targeting of rapid health assessments.

Regarding contributions that other countries could make to NLM, respondents reported an abundance of information such as local contingency plans, lessons learned, case studies, and best practices, but noted it is difficult to access, as many of these documents are either not in digital form or are held locally. By providing an example of open document collection, it was observed that NLM could work with other institutions in these countries to encourage and help them to share more widely, thus building recognition for their contributions. Additional specific suggestions included analysis of UN data on medical and public health impacts of disasters, and providing expertise on how to respond when high tech solutions involving use of internet and advanced medical technology fail due to emergency conditions.

Experience with NLM Resources:

Respondents were also asked about their prior experience with MEDLINE/PubMed or other NLM systems (e.g. WISER, REMM, TOXNET) to find information related to emergency preparedness or management. Many had praise for NLM's current services, yet others had limited experience, especially among the emergency practitioners. One reason suggested for their more limited use was the lack of information for immediate practical use in emergency response. The contributions and importance of NLM were acknowledged by one respondent in this way: *"It would be wonderful if the NLM were to be asked to join DHS as a full partner in preparing America for future disasters."*

Cooperation, Coordination, Integration:

In addition to the structured questions, respondents were given the opportunity to provide additional information or comments not addressed by the study instrument. Responses primarily dealt with major process issues that, at least indirectly, lead to problems in the information functions that are necessary to carry out various phases of emergency preparedness and management. These include lack of communication and information exchange between the medical and the community service operations; unclear roles and responsibilities of the federal, state, and local agencies with respect to degree of aid and recovery of the public; the need for improved cooperation and coordination among the various agencies; and more explicit treatment of ethical issues. Though the focus of this needs assessment was in the areas of emergency medical response and public health, the investigators also emphasize that the health and medical areas integrate with a great many other aspects of a disaster, making it difficult to consider issues in isolation from other concerns like infrastructure, living necessities, transportation, and logistics. At least half of the 34 respondents were involved in other areas of emergency preparedness and management.

1. Introduction

The overall goal of this study is to aid in determining the views of potential users about the most significant knowledge, information, and services they are seeking, some of which might be incorporated into the development of the Disaster Information Management Research Center (DIMRC) planned by the National Library of Medicine or into other related efforts. DIMRC should provide aid to practitioners, emergency responders, professionals, managers, and researchers concerned with any of the medical/public health aspects of Emergency Management and Preparedness.

We were asked to: "assist NLM in determining the current information seeking behavior, existing preferred sources of information, and unmet information needs of people (researchers, practitioners, volunteers, non-profit organizations, local communities, and local, state, and federal government agencies) involved with emergency planning, preparedness and response to disasters with potential or actual medical and public health consequences."

After describing the methodology, the respondents are all briefly described, so that the reader may understand the qualifications of the emergency response professionals who provided the information. Then responses to each of the questions we asked are summarized. Appendix C includes the full set of responses by each of the 34 respondents. This is a long appendix; however we encourage the reader to skim this and to read carefully any of the answers to particular questions that most concern them. Our summaries in the body of this report cannot convey the richness of the ideas and viewpoints and the diversity of interests and concerns in this area of emergency preparedness and management. For anyone seeking to set specific requirements or objectives the actual responses are necessary reading. For those seeking added sources of useful information there is a tremendous list of websites scattered throughout the comments. In addition one of the appendices (D) is a list of well described international websites.

A number of the respondents contributed information on actual activities they are involved with to help handle the information overload problem in this field. A number of these represent grassroots volunteer efforts to aid their fellow professionals in finding useful information. We have specifically included some of these as examples (Appendix A) to illustrate what is taking place. We summarize these (Section 5) after we provide an overview of the individual responses.

One of our respondents (Marv Birnbaum, Professor at the University of Wisconsin), provides us with a set of slides he produced for a presentation at WHO (World Health Organization) and we have incorporated these in the first of the examples section (Appendix A) with his permission. They focus on data which illustrates two important points that support empirically many of the views of the respondents:

- Even when considering just journals, there is a tremendous scattering of the literature over many different sources.

- The health and medical areas integrate with a great many other areas of concern in an emergency, so that it is hard to treat many of the areas in isolation from other concerns like infrastructure, living necessities, transportation, and logistics.

2. Methodology

Subjects- Our goal was to obtain information from a small number of expert informants in the various categories of emergency response personnel who might be the consumers and/or the providers of information for DIMRC. The categories that emerged through discussion with NLM and some initial participants in the study are:

- a. Emergency Response Managers (with some experience dealing with actual emergencies with public health components).
- b. Medical professionals (generally doctors) with some experience with large scale emergency medicine.
- c. Academics and librarians working in the area of health-related issues in emergency response and the information systems to support this response.
- d. International professionals in any of the above categories (or Americans focused on international activities).

An initial list of identified experts to be invited was developed by NLM supplying some names, mainly of medical professionals and librarians, and by our using our contacts through ISCRAM (Information Systems for Crisis Response and Management) and research in the field (mainly for categories a and d above). Invitations were sent by email, often followed up by telephone. In addition, this can be considered a “snowball” sampling technique, because each expert contacted was asked to suggest other appropriate participants in the study, and in many cases, sent an invitation to participate to their colleagues, at our request. This type of “snowball” sampling works very well in obtaining the cooperation of busy experts and increasing the response effort and rate.

A total of approximately 100 experts were contacted over the period of September through December of 2007. As of this report, we have 34 complete responses. A description of the participants follows. Most of them agreed to inclusion of their name and brief information about their relevant experiences in this report, while a few wish to remain completely anonymous.

Procedure- This study developed and used a new methodology which we tentatively name a “Networking Inquiry.” Initially, we developed an interview guide for semi-structured interviews, with the expectation that it would be administered face to face or by telephone. However, when we administered the first three interviews face to face, we discovered problems with this procedure. First of all, it took almost a full day to travel to the location of the experts, and administer the interview, which took approximately 1 to 1.25 hours. Secondly, transcription of these long interviews was a problem, taking about a day. But most importantly, the interview process did not obtain the detailed information about specifics of their information seeking behavior that we needed. The participants needed to be able to look through their bookmarks online and look up reference materials and think about exactly what sources they were using now, which is not possible with an “on the spot” verbal answer required. And, the personal interview,

while it developed rapport, tended to lead to stories of experiences during emergencies that were interesting and informative, but not really the topic of the inquiry.

Thus, we modified the interview guide slightly and turned it into a self report. The self report form for this guided inquiry is attached as Appendix B. Respondents were instructed, "If there is a question that does not apply to you or for which you cannot provide information, just leave it blank." On the other hand, they were requested to give detailed lists, including URLs for web sites, for the resources which they are finding most useful for emergency response management. Questions were dealt with through many email messages and phone calls. When a response was promised but not received within approximately a month, reminders were sent by email.

We obtained much richer and more relevant information from this process than from the personal interviews, and the respondents actually took less time, most completing in under an hour. The information supplied was already in the form of Word or HTML documents and required no transcribing. We call this a "networking inquiry" for two reasons. First, it used computer networks to gather the responses. Second, the sampling method took advantage of the professional social networks of the initially identified experts to obtain additional participants.

The logical next step in this process would be to take the numerous needs and requirements developed in this document to a larger group of respondents for evaluation with respect to relative value to the practitioner community. This would result in a full scale Delphi exercise.

Norman Dalkey's early Delphi experiments at RAND showed that three to five experts in a very specific area usually were sufficient to cover the range of qualitative insights about a given issue or topic within their specialty. More experts in the same effort usually led to duplication of insights rather than generating new insights. Our major categories of participants in this qualitative inquiry did satisfy those requirements:

1. Emergency Practitioners and Coordinators (7)
2. Health Related Professionals (10)
3. Researchers/Academics, Librarians (10)
 - 3.1 Librarians (3)
 - 3.2 Academics or Researchers (7)
4. International Professionals (7)
- Total 34

The remainder of the body of this report summarizes the responses to the questions asked, in the order in which they were asked. Appendix C gives the complete set of responses to each question, broken down by category of respondent (Emergency response managers, medical personnel, librarians, academic researchers, and international practitioners.)

3. The participants

List of respondents

For the purposes of this summary we have divided the respondents into four categories.

1. Emergency Practitioners and Coordinators

Those actively working in the field and involved in dealing directly with emergencies.

2. Health Related Professionals

Those working as professionals in the health and medical fields who have had some responsibilities and experiences in any phase of emergency preparedness and management.

3. Researchers/Academics, Librarians

Who are or have been working on topics related to emergency planning, management or response with medical or health concerns, but clearly the other two categories are not their primary function. They may also have done some work in either or both of the first two categories. We have noted two sub-categories: Librarians and Academics

4. International professionals

This includes both citizens of foreign countries and Americans who are involved in international emergency management activities, who may fit in any of the above 3 categories.

For each question we have grouped the answers to a given question into one of the categories. This may provide some insight into some of the responses but there are cases of overlap between points made among the four groups.

In the following list when names are given, the respondent gave permission for identification as a participant/ contributor to this study. In some cases anonymity has been preserved due to a request from the contributor.

1. Emergency Practitioners and Coordinators

Gregory T Banner, Regional Emergency Coordinator, Region I (New England), US Department of Health and Human Services

Involvement with 911, Katrina, Anthrax, Station Nightclub Fire, Micoplasma Pneumonia outbreak, and others.

John Cizbe, Emergency Planner, Alexandria Health Department; Previously Vice President, Disaster Services, American Red Cross.

Ken Curtin- Currently with FEMA as Voluntary Agency Liaison. There are two parts of the job. One of them is, to try to promote the formation of VOAD, Voluntary Organizations Active in Disasters. Mr. Curtin started working for the Red Cross 35 years ago at disaster sites, for 17 years total. Five or 6 years for FEMA. The other 12

years he worked in international refugee and disaster human services— Catholic Relief Fund, Christian Children’s Fund, etc.

Geoffrey Hoare, Regional Preparedness Planning Coordinator, Domestic Security Task Force Region 3, Alachua County Health Department, Florida. Planning Section in FL Dept of Health regional response to Hurricane Charlie, 2005; Planning Section Chief, ESF-8, Alachua County (Gainesville) FL, remaining 3 hurricanes, 2005. Planning Section Chief FL Dept of Health ESF-8 Area Command for southern 6 counties of Mississippi in initial EMAC response to Hurricane Katrina.

Henry Straub- Project Manager for emergency management services at New Jersey Business Force Organization, which is a planning and preparedness organization for New Jersey businesses. In his current position the issues he has had to respond to include power outage in the Northeast United States, the Republican National Convention preparations, multiple fires and floods, multiple white powder threats, major preparedness exercises at TopOff, etc.

Erik R. Janus worked from 1999-2003 as an Environmental Scientist at the US Army Center for Health Promotion & Preventive Medicine. He assisted with technical aspects of long-term recovery phase response to the 2001 attack on the Pentagon. From 2003-2006 he was a Toxicologist with the Michigan Department of Community Health, where he assisted in preparation of agency response plans, including risk communication materials for chemical events.

David Dlugolenski is Senior Manager, Disaster Mitigation, The Port Authority of NY & NJ, Office of Emergency Management, Jersey City New Jersey. He coordinates all hazard mitigation related activities for the Port Authority. Serves as the WMD Training coordinator for the Port Authority of NY & NJ. Previously he was Emergency Management Director, Augusta-Richmond County, Augusta, Georgia.

Hal Newman is the founder and managing partner of TEMS Inc., the managing editor of Big Medicine, and the executive director of the National Emergency Management Resource Center. Websites: www.nemrc.net www.bigmedicine.ca, www.chaosprevention.com. He was a team leader on the NOD SNAKE project that examined the impact of Hurricane Katrina on members of the special needs communities in the Gulf states. He was also part of the effort led by the Southern Christian Leadership Center and the Institute for Public Affairs of Montreal to create an international network to effect relief in the wake of Hurricanes Katrina/Rita.

2. Health Related Professionals

Lewis Goldfrank, MD, Chairperson of the Department of Emergency Medicine at NYU. Numerous R&D efforts, as well as Committees and participation in numerous NYC disaster responses.

Andrew Milsten, MD, Chair of the ACEP (American College of Emergency Physicians) Disaster Medical Section; multiple roles over the years. Anne Arundel County Fire

Department – assistant medical director; Maryland Expresscare – Assistant Medical Director; Mass gathering event planning – marathon, concerts, football games.

Ann E. Norwood, Senior Policy Analyst, HHS/ASPR, Associate Chairman, Department of Psychiatry, USUHS. Experience with Desert Storm, Hurricane Andrew, 911, and Katrina.

David Gruber- Working from present back, he is Senior Assistant Commissioner of Health Infrastructure Preparedness and Emergency Response at the New Jersey Department of health and Senior Services. Prior to that he was Assistant Commissioner for the same role and prior to that Executive Director. Just prior to that he was with Dallas county Department of Health and Human Services in Dallas, Texas as a senior planner for Emergency Preparedness. And then prior to that he was with the Navy working with chemical, biological warfare and intelligence related to this area

Eric K. Noji, M.D., Counsel, Office of the Secretary of Defense for Health Affairs, the Pentagon. 25 years in emergency health preparedness and management field, mostly at the Centers for Disease Control and Prevention and the World Health Organization.

Norman Coleman, Senior Medical Advisor, Office of Preparedness and Emergency Operations, Assistant Secretary for Preparedness and Response, HHS. Three years, participation in at least 6 national emergencies and exercises.

Anonymous, Senior Medical Advisor, National Institutes of Health.

James M. Rush, President, MEDLOG Inc.

Prior Experience includes:

- Served the Federal Emergency Management Agency (FEMA) as a healthcare medical logistics subject matter expert for the FEMA course, “Fundamentals of Healthcare Emergency Management, December, 2005
- Project Officer, National Bioterrorism Hospital Preparedness Program, Health Resources and Services Administration (HRSA) an Agency of the Department of Health and Human Services.
- Project Officer, National Bioterrorism Hospital Preparedness Program, Health Resources and Services Administration (HRSA) an Agency of the Department of Health and Human Services.

Peter G. Goldschmidt, President, World Development Group, Inc.

Dr. Goldschmidt is an expert in public health systems and policies. He is both an MD and PhD in Public Health. He has been responsible for a significant number of major policy studies in Healthcare.

3. Librarians and Academics or Researchers

3.1 Librarians

Anonymous: Librarian who assisted in Katrina and serves as an electronic resources librarian in a major metropolitan area.

Deborah Halsted, Associate Director, Public Services and Operations for the Houston Academy of Medicine – Texas Medical Center (HAM-TMC) Library. Responsible for Disaster Planning for the Library. Author of "Disaster Planning: A How-To-Do-It Manual for librarians" Neal-Schuman publishers 2005.

Kristine Alpi, Associate Library Director, Weill Cornell Medical College, responsible for library's emergency plan. Former library manager for NYC Department of Health and Mental Hygiene, worked on information support for various health emergencies including 9-11 and creation of a World Trade Center Registry.

3.2 Academics or Researchers

Ann Fruhling, PhD, Assistant Professor
Project Director and Designer for STATPack, Nebraska R&D effort in use in Nebraska, Oklahoma, and Kansas (on site and networked medical diagnostic testing in emergencies)

John R. Harrald, Professor and Director, Institute for Crisis Disaster and Risk Management, George Washington University. Editor of a Journal in Emergency Management and many years of research in the area.

Irene Jillson, Ph.D., Assistant Professor, Georgetown University School of Nursing and Health Studies. Teaches complex emergencies with a focus on international emergencies and the roles and responsibilities of public and private sector entities in situ as well as international, regional and bilateral donors and relief agencies.

Julie Dugdale, Ph.D. 2006 – present, researcher with MAGMA-LIG (Multi-agent systems team - The Grenoble Computer Science Laboratory) and Lecturer in Artificial Intelligence at Grenoble 2 University, France. 2003 – 2006 Visiting Researcher at IIMH-LIG (Human computer Interface Team, LIG, Grenoble, France). Specializes in simulation and emergency management.

Firoz Verjee, Senior Research Associate at the Institute for Crisis, Disaster & Risk Management, George Washington University, and a full-time project consultant to the International Activities Office of the National Oceanic & Atmospheric Administration's National Weather Service. For over 15 years he has specialized in the application of remote sensing and GIS, primarily within the fields of disaster risk reduction and humanitarian assistance. Between 1995-2000, Dr. Verjee represented the Canadian Space Agency's RADARSAT program in Asia, expanding the use of RADARSAT technology for locust monitoring (India, Kazakhstan), food security (India, Iran, China, North Korea, Japan), flood impact (India, Pakistan, China, Bangladesh, Vietnam), cyclone impact (India, Bangladesh, Taiwan, Japan), oil spill tracking (Singapore, Japan, Taiwan), wild fires (China, Mongolia) & national security (numerous Asian government agencies). He

is currently authoring the *GIS Tutorial for Humanitarian Assistance* (to be published by ESRI Press in late 2008).

Valerie I Seefried, MPH, Research Associate & Doctoral Candidate at GWU Institute for Crisis, Disaster & Risk Management (ICDRM); 2004-present; previously Program Coordinator for Homeland Security & Resilience Program – Royal United Services Institute, London UK.

Marv Birnbaum is a Professor at the University of Wisconsin, and Editor, Prehospital and Disaster Medicine; President, World Assn for Disaster and Emergency Medicine; Medical Director, Madison Fire Department; Co-chair, Wisconsin State EMS Board

4. Internationally Oriented Contributors

Anonymous, many years of practical experience in the management and design of Humanitarian Information Systems

Hans Zimmermann - Director, Policy and Development, The International Emergency Management Society (TIEMS);

- International Coordinator for Emergency Communications, International Amateur Radio Union (IARU);

- Chair, International Chapter, Cellular Emergency Alert Systems Association.

Previously served as:

- Senior Humanitarian Affairs Officer, United Nations Office for the Coordination of Humanitarian Affairs (UN/OCHA);

- Chair, UN Working Group on Emergency Communications (WGET).

Tanja Pekez-Pavlisko MD, Croatia, Medical director ITLS (International Trauma Life Support, itrauma.org) chapter for Croatian information.

Mario Kopljar, MD, MSc, General surgeon, with duties in surgical emergency operations, member of Croatian chapter of ITLS (International Trauma Life Support, itrauma.org)

Albert Simard, Project Manager, Modeling Framework, developing a modeling framework for the Canadian Food Inspection Agency. Previous:

- Director, Knowledge Strategies – Natural Resources Canada
- Director, Knowledge Management – Canadian Forest Service

Concurrent with above

- Chair, Executive Committee – Global Disaster Information Network

Geert Gijs, Process Manager Incident & Crisis management, Emergency Planning and Disaster Relief Operations, Federal Public Service Health –Belgian Government. Also, Chief Coordinator B-FAST- Federal Public Service Foreign Affairs. International Emergency Management and Disaster Relief, 1999 till present, with emergencies including:

2000 – Earthquake: Turkey Field Hospital – IDP camp– Dep. Coordinator

2001 – Earthquake: India – Field Hospital – Team leader - Coordinator

2003 – Earthquake: Algeria – B-FAST USAR – Head of Mission
2004/2005 – Tsunami: Indonesia – Thailand
HQ Coordinator B-FAST – DVI – Field Hospital – IHP Support
2005 – Earthquake: Pakistan – B-FAST Field Hospital – Head of Mission
2006 – Floods Romania – HQ Coordinator Public Health
2006 – Floods Surinam – UNDAC – Operational assessment and coordination
2007 – Floods West Africa – Ghana – UNDAC Deputy Team Leader

Dr. Jayanth G Paraki, Independent Research Scientist in Knowledge Management with Telemedicine as one of the key focus areas. Began a global campaign to mobilize support for Telemedicine in Disaster Management in 2001 with a paper at the 6th International Conference on Medical Applications of Telemedicine at Uppsala University, Sweden. Now holds the Editor-in-Chief position at IGI Global Pennsylvania for a new book series in Advances in KM in Telemedicine.

4. Summary of Responses by Question

Question 2: Current Sources of Information

The question asked was:

2. What sources do you currently consider as highly useful and important for emergency preparedness or response missions with medical or public health implications (e.g. including journals, organizations, websites, books, reports, plans, training materials, services, etc).?

The diversity of sources listed is very great, with some respondents sending us lists or links to hundreds of sources. The only sources that are mentioned by a substantial number of respondents are web sites. Figure 1 profiles the leading three websites, mentioned by at least four of the respondents. The CDC website is by far the most frequently mentioned (11 times, explicitly). This is followed by five mentions of LLIS or a generic “Dept. of Homeland Security” websites. The third most frequently mentioned, especially by international professionals, is Relief Web. Interestingly, FEMA does not make the top three; it is “tied” with REMM, with three mentions (Radiation Event Medical Management- <http://www.remm.nlm.gov/>).

One reason why there is such a diversity is that emergency professionals tend to “specialize” in one type of emergency; so, for instance, those involved with nuclear and radiological incidents will want to go to REMM, while those involved with infectious diseases will choose other websites and sources,. Thus, the types of journals and other non-web sites mentioned are especially diverse. We encourage the reader to at least skim the richness and diversity of the answers to this question in Appendix B. The fact that the most frequent website is only mentioned 11 times out of the 35 respondents is further testimony to this.

Figure 1 gives more details on the “Top 3” web sites mentioned.

Figure 1

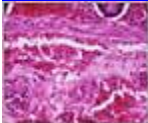
Description of the Three Leading/ Most Frequently Mentioned Websites Related to (Health/ Medical) Emergency Preparedness and Response

1. CDC <http://emergency.cdc.gov/>

This is part of the CDC site devoted to all kinds of emergency medicine information, as shown below in the main page.

Agents, Diseases, & Other Threats

[Bioterrorism Emergencies](#)



[Anthrax](#)
[Brucellosis](#)

[Plague](#)
[Tularemia](#)
[More](#)

[Mass Casualties](#)



[Burns](#)
[Explosions/blasts](#)
[Injuries](#)
[Preparedness Tools](#)
[More](#)

[Chemical Emergencies](#)



[Chlorine](#)
[Nerve Agents](#)
[Ricin](#)
[Toxic Alcohols](#)
[More](#)

[Natural Disasters & Severe Weather](#)



[Floods](#)
[Winter Weather](#)
[Hurricanes](#)
[Wildfires](#)
[More](#)

[Radiation Emergencies](#)



[Acute Radiation Syndrome](#)
[Dirty Bombs](#)
[Nuclear Blast](#)
[Polonium](#)
[More](#)

[Recent Outbreaks & Incidents](#)



[Salmonella](#)
[Bridge Collapse](#)
[Asbestos](#)
[Botulism](#)
[More](#)

A notable feature is that it has separate pages for the general public and for the medical professional, e.g.: when one of the emergency types is chosen, the information is then broken down as below.



Bioterrorism

Specific Bioterrorism Agents

- [A-Z List of Agents](#)
- [List of Agents by Category](#)

Info for the General Public

- [Overview](#)
- [Agent-Specific Fact Sheets](#)

Info for Professionals

- [Case Definitions](#)
- [Training](#)
- [First Responders](#)
- [Lab Info](#)
- [Surveillance](#)
- [Preparation & Planning](#)

Related Resources

- [State & Local Health Departments](#)

2. Lessons Learned Information Sharing System (www.llis.gov)

LLIS.gov is a national on-line network of lessons learned and best practices designed to help emergency response providers and homeland security officials prevent, prepare for, respond to, and recover from all hazards, including terrorism. The central component of LLIS.gov is a collection of hundreds of peer-validated lessons learned and best practices.

It also serves as a central repository of relevant government homeland security documents and events. The system is frequently updated with new reports and publications intended for homeland security personnel.

3. ReliefWeb www.reliefweb.int

This is the global hub for time-critical humanitarian information on Complex Emergencies and Natural Disasters. It is indexed by country/ location of current emergencies.

Question 3: Desired Sources

The first part of this question asked was about **general** needs:

3.a. For emergency preparedness or response missions with medical or public health implications: What useful resources, services, or types of information are now missing or difficult to access or use, that you would like to see more readily accessible to all concerned? (Either for a specific type of medical disaster such as a pandemic flu, and/or for general health aspects of emergencies; i.e., disease outbreaks after hurricanes or earthquakes).

The practitioners were especially dissatisfied with their ability to get the current information they need, when they need it. As one emergency management professional put it: "I think the problem is not resources, it is finding the right ones and then knowing which resources are authoritative. A web search on any given topic will likely turn up multiple resources." Another emergency manager described specifics related to this as "Easily accessible lists of potential contractors sorted by actual (rather than professed), proven areas of expertise; coherent journal pulling together selected articles that focus on emergency preparedness and response from a wealth of sources (e.g., public health-related journals) in which those articles may be buried."

A third noted that an unmet need is "Information about what other organizations are doing. What supplies, equipment, medications and personnel are "in the pipeline" on route to a disaster scene. Unfortunately, we are still depending on traditional (read: antiquated) means of communication." A fourth wants more "Disaster 'After Action Reports', especially where lessons were NOT learned and the same deficiencies were present over time." This need for the "nitty gritty" details are also expressed by a fifth practitioner: "What FEMA planning course calls "implementing information" Standard Operating Guidelines (SOGs), equipment lists, job action sheets, MOUs (Memorandum of Understanding). There is a lot of clinical information, much of which is redundant, and not enough logistics and management info (by comparison)."

The phrase "easily accessible" includes the need for medically related information in a form comprehensible by the layperson. A practitioner dealing with radiation and nuclear related emergencies noted, "Rad/nuc info is difficult to aggregate and find. Needs to be made intellectually accessible to those without radiation expertise. Using multimedia helps as this area is very technical."

The themes raised by medical professionals are quite similar in that they focus on "practical," easy to understand and use information and resources. For instance, one notes:

"I think that websites such as REMM that are vetted by experts and provide rapid access to what you need to know in order to manage a certain event are terrific. It would be ideal if there were similar one-stop-shopping sites for other threats. They would need a point person or two to communicate with experts to update the latest information and delete outdated recommendations."

A second medical professional wants “best practices with summaries if I wanted to know what the best way to handle an event is.” Another medical professional wants:

A database with Disaster related instruments:

Pre Disaster HVA (Hazard Vulnerability Assessments) instruments.

Psychosocial Assessment tools

Post Disaster Response Assessment instruments.

A database with National/State/City protocols and intervention plans

A data repository with National/State/City disaster drill data

A centralized data repository with raw data published or research in progress.

A variation on this theme of need for practical information is contributed by a librarian, who says, “I would like to see more disaster planning and recovery information in Go Local. NLM could input national resources and local projects could input regional data.” An academic researcher states, “An all-hazard core Emergency Operations Plan (EOP) template for public health is missing.” Another researcher states, “The main problem for me is finding useful, real data on real-life emergency situations.”

In other words, the kinds of resources needed but not available now deal not with published literature, but with information, particularly about procedures and tools to support these procedures, that must be contributed, gathered, and vetted by peers who are actually on the “front lines” of emergencies, rather than by medical researchers. An international participant refers to this as “how to access the “grey” (unpublished) literature. It often contains the most up-to date and most relevant content.” If one uses “literature” to include the forms and procedures reports, the operations plans, the databases of personnel and other resources, and the “best practices” and case reports mentioned above, “grey literature” summarizes what is missing now.

Specific examples were then requested as follows:

3.b. Can you give one or two specific examples of emergency situations or preparedness phases in which information was needed but was difficult to obtain?

Two practitioners referred to missing information after 9-11. One described people who had been evacuated from their apartments hanging around hospital emergency rooms, because they did not know where else to go, and the personnel at the emergency rooms had no suggestions for them: “The need that I know of for health services professionals to understand the needs of the patient for broader help, for human services... what if they are being discharged and they have no home to go to?” He also stated that more generally, “every disaster large and small needs a complete and accurate guide as to where you, in this disaster, can get help and information you need,” specific to that disaster and that location. Online templates and related information could be provided to help to put together that information for any specific disaster. The second referred to wading through inches of ash two days later and thinking it was probably toxic, that people should have respirators on, but nobody had issued bulletins about this.

A librarian who worked with Katrina victims noted, "Following evacuation of New Orleans after Hurricane Katrina, health professionals and first responders in shelters in Houston had a great need for health information immediately. Pediatricians were caring for senior citizens; psychiatrists were caring for gynecology patients. No one had their medical records, or prescription records with them. Access to quality information at a previously unauthorized site (Astrodome, George R. Brown Convention Center) was needed immediately."

In other words, what is missing in specific situations is up to date information and action advice about that specific emergency and locale. One practitioner states, "In the early phases of an event when one is totally dependent on media reports, the situation is so fluid that any information is either wrong, or out-of-date by the time you get it. Need to improve rapid assessment of needs (data for decision making, actionable threat awareness)." An expert in biological terrorism echoes this sentiment: "A confirmed biological event at any major transportation facility requires access to real time information in order to assess the public health risk and start the recovery process."

Question 4: Organizing Information, Knowledge or Wisdom

4.a. What sort of methods or methodologies (e.g. specific search engines, trusted sites, organizations, other peer recommendations, email lists, filters, indexes, etc) do you use now to find useful material and/or to avoid information overload?

Clearly information overload is a problem faced by just about everyone in this field. As one international contributor puts it, "Just as it is important to be able to obtain information; [it] must be relevant. This emphasizes the need for ..."peer-reviewed materials that do not necessarily have to be present in a journal form (peer-reviewed web sites may do fine e.g.)"

This results in an extreme range of tactics for coping:

- Restrict inputs to only a few sources.
- Stick to only material which has been vetted by others that are trusted in the area of emergency preparedness and management.
- Seek push type sources with good filters on what is sent out.
- Seek contact with individuals based upon their experience and background in the area
- Rely on grass roots (free) type sources, people in the same area acting as individual "gatekeepers" or as a "team." Providing Web based information or as active participants in useful message list servers.
- Seeking process model structures as a way to get organized and well classified information (single index items inadequate)
- Attempts to develop morphological structures to classify data by the underlying fundamental dimensions.
- Seeking up to date information that is clearly defined in that manner
- Seeking specifics such as after action reports, reports of best practices, specific plans

We have drawn a number of examples in Appendix A of this report that include some grassroots examples. While there have been some of these efforts in existence since 9/11 it seems to have mushroomed since Katrina and some of the major international disasters.

While many are coping with the problem and have established a workable approach for their situation, it is clear they are suffering the stress produced by the "opportunity costs" they are encountering. There is a general feeling that there is better information out there but they are not aware of where the specific things they need or should need are or what they are and how they can find them when their responsibilities and duties leave them little extra time. Can one do better plans, improve training, and choose better actions or decisions based upon some information or wisdom that is somewhere but which they have not accessed?

Trust in sources and things like the lack of cooperation or collaboration between different organizations or levels of government is also an underlying problem. When organizations do not feel, for whatever reason, they can expose their mistakes and seek to eliminate them through integrated efforts then there is no way the improvements can be made to create an HRO (High Reliability Organization) among all the diverse groups that must be involved in the integrated planning, training, responsiveness, or recovery processes of an emergency or disaster situation.

A lot of different sources are attempting to become the one source that everyone should go to for disaster information, and this is not a worthy goal given the diversity of topics and problems that are involved. What it is doing is making it more difficult for many people to solve their information overload problem and/or raising opportunity costs to them personally and emotionally.

4.b. Are there ways or methods you would like to see material in this area organized, indexed, clustered, processed, and/or filtered that would make it easier for you or others to recognize that something new might be of use to you or others in this area? Or, what would you like to see done to cut down the time to find useful new material?

These two quotes summarize it well for the practitioner:

"Unfortunately I have found that it takes somebody knowledgeable (me) to go through all the various resources and pull out what is useful. I also am a generalist in terms of interest in all things medical/public health, with a strong interest in everything else available in the homeland security field. Many, many, many organizations are trying to be the "be all and end all" of an information source and none are really succeeding at this point.

Using the SNS (Strategic National Stockpile of medical resources) list serve as an example, there are so many submissions that it is tempting to read none. Somehow

they need to be categorized, and it needs to be possible to unsubscribe to portions of a list serve or to filter in what you would like to receive."

It is clear they feel the need for experts that are devoted to the information classification problem that goes beyond the abilities of a general reference librarian. It would seem to say that librarians need to develop systems where the expert-users can make recommendations on the quality and content of the items be covered if in fact one is going into the gray literature. Clearly a lot of what actual practitioners want is the gray literature. Even the professional vetted journal literature differs considerably in the relevance to a particular situation and this is important to many of those in positions of management or practitioner experts. Clearly there is no time to hunt down needed materials in the actual disaster phase.

"Basically, a "documentalist" who will retrieve only the relevant information on behalf of the users. Will also need an expert such as an epidemiologist to consolidate data from a variety of sources, formats etc... and most importantly to synthesize information."

There seems to be a feeling that in some ways too much guidance on what to do and not enough focused help is being generated on how to do it.

"Yes. Universities, Institutes and the Federal Government need to provide consulting services (often referred to as technical assistance) to Grant Awardees and other governmental and Private Sector Healthcare entities. We need less guidance and much more hands on assistance."

There are repeated assertions elsewhere that the official documents often have no common internal framework relevant to the emergency community and this makes it difficult in dealing even with the official material. Considering the wide range of agencies and contractors involved this has a ring of truth to it. However, in some areas, like dealing with emergencies like pandemics, we have not had much experience with it might be too soon to try to impose such standards.

Setting up a separate integrative portal for each type of disaster was suggested and might be a worthy goal if it truly allowed cooperation and collaboration among different vetted professionals and organizations in compiling and judging the quality of the material. Note that users seem to want a much more hands on collaboration for contributing and evaluating material.

"I would like to see more community-based approaches to material, particularly using social tagging to create a more grounded taxonomy – the one we currently have is heavily predefined by the Cluster system. An aggregator of academic publications that might be useful in disaster response, from a range of journals in different topic areas, would be very useful in helping the humanitarian community to access this expertise – at the moment; it's just too difficult and costly for us to stay up on current research."

"You may wish to consider Google's approach and/or folksonomies or tagging. There's a couple of really fascinating videos on YouTube that talk about Web 2.0 and organizing information. One on the Information Revolution and the other on Web 2.0; both are by Michael Wesch. If you haven't seen them, you should. Unfortunately, our IT security people have deemed both YouTube and Facebook to have no valid business purposes, so I can't simply send you the URL."

From the examples we have collected via our participants it is clear the users are anxious to help one another as a community of practice and in the emergency field this trend is going to continue unless they are brought in as an active part of the formal systems that seek to support them. Once again, a lot of the examples in Section 5 and Appendix A are free and based upon efforts of unpaid volunteers.

Question 5: Current outstanding examples or missing materials on the Web

5.a. Are there any other specific medical, health care, public health disaster plans or training materials or web based resources that you consider outstanding examples of such material?

There is a "grab bag" of suggestions in this section, but many simply repeat sources already mentioned in question 3, such as CDC and REMM. However, there are several mentions of the need to use "new media" typical of Web 2.0, e.g.:

"Internet 2.0, Wiki, Blog, Forums, Social Networking, shared work spaces like Groove, use of cell phones to reach isolated, deep field populations (everyone on planet earth has a cell phone). Voxiva has taken the lead in the area of "Phones for Health" initiative with the Global GSM Alliance." Two experts mention how good Wikipedia is.

Online training materials and courses are mentioned, as well as Wikipedia, as being very useful for volunteers (fire departments and other community service organizations) and for local communities that do not have the funds (or access) for more costly sources of material.

Question 5.b. asks: What material not currently available on the Web would you like to see there?

The diversity of responses is similar to that for the first part of question 5. Some specifics that seem notable include:

Vital baseline health data (e.g., potential health risks in countries) and other focused background information in advance of disasters (e.g., large scale population movements, forced migration) to minimize mortality and morbidity from preventable causes such as measles and diarrhea diseases. This will require the identification of potential risk areas around the world for disasters, vulnerable populations, mass population movements, and

to target these countries for contingency planning and advance health information gathering.

Easy to find medical management for Chemical terrorism.

Specific compilations of local "best practices," actual plans for organizations such as hospitals and community service organizations, schools, local agencies so that practitioners can compare and evolve improvements in these areas relevant to their localities.

More online training for health related problems in disasters, aimed at potential first responders and others likely to be on site.

A librarian would like "Local response efforts (list of shelters, first responders, etc.) in the event of a major or even minor disaster. This is where I see a major role for Go Local."

Question 6: Roles of Libraries, Librarians, and Information Specialists

Question: What are the current or potential roles and/or services for Libraries, Librarians, and/or Information Specialists in any phase of the Emergency Preparedness and Response process? Are there other particular services a local or specialized library should or could provide?

Among the suggestions are:

- Creating and maintaining a taxonomy for my field would be a welcome contribution from the Library Sciences, so that as the body of knowledge and literature grows, it is usefully archived.
- A major activity would be to serve as a local, State, regional, national and international clearinghouse of knowledge concerning all of these different aspects of disasters.
- Foster the transfer of knowledge among the different stakeholders, and policy makers in order to improve society's resilience to disasters and other emergencies.
- Libraries must be equipped with real-time Emergency Telemedicine Networks. Sweden is the first country in the world to have a national infrastructure for Telemedicine. Librarians must become an integral part of the Nation's Emergency Preparedness and Response Team.
- A crucial need its just to keep track of plans and supporting documentation
- Continuing to work with specialists to identify high-quality information and developing easy-to-use methods of delivering specific content.
- Produce something like the National Center for PTSD (Post Traumatic Stress Disorder) newsletters in which a particular topic is explored and an annotated

bibliography is provided. It's very helpful for busy clinicians and others to get a quick overview.

- Participation in call centers taking questions from public – helping shape responses into understandable FAQs and making sure people can find them.
- They could be requested to assist in mining, aggregating and compiling information so that existing information can be easily analyzed by public health decision-makers and provide context for their decisions.
- It would be very useful to create an international network that allowed librarians and archivists in developed countries (where most of the resources are located) to share expertise with those in developing countries.

Question 7: Extreme Events

Question: If you had to consider an “extreme” but possible event (e.g. a pandemic, another Katrina, or a large earthquake) would this add additional information requirements relevant to any of the other questions on this survey?

One emergency practitioner gave a very complete set of special requirements for such crisis situations, including:

Particularly, "human generated" events (Chemical, blast, technological, transportation, radiological, nuclear emergencies etc) would require very specialized information requirements... including baseline health indices, diseases, in-country capacity such as the following:

- a. Health data such as:
 - epidemic risks
 - incidence and prevalence of communicable diseases and vaccination coverage
 - nutritional status
 - country health profiles and other public health information such as status of local health facilities and the availability of other material resources
- b. Basic ethnographic data on populations at risk of adverse health consequences from disasters. This could include some medical anthropology data so that health programs and interventions could be made more culturally acceptable.
- c. Database of in-country NGOs, UN agencies, and their resources (this may include many development organizations, but many of these may also have emergency relief capabilities). Ideally, this would include list of key individuals and points of contact information but such information may change too often to be readily kept up to date.
- d. Description of the country's disaster plan, if any. Specifically, this would include what ministries, etc. are responsible for preparing for and responding to emergencies.
- e. Organization of health professional training in the country of origin.
- f. Logistics: warehouse capacity, availability/price of gas/diesel, air/road access, telecommunications (e.g., availability of landline phones, mobile phone cells, electricity), etc.
- g. Local and regional laboratory capabilities for identification of causative organisms and antibiotic sensitivity testing, drug resistance (e.g., to chloroquine)

and nearest reference labs for cholera, shigella, etc. If not available in-country, should note guidelines for transport.

h. In-country production capacity for and availability of drugs, jerry cans, cooking kits, etc.

i. In-country availability of food stocks

This type of information simply is not available now. Much of it is not “medical” per se but all of it relates to public health issues after a massive disaster.

There are systems design implications of the fact that many large scale events, especially those that may be caused by terrorists, are not only unpredictable, but often “unimaginable” ahead of time. Thus, as another emergency practitioner notes, “I think it is important to recognize that the future is uncertain and hard to predict and that systems need to build that are flexible to the needs of rapid specialized information delivery.” In addition, the physical communications infrastructure for delivery of this fast breaking information must be thought about: “What level of web traffic can the best, trusted sites handle? If they can’t handle the load, where do they redirect? If we lose Internet, how to disseminate information? If schools are closed, librarians with families are not available to fulfill their roles, unless library planning incorporates school planning. Is there hazard pay for staying in an area deemed at risk?”

Question 8: Your critical topic areas

In terms of creating an index (general ontology) out of a sample document database that can then be used to automatically classify new information as it occurs, what would you want included in such a database and what specific topic areas would you want to see in the resulting index or ontology?

This is a question that may be very difficult to answer based upon cognitive differences. Those who are able to deal with abstraction usually have a better chance of conceptualizing a more complete specification of terms as opposed to those who deal better with data specifics and are very oriented to specifics. Both types of problem solving processes are represented.

We had a wide range of responses from one single term to thirty eight terms in a two level hierarchy. A significant variety of types of emergencies are represented. There is recognition that the dimension of terrorism introduces the possibility of risks that create medical problems that are the common ones that medical and health care professionals may be familiar with in a given locality. Hence the need, as expressed, elsewhere for very selective retrieval capabilities. The need for great precision in finding material is quite clear in an emergency situation. Here is an example of one of the more detailed lists suggested as one respondent’s areas of concern:

1. General Concepts
 - a. Basic physics of disasters
 - b. Triage
 - c. Pediatric considerations

- d. Infectious diseases
- e. Pharmaceuticals
- f. Critical Incident Stress
- g. Complex Humanitarian Emergencies
- 2. Disaster Response Planning and Coordination
 - a. Disaster planning
 - b. EMS in disasters
 - c. Public health in disasters
 - d. Urban Search and Rescue
 - e. Federal Disaster agencies and response (CDC, DMAT, DHS, VA etc..)
 - f. State and local disaster agencies and response
 - g. Communication and information technology Tools
 - h. Managing disasters in austere environments (including Wilderness EMS)
 - i. International level response, planning & coordination
 - j. Incident Command System
 - k. Disaster Drills
- 3. Natural Disasters
 - a. General information
- 4. Infectious disease epidemics / pandemics
 - a. General info
 - b. Planning / response / coordination
 - c. Local / state / federal level
- 5. Industrial, Technologic and Transportation Disasters
 - a. Radiation accidents
 - b. Hazmat-related disasters
 - c. Mass gatherings
 - d. Maritime disasters
 - e. Air crash disasters
 - f. Fires and mass burn care
 - g. Internal hospital-related disasters
- 6. Conflict-Related Disasters
 - a. Conventional terrorist bombings
 - b. Nuclear detonations
 - c. Intentional chemical disasters
 - d. Biologic weapon agents – including vaccination information
 - e. Tactical EMS
 - f. Mass Shooting
- 7. Education, Training, and Research
 - a. Education and training
 - b. Research
- 8. Personal accounts from deployments
- 9. Disaster Medicine Resources / References

Over time changes have occurred and every large scale disaster introduces new problems we did not think about before, with Katrina and 911 being prime examples. The emergency of the pandemic as a new risk requires not only new terms to represent new

problems to be addressed but also the necessity of integration of other dimensions of concern over extended periods of time. All the supporting infrastructure and logistic maintenance of normal consumable resources cannot be separated from the medical situation. This is evident for a short time scale of weeks in Katrina but in a true pandemic this might be years, both for the disaster phase and the recovery phase of an emergency.

This need for dynamic changes in the indexing of information is evident in the following quote from the contributions:

" Whatever ontology is created by librarians is unlikely to be used by contemporary practitioners. Authors won't use it because they are forced to fit their work into categories that never quite fit. Searchers won't use it because the term that they are using isn't the same one that the author used. One only has to observe that of all the ontologies created by librarians to date, why are none of them used by any of the popular Web search engines???"

The above change in terms due to a better understanding over the long term is further complicated by the change in the required information over the phases of emergency preparedness and management.

"Perhaps classified in terms of information useful before, during, and after a disaster. That which is useful for education, clinical care, research, recovery, reconstruction etc."

Whatever the process there has to be allowance for change and knowledge structures that can evolve to meet changing needs. In terms of current technologies this means some combination of automation and direct involvement of the expert users themselves to be the source of new classification requirements.

Question 9: International Considerations

Question: The national Library of Medicine has an important role in aiding other countries in the accumulation and dissemination of medical information and knowledge.

9.a. What specific contributions in the above disaster information areas might be important for NLM to provide internationally?

One international contributor notes, "NLM has to project itself as an International Repository for Disaster Management and allow the United Nations to foster a program of affiliation with all Member States."

Cultural and language diversity were noted by several contributors, e.g., "I think there would need to be special efforts to include information that is useful to developing countries that doesn't rely on high tech solutions that we have in developed countries. A lot of care would also be needed to make it culturally appropriate. Last, but in many ways first, it would need to entail a dialogue with stakeholders to see what – if anything – they would like from such a resource."

Another suggested, “I think it would be very useful to create an international network that allowed librarians and archivists in developed countries (where most of the resources are located) to share expertise with those in developing countries.”

And one practitioner gives a very detailed set of requirements, noting that “Normally, when a disaster strikes, we frantically call various international organizations such as WHO, UNICEF, IFRC, ICRC, OFDA, NGOs, and contacts in various other organizations to obtain decision support information... One stop shopping approach (would) both enable and save time.

If NLM can more or less provide such a service, international disaster relief may become more effective because we would be able to achieve the following:

- (a) - more targeted intervention instead of the present stereotypical cookbook approach
- (b) - effective stockpiling
- (c) - geographical pre-positioning
- (d) - improved targeting of rapid health assessments
- (e) - briefing or orientation packages for staff deployed to the field
- (f) - knowledge of key players, roles and coverage for improved operational coordination
- (g) - better strategic decision making by senior managers
- (h) - provide an entry point for relevant expertise at NIH, CDC, HHS, FEMA and other organizations where necessary

By facilitating more efficient targeting of response, NLM will contribute to more efficient use of shrinking funds for international humanitarian assistance.”

9.b. What contributions from other countries could be made to NLM in the disaster information area? This could include important information sources in other countries not traditionally used in the U.S.

As one contributor states,

There is a lot of material in other countries – local contingency plans, lessons learned, case studies, etc – but it is difficult to access as many of these documents are either not in digital form or are held locally. By providing an example of open document collection, NLM could work with other institutions in these countries to encourage and help them to share more widely, thus building recognition for their contributions. “Best practices and “lessons learned” documents from the international community for emergency events would be a big boon to the entire global emergency management community.”

Specific suggestions include:

Analysis of data collected by UN (WHO, OCHA) on medical impacts of disasters, public health issues etc. World Bank and UN have studied this more than the US has.

One of the great things developing countries could teach us is how to respond if all our high tech solutions (internet, advanced medical technology) fail such as if there were large blackouts or in events like a large earthquake, etc.

Best practices and “lessons learned” documents from the international community for emergency events would be a big boon to the entire global emergency management community.

Question 12: NLM experience (if not mentioned in prior answers)

Question: Have you ever used MEDLINE/PubMed or any other NLM system (e.g. WISER, REMM, TOXNET) to find information related to Emergency Preparedness or Management? If so characterize your experience and reaction.

Many of the contributors had great praise for NLM current services, e.g.:

“All of them. They’re terrific. The gold standard.”

On the other hand, especially among emergency rather than medical practitioners, one sees comments such as “I know most of them exist but have not used them more than just looking once or twice.”

This is probably because the current databases are not really oriented towards “gray literature” of practical use in emergency response, e.g., “I use MEDLINE very often but predominantly to find scientific or clinical articles to supplement my work. There is very little information related to public health management or public health emergency management. My experience has been similar with PubMed. “

The responses to the “other” question at the end are so scattered that finding major themes is not possible. However, we close with a quote from question 14 on “Anything we left out?”

“It would be wonderful if the NLM were to be asked to join DHS as a full Partner in preparing America for future disasters.”

It is clear there is a general feeling of information overload among those in this field and the possibilities of improved library oriented professional help would be welcome.

Question 13: Anything we left out

Please add any other information or comments that you think we should have asked for or any questions that should be added to the response guide.

This turned out to mostly attract major issues which at least indirectly do lead to problems in the information process necessary to carry out various phases of emergency preparedness and management. These in summary form are:

Lack of communication and information exchange between the medical and the community service operations in emergencies and in particular after the immediate response is over.

Not clear from the legislation and policies what the goals and responsibilities are of the federal, state, and local agencies with respect to degree of aid and recovery of the public.

Defining roles: beneficiaries, information suppliers, information users, target audience, stakeholders, investors, etc.

Improved cooperation and coordination among various federal agencies.

Better working definitions of various concepts such as scope of an emergency, coherent conceptual models, degree of quality improvement, measures of the threat.

More explicit treatment of ethical issues, beginning with the planning process.

5. Examples of Information Overload Mitigation and other relevant activities

In the process of obtaining this material we encountered from the respondents and from our activities in searching for respondents many examples of either the documentation of the plethora of sources, that creates overload, or efforts to create aids for the reduction of information overload among practitioners.

Many of these can be considered as "grass roots" efforts in that a single individual or a small team of individuals concerned with some area of emergency management and response banded together to supply an information service. Many of those involved are practitioners in the field and the problems they had over the years in sorting out relevant information from the volume of information being generated led them to track and document their success as well as making it available to other practitioners.

In some cases these are carried out by individuals who are consultants, organizations, and/or consulting firms. But we only consider situations that were free to practitioners and largely publicly available on the Web (with one exception).

The examples, which are described, are included in appendix A to this report. They are:

- 1. A collection of data on the distribution of relevant information in journals**
- 2. Relevant websites collected, categorized and shared by one individual practitioner with the rest of the community.**
- 3. An example of a quality and useful document in the gray literature not indexed or available on the Web.**
- 4. An international Mental Health Website from Sweden providing information for disaster victims with respect to trauma due to disasters.**
- 5. Interstate Chemical Terrorism Workgroup and the InfoMatrix which structures hazardous material information relevant for practitioners.**

- 6. Communities of Practice: Big Medicine, ISCRAM, All-Hands, and related Individual efforts**
- 7. An individual respondent's answers to this NLM inquiry available on the Web**
- 8. Worldwide online courses for medical professionals handling trauma: ITLS**

6. Conclusions and Observations: UNMET NEEDS

There are numerous observations made throughout the document both in the summaries and in the detailed compilations of the viewpoints of the respondents, who are emergency response practitioners and experts, broadly defined. Here we first restate and summarize what seem to be the most important unmet needs related to medically-related emergency preparedness and response, affecting the ultimate choice of options for NLM's efforts in this area. Then we also provide a list of some summarized observations from the data.

TOP UNMET NEEDS AND DESIRES

1. Resources for coping with information overload, broadly defined, due to the plethora of types and sources of information. As one of our international experts put it, "Just as it is important to be able to obtain information; [it] must be relevant. This emphasizes the need for... peer-reviewed materials that do not necessarily have to be present in a journal form (e.g., peer-reviewed web sites may do fine)."

One aspect of the problem is *the need and desire to be able to have organized, peer-reviewed access to some of the "gray literature,"* such as lessons learned, best practices, examples of plans and procedures for emergency response for different types of situations. A recommender system for expert communities (communities of practice) is one possible approach to this problem.

Experts in specific areas expressed the need to be able to nominate and evaluate specific gray literature documents and view the collective results of this for their given peer group. In addition, they want to be able to link this material to tags appropriate for their specialty group. One can expect software to do this to evolve in the growing effort to provide tools for communities of practice and a growing effort internationally to provide open source software for international humanitarian efforts.

Another aspect is the frequently expressed *need for more complete indexing of terms for health-related emergency response information resources.* Useful indexes would cover all kinds of health-related emergencies and also be tied to region-specific information. They would be usable by emergency planners and responders as well as by physicians.

2. An expansion in comprehensive "one stop" information resources for additional types of health-related emergency threats, specifically, *expanding the REMM approach to other specialized areas.* (The Radiation Event Medical Management site covers the diagnosis and treatment of radiation injuries during mass casualty radiological or nuclear events). There are many other classes of emergency events for which both non-specialist physicians and first responders might need a similar well organized compendium, e.g., biological events, chemical events, mass injuries from large scale natural disasters (e.g., hurricanes, earthquakes, floods) or infrastructure failures.

3. Online availability of templates and guidelines for concisely gathering and providing all of the information that will be needed in a locale or community when it is struck by disaster.
4. Expansion in the roles of local libraries and of reference librarians, through “Go Local” type efforts, that provide local information (e.g., organizations, resources, maps of infrastructure) as well as expertise to help local emergency planners and responders to find the most relevant information currently (online and in print) that applies to a situation they are facing. (This would include plans for keeping libraries open in emergencies, if they are to serve as information resources then.)
5. Collections of practitioner documents in specific areas such as plans, best practices, training materials, and requirements and design studies for support systems of all sorts. Many localities do not have adequate resources to pay for these and national level documents do not deal adequately with local situations. Having a compilation to compare and evolve current plans, training, and other preparedness activities would be quite valuable.

We also offer the following observations to keep in mind in thinking about services that could be provided by DIMRC, each arising from several mentions, but not meant to be rank ordered:

- Currently literature in this area is very scattered, especially the gray literature.
- Many types of gray literature are considered critical to practitioners and some of them are not collected and organized in any systematic library science approach.
- Static indexes are not going satisfy the users at the practitioner level and even the academic level because the current the field is evolving and changing.
- Users have turned to social networks to help alleviate information overload and are attracted to services that support the underlying social networks.
- Users want to have control over their abilities to filter and organize their material.
- Users also want more professional help aiding their information seeking processes.
- There are too many sources competing for being “the source” and this lack of organizational cooperation is a major challenge to overcome.
- A professional library could be the logical mediator between organizations.
- Grassroots based services worldwide are undergoing rapid development.
- Collaboration capabilities (e.g., social recommender systems) are expected by practitioners and they have begun to gravitate to systems that provide them.
- A form of recommender system on gray literature documents recommended by users could be explored as an appropriate method to allow user involvement.
- An approach to users contributing and evaluating “best practices” is another obvious recommender type of approach if the system can integrate local factors for the individual user.
- Practitioners have adopted a wide variety of coping mechanisms for dealing with information overload, and while sufficient to do their job in many cases, it is not always satisfying to those who feel there might be better solutions.

- Structuring and visualization approaches to provide quick access to complex information should receive considerable attention to service the practitioner community.
- AI approaches can also be very useful if the users have control over setting what are sometimes very unique needs and requirements or training the AI in a feedback process.
- Collaborative tagging was mentioned a number of times by the respondents and seems to be one example of the desire to have involvement in the process of tailoring the systems serving them.

It should be noted that many of the above concerns and concepts apply to emergency preparedness and management areas in general and not only to the topics of medical and public health considerations. It should also be obvious that in some aspects of the problem the emergency medical and public health areas cannot be separate from other areas of concern such as utilities, infrastructure, transportation, logistics, and coordination among many different agencies and organizations.

Appendix A

Examples of Information Overload Mitigation Activities

1. Example of relevant data on paper distribution in journals

One of our respondents, Marv Birnbaum, Professor at the University of Wisconsin, provided us with a set of slides he produced for a presentation at WHO (World Health Orientation, Feb. 07) which we have incorporated with his permission. They use a collection of journal articles dealing with some recent disaster events.

The results represent supporting evidence for two important points that support empirically many of the views of the respondents to this study.

- Even when the literature is focused on only journals there is a tremendous scattering of the literature on a single event over many different sources, topics, and journals.
- The health and medical areas interact with a great many other areas of concern in an emergency so that it is hard to treat many of the areas in isolation from one another.

The second point arises from the diversity of topics of the journals involved and the final slide which reflects the relationship of health to:

Health

- A "state of Being"
- An ideal value
- Survival, welfare and dignity

Health Determinants

- Population, environment, economy, education, security, food, water, habitat, health services, support systems and lifelines,

Health Sector

- The part of economy, institutions and society that deals with the demand for health (i.e. services, norms, production and distribution of drugs, etc)

Health Services

- The resources and processes dedicated to activities that are intended to improve health (i.e. service delivery, norms and standards setting)

Medical care

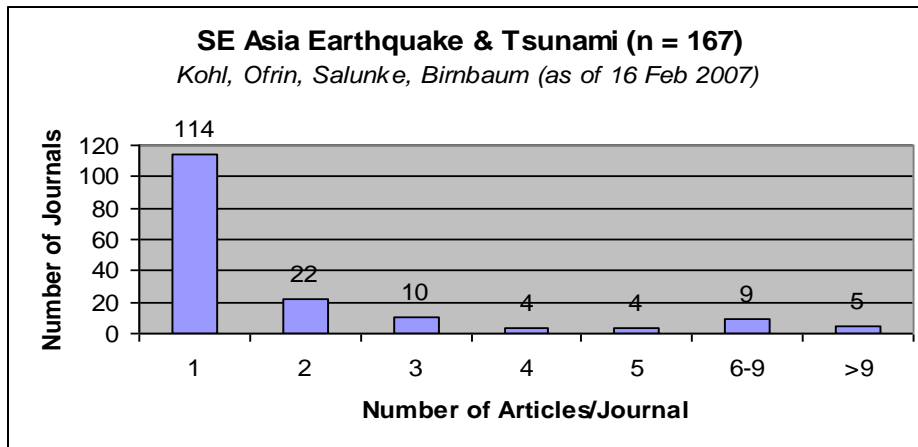
- The resources and processes dedicated to the delivery of preventive and curative medical services (i.e. service delivery)

While in the immediate response to a disaster medical care is the highest priority, we often forget why many common disasters in the United States usually have less causality than in other parts of the world. This is because of the levels that create the foundation for medical care. In one way or another they impact on the ability to prepare for emergencies and to recover from them, as well as provide medical care in the response phase.

DISASTER HEALTH

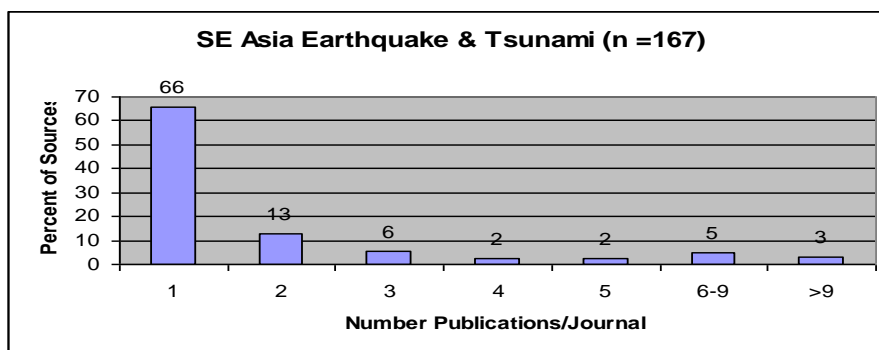
Where is the Information??

WHO
19 February 2007
Marv Birnbaum
University of Wisconsin



SE Asia Earthquake & Tsunami (2004)

Kohl, Ofrin, Salunke, Birnbaum (as of 16 Feb 02007)



Y axis Percent of Sources (journals)

SE Asia Earthquake & Tsunami (2004)

Kohl, Ofrin, Salunke, Birnbaum (*in preparation*)

Frequency (Top 5)

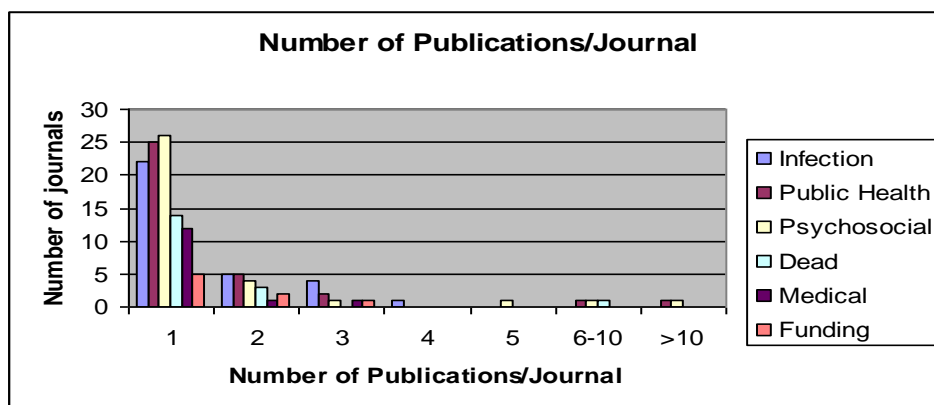
Peer-Reviewed Journal	No. Publications
<i>Prehospital Disaster Med</i>	43
<i>Intl Rev Psychiatry</i>	28
<i>Science</i>	25
<i>Nature</i>	20
<i>Lancet</i>	15

SE Asia Earthquake & Tsunami (2004)

Kohl, Ofrin, Salunke, Birnbaum (*as of 16 Feb 2007*)

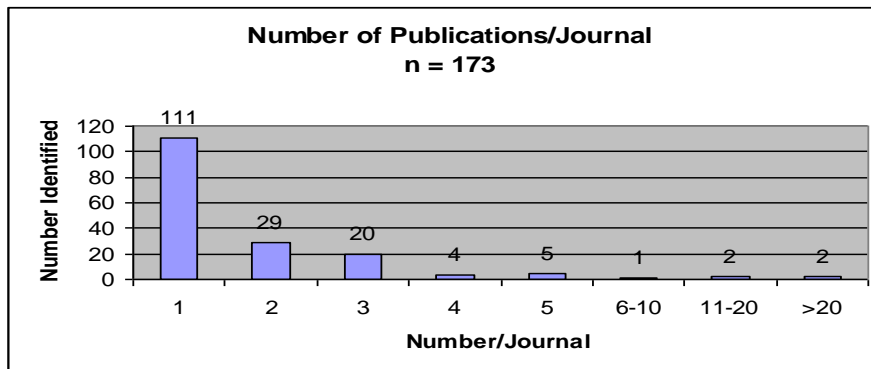
Content Area	n(%)	Content Area	n(%)
Psychosocial	81(22.0)	Management	13(3.5)
Public Health	57(15.4)	Food/Nutrition	8(2.2)
Infections	46(12.5)	Gender/Reprod	7(1.9)
Response/relief	39(10.5)	Veterinarian	5(1.4)
Dead bodies	32(7.9)	Water/Sanitation	2(0.5)
Medical Care	26(7.1)	Education	1(0.3)
Warning	14(3.8)	H/C systems	1(0.3)

Total number = 407 ; Physics = 38 ; n = 369



Event-Specific Literature Search

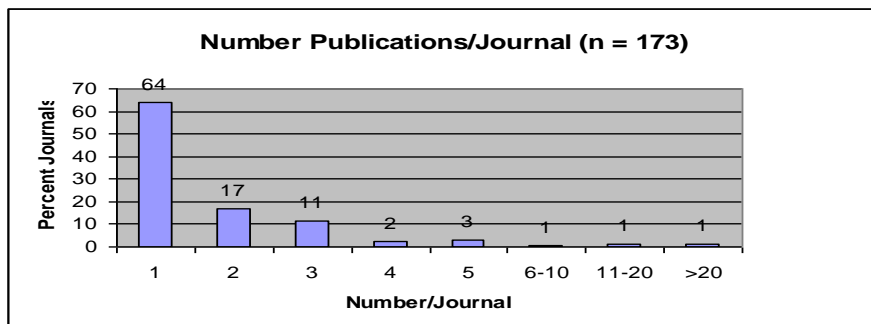
Archer, Burkle, *et al* (in preparation)



Y axis: number identified

Event-Specific Literature Search

Archer, Burkle, *et al* (in preparation)



Y axis: Percent of journals

Event-Specific Literature Search

Archer, Burkle, *et al* (in preparation)

Frequency (Top 5)

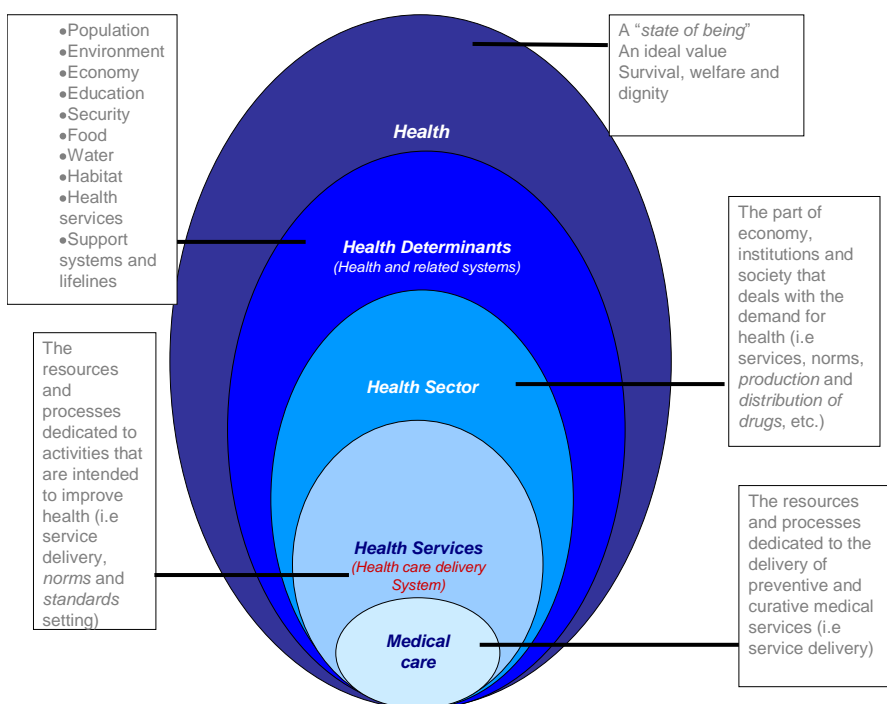
Peer-Reviewed Journal	No. Publications
<i>Prehospital Disaster Med</i>	33
<i>MMWR</i>	23
<i>J Trauma Stress</i>	17
<i>Intl Rev Psychiatry</i>	13
<i>South Med J</i>	5

Event-Specific Literature Search

(peer-reviewed only)
Archer, Burkle, et al (in preparation)

n = 393

Content Area	n	(%)
Physical health	97	(25)
Mental health	89	(23)
Disease states	46	(12)
Medical response	79	(20)
Healthcare systems	34	(9)
Disaster response	17	(4)
Other (IT, abuse, military)	9	(2)



2. Relevant websites collected by one individual.

One of the practitioners who responded, Gregory Banner of DHHS, has been collecting useful websites for many years and his list of sites is on the Web and has been conveyed to other emergency managers through a number of shared message lists.

http://www.ynhhs.org/emergency/us_dhhs_web_sites.pdf

WMD, Emergency Management and Medical Web Sites

1. The following is intended to provide a comprehensive list of internet sites of use for emergency planning and in particular Weapons of Mass Destruction (WMD) and medical emergency planning. To be useful as a working document, the listing is divided into the following categories

Organizations

- Federal Agencies (Includes non-US national-level offices)*
- International (International Agencies)*
- Local Emergency Management/BT/Health/WMD web sites*
- Private, Non-Profit, Academic Organizations, Professional Societies*
- *Disease Monitoring Systems*
- *Web Link Compendiums, Glossaries, Search Engines and other Resource Listings*
- *References*
 - Agricultural, Animal, Food, Water Issues*
 - Business/Facility/School/Installation Information*
 - Community/Local Planning*
 - Decontamination*
 - Diseases/Conditions/Agents/Treatment/Surveillance Systems*
 - Dispensing Functions, Strategic National Stockpile, Pharmaceutical and Other systems.*
 - Equipment and Personal Protective Equipment,*
 - Federal Plans and Guidance, Laws, Regulations, Public Health Planning and Guidance*
 - First responder guides/procedures*
 - Hospital & Health Facilities*
 - Incident Command System and Emergency Operations Center Tools*
 - Individual/Family/Public Guides & Info, Volunteers*
 - Information Management/Public Affairs/Alert Systems*
 - Laboratories*
 - Legal and Law Enforcement Issues, Intelligence Documents*
 - Logistics*
 - Mental Health Issues*
 - Mortuary Affairs*
 - Special Populations*
 - Transportation*

- Miscellaneous*
- *Training/Seminars/Classes/Conferences*

2. *There is an incredible amount of information available through the internet. As an introduction to understanding the complexity of all of the federal offices involved in WMD, go to the organizational chart at <http://cns.miis.edu/research/cbw/domestic.htm#wmdchart>*

3. *To keep this list at a manageable level, some information is specifically omitted. There is a separate document which lists on line periodicals and list servers. This list is available from the author below, upon request.*

4. *PLEASE NOTE - This list is constantly being updated. To contact the author for the latest version, or to provide additional information, send an email to: gregory.banner@hhs.gov*

Note that this collection of websites is 73 pages long and represents around 1300 separate links within the above categories. Every reader should look at the link in item 2 above giving the chart of all the federal offices involved if they are not familiar with that situation. It does illustrate part of the problem very well in terms the integration across different organizations.

The above is considered a useful reference list by many practitioners and one should note that it lacks any abstract giving a description of each site that would probably enhance its value. However, the sites are clustered and categorized by terms relevant to practitioners.

3. A quality document in the gray literature

In messages with an expected participant we were sent the following report:

Public Health Preparedness Decision Support System

Alachua County Pilot Project, Phase One Report, Florida Department of Health, by Geoffrey Hoare, PhD and Jeffrey A. Nield, MA

Alachua County Health Department, Gainesville, FL, June 25, 2006, Version: 9.0

*Public Health Preparedness Decision Support System: Pilot Project Report
PHP-DSS_Report_v90.doc, Version 9.0, Printed: 7/2/2007 1 of 105*

EXECUTIVE SUMMARY

Timely access to current health and medical data is a critical element of disaster preparedness and response. A clear understanding of resource availability across all types of health and medical facilities and response assets, improves situational awareness and, hence, decision making. A decision support system, or DSS, is a

database with specialized communications, analysis and reporting functions to more effectively manage complex information. Several health and medical capacity DSSs are employed in Florida, yet no one system captures the breadth of information needed by the Health and Medical Emergency Support Function (ESF - 8), at the county, region or State levels.

This report describes a research project that piloted an integrated health and medical Decision Support System for Alachua County. Development of the pilot decision support system began with examination of the decision-making tasks and information needs of the ESF-8 staff. Existing and proposed health and medical capacity databases were reviewed, to search for information not covered by existing systems. Ultimately, this led to the creation of an ideal data set that should be used in a health and medical capacity DSS (Appendix A). Finally, a web-enabled, relational database was populated with this data set, in order to test the DSS concept.

This is a document of 105 pages and which would never appear in a journal with the same level of detail that would be necessary to aid other localities to undertake their own efforts without repeating a great deal of the investigative effort that has already been accomplished by the authors. This is an excellent example of what appears to be a quality report that would be useful to others but only if they can easily find out it exists and where to get it. While documents produced at the federal level are easier to find those produced locally are much harder to detect. There are many instances where materials generated by a locality are more relevant to plans and the design of processes for other localities than what comes from the top down. This particular document is not on the Web nor could we find it referenced on the Web via Google.

A copy of the document has been forwarded to NLM for examination as a document in support of this report. It is an excellent attempt to integrate all the medical information and data in a given locality for use in any phase of emergency preparedness and represents a very detailed requirements study. This is only the first in what is supposed to be a series of efforts leading to a working system.

The author has submitted a practitioner's paper to the ISCRAM08 meeting (<http://iscram.org>) and those free proceedings on the Web after May of this year should allow those interested to request the full report via the author or the organization that sponsored it.

The need to get useful gray literature involving plans, requirements, best practices, training materials, etc is expressed by many of the participants seeking better access to gray literature materials such as this particular document.

4. An international Mental Health Website from Sweden

This website, in seven languages, is a very comprehensive collection of mental health information for the public. It is developed and maintained by both psychologists and psychiatrists. It includes online consultation with professionals, discussion forums organized around a particular problem area, and extensive regular updates from all around the world, all vetted by Swedish professionals.

<http://web4health.info>

The above site is for public access to expert vetted information on all forms of mental health problems.

Since 2004 they have started to add subjects of trauma having to do with those who have lived through a disaster. In the extensive QUICK Title Index (which indexes all words in each title) are the following entries:

<i>Child Molestation</i>	<i>Trauma</i>
<i>Psychological Help for</i>	<i>Trauma Victims of Disasters, for example Tsunami Victims</i>
<i>Symptoms of Post</i>	<i>Traumatic Stress Disorders (PTSD), Effects of Violence</i>
<i>How To</i>	<i>Treat Anorexia Nervosa</i>
<i>Preventing and</i>	<i>Treating Gambling Addiction</i>

While there is only one entry for disaster victims at this point, it might be more productive to add more entries to this Swedish system than to develop a new web site about trauma.

One might also consider the need for a similar system that handled public first aid information for the type of injuries or difficulties that are more common in disasters of various types than are present in the typical first aid manual.

The following message is from one of the principals involved in the development, design, and evolution of this system.

*Jacob Palme <jpalme@dsv.su.se> Mon, Oct 15, 2007 at 5:26 AM
To: turoff@njit.edu*

If you have any experts who want to develop informational texts for the public about disaster victim issues, we can publish their texts on our web site. That way, they can probably get more people to read what they write, since we are a large web site with lots of visitors (650,000 visitors, two million pages downloads per month).

All our texts are written by, or approved by, medical experts in the area of psychiatry and psychology.

*Jacob Palma <jpalme@dsv.su.se> (Stockholm University and KTH)
for more info see URL: <http://www.dsv.su.se/jpalme/>*

Note that in the responses there are a number of other international medical websites and organizations that are considered valuable sources of information. Considering cooperation and collaboration with some of these entities might be a very productive approach.



Free medical advice on mental health, psychology, personality disorders, relationships, stress, anxiety, depression, emotional abuse, substance abuse, sexual abuse, types of mental illness, etc.

[Start](#)
[Search](#)
[Categories](#)
[Forums](#)
[Ask the Expert](#)
[Unseen](#)
[Login/out](#)
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Psychology Free Online Medical Advice



Answers to more than 1000 questions about psychology, mental health and relationships, written by a team of experts appointed by the Commission of the European Communities.

INTELLIGENT NATURAL-LANGUAGE QUESTION-ANSWERING

Ask a simple question in one sentence (Note: Our answers are not oriented towards somatic - body - medicine): 

[Submit Question](#)
[Advanced search page](#)
[Index A-Z](#)


RECENT DISCUSSIONS

01 Nov 09:53
[Brains out of control](#)

01 Nov 19:19
[Re: Brains out of control](#)

02 Nov 22:38
[Re: he's destroyed me](#)

05 Nov 19:38
[to STN](#)

LANGUAGES

 **Deutsch**

 **English**

 **Greek**

 **Italiano**

 **Polski**

 **Suomi**

 **Svenska**

LATEST QUESTIONS

03 Nov 18:29
[weird thoughts](#)

05 Nov 20:43
[follow up](#)

06 Nov 10:26
[Re: follow up](#)

06 Nov 10:48
[Re: weird thoughts](#)

CATEGORIES

Addiction	Healthy living	Psychotherapy
ADHD	Personality disorders	Relations
Anorexia	Life	Sex
Anxiety, Panic, OCD	Mood swings	Sleeping problems
Bulimia	Obesity	Stress symptoms
Child care	Phobia	Treatment
Depression	Psychiatric drugs	Workplace
All menus	All answers	More.....

We comply with the [HONcode standard](#) for trustworthy health information: [verify here](#).

Disclaimer: The documents contained in this web site are presented for information purposes only. The material is in no way intended to replace professional medical care or attention by a qualified psychiatrist or psychotherapist. The material in this web site cannot and should not be used as a basis for diagnosis or choice of treatment. If you find something which should be corrected, please write to cmc@dsv.su.se.

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5. Interstate Chemical Terrorism Workgroup and the InfoMatrix

This organization has integrated all the web based sites that have significant information about hazardous and toxic material problems into one information structure based upon an excel matrix (ICTWInfoMatrix). This is a volunteer group who works very hard to update and improve the content on a regular basis. The first column is the name of the organization providing the information and the second is a link to the information. The third column is a very brief paragraph about the site.

The other columns are the following:

Toxicology
Exposure Guidelines & Standards
Chem / Phys Properties Environmental Fate / Transport
Emergency Response
PPE
Decon
Acute hazards
signs, symptoms
First aid / Emergency Treatment
Med Trtmt Guides - Health Profs
Public FAQs
Other languages
Planning & Preparedness

The only information in these columns is an X indicating the site represented by the row has useful relevant information under that column so that the user knows that link is useful.

The row entries are divided into clusters by the following classification systems

I. Emergency Response
I.A Critical Phone Numbers
I.B First Responder Databases
I.C Decontamination
I.D Emergency Exposure Guidelines
I.E. Field Detection (also See Laboratory, II.D
I.F Personal Protective Equipment
II. Technical Support
II.A Chemical Fact sheets
II.B. Chemistry & Toxicology
II.C. Clinical/Medical
II.D. Hazard & Vulnerability Assessment
II.E Laboratory (also see Field Detection, 1.E)
II.F Public & Community Resources
II.G. Veterinary, Pets

Currently there are 105 different sites documented in this single matrix structure. Apparently this has become a common tool for professionals in this area and it was developed by the users themselves.

This type of approach represents the creation of an appropriate information structure as a multidimensional morphology appropriate to the topic area. It allows practitioners in an emergency to locate very quickly exactly what they need.

Erik Janus is responsible for the creation of the first version of the matrix and he and some of the others involved have submitted a practitioner's paper to ISCRAM08 (<http://iscram.org>). Sharon Lee is the ICTW facilitator and the contact for further information.

Statement by:

Sharon Lee, PhD, ICTW facilitator, Staff Toxicologist
California Department of Public Health
Environmental Health Investigations Branch
Sharon.Lee@cdph.ca.gov

Many of us working in state and local agencies have been urged to develop information on the role of public health in the event of chemical terrorism, and once the role is defined, to develop relevant materials. In an effort to define our role and to share knowledge, materials and resources, representatives from state, local, and federal agencies have formed this workgroup.

The ICTW, formed in 2002, currently includes members from nearly all states and Washington, DC. Telephone conference calls are scheduled on a monthly basis with discussion topics and speakers. In addition to monthly conference calls, the group has an electronic conference on the CDC secure web site, Epi-X Forum. We invite participants to post final or draft work-in-progress related to chemical terrorism and public health, on our electronic site. We welcome participation from state, local, and federal health and health-related agencies and institutions. Note: We are not able to offer membership to businesses, or to parties outside of the United States.

6. Communities of Practice and Individuals: Big Medicine, ISCRAM, All-Hands, and Individual efforts

There is a rapidly increasing formation on the Web of Communities of Practice, which are loosely defined as professionals or knowledgeable people concerned with the same topic who gather, discuss, and disseminate information among themselves and often to larger audiences if they choose to be open to the public.

They are characterized by not only creating websites for dissemination but also by employing some form of collaborative software that allows meaningful complex discussion to take place. We have chosen a few examples from what appear to be very popular and respected examples in the emergency practitioner community. While only

the first one is focused on medical and health topics the others all have these topics as part of their concerns.

Big Medicine

This network gathers and disseminates information for emergency practitioners in the health and medical field. It is operated by a team of volunteers comprised of both practitioners and consultants. The director of the effort is Hal Newman, one of our respondents who also contributed a quality list of documented international websites that is in the appendix to this report. The site may be found at:

<http://www.bigmedicine.ca/index.htm>

The above is a news publishing site and it also has a collaborative site:

<http://bigmedicine.collectivex.com/main/summary>

Which has discussion forums and other features to allow the members to network and exchange information.

This effort might best be characterized as a "community of practice" for practitioners in emergency preparedness and management concerned with the medical and health aspects.

ISCRAM (Information Systems for Crisis Response and Management)

In that regard Big Medicine is somewhat similar to ISCRAM (Information Systems for Crisis Response and Management, <http://iscram.org>). It was formed in 2004 for professionals interested in the problems of developing better information systems in this area. Both online communities were formed from grassroots efforts.

ISCRAM started as a workshop in 2004 in Brussels that expected about 10-20 and had to close out at 80. It now has over 2000 online members worldwide and its international meeting in 2008 in Washington DC expects around 400 attendees. The third ISCRAM China will be held in 2008 in addition. It provides a forum for those concerned with the general emergency information system challenges who otherwise are employed in the many specialized areas of the more general problem (medical, law enforcement, transportation, etc.). The ISCRAM conference was accepted in 2007 as an AIS (Association for Information Systems) affiliated conference.

This is not a new phenomenon in that every professional group taking on a new professional area starts out as what used to be called an "invisible college" that did not follow established paradigms and tended to not have a well established publications system. The way literature and information is scattered in this field is further evidence of the situation with respect to emergency preparedness and management.

All Hands Information Portal

This news collection and distribution site allows practitioners to contribute, utilizes volunteers, and is supported by a consultant firm made up of practitioners. It has an editor that reviews contributions before they are entered and insures they get properly categorized into the topic areas. The website is

<http://www.all-hands.net/>

In the words of current facilitator:

*Steve Davis <steve@all-hands.net>
to turoff@njit.edu,
date Dec 13, 2007 2:27 PM
subject RE: inquiry on NLM*

I agree that information overload is an issue. The All Hands Community -www.All-Hands.net was designed to help but the proliferation is too much and our search tools too primitive. My list does not send attachments but feel free to post to the site or do an e-mail to the group on this.

Also, All Hands has a blog and forum feature if you are interested in using either of those.

*Thanks,
Steve Davis*

7. An individual respondent answers on the Web

It does not have to be a community but actually as we have seen single individuals in the community can set up a website to help others in the community. That was illustrated by the long term effort on the extensive list of websites in Banner's prior example. Here is one created as part of this study which is now public.

One of our respondents developed a web site for his answers to this inquiry. His statements have been incorporated into the compilation of all the responses contained in the appendix. However, the site prepared by Dr. Eric Noji contains a number of valuable links to illustrate the points he wished to make; therefore we are including a link here to the site and recommend it as a useful list of other sites.

http://veritas-invictus.org/NLM_Survey.aspx

The respondent provided permission to make this public.

There are a large number of individuals who have established websites and in particularly blogs or Wiki pages concerned with topics in these areas. Trying to identify them all would be beyond the effort here. However some of them do have a significant following

as they exhibit more specificity into various subtopics, expressing a highly specialized interest that attracts a small but committed group. The small group working on the hazardous substances, InfoMatrix, is clearly one such community.

8. World wide online courses for handling trauma: ITLS

This US organization was mentioned by some MD's from foreign countries who felt it was the only organization from which they could get training in emergency medicine. Emergency medicine is not something a lot of medical people are well trained in and online courses are scarce.

The following is copied from the website:

About ITLS (<http://itrauma.org>)

International Trauma Life Support (ITLS) is a global organization dedicated to preventing death and disability from trauma through education and emergency trauma care.

ITLS was founded in the early 1980's as Basic Trauma Life Support. From its early roots as a local and regional trauma education course for EMS professionals, BTLS grew to have over 70 chapters around the world. In 2005, BTLS became ITLS to better reflect the scope of the organization.

Organization: ITLS training programs are aimed at prehospital (or out-of-hospital) providers. Since its founding in 1982, over 330,000 EMS professionals have learned proven techniques endorsed by the American College of Emergency Physicians (ACEP) and the National Association of EMS Physicians (NAEMSP.)

International Trauma Standard: ITLS is accepted internationally as the standard training course for prehospital trauma care, and is not only taught as a continuing education course, but is also used as a textbook in many Paramedic, EMT, and first responder training programs.

ITLS courses give the student the knowledge and hands-on skills to take better care of trauma patients. ITLS stresses rapid assessment, appropriate intervention, and identification of immediate life threats. The ITLS framework for rapid, appropriate and effective trauma care is a global standard that works in any situation.

ITLS courses combine classroom learning and hands-on skills stations. They also challenge the student with scenario assessment stations where learning is put to work in simulated trauma situations. ITLS courses are designed, managed and delivered by course directors, coordinators and instructors experienced in EMS, prehospital care and the ITLS approach.

Each ITLS course includes a comprehensive manual sent to the student in advance. The manual enhances learning experience with in-depth content, photos, and illustrations. ITLS manuals are written by trauma care experts and edited by the ITLS Editorial Board. After the course, the student can refer to the manual as a valuable recap of what has been learned.

Appendix B

The Self Report Guide

STUDY FOR THE NATIONAL LIBRARY OF MEDICINE ON INFORMATION REQUIREMENTS FOR EMERGENCY PREPAREDNESS AND RESPONSE

Murray Turoff and Starr Roxanne Hiltz

The overall goal of this study for the National Library of Medicine is to determine the most significant knowledge, information, and services they can incorporate into their development of a Disaster Information System available on the Web that can provide aid to practitioners about the medical aspects of Emergency Management and Preparedness. It is concerned with all the phases of EM&P: planning, threat analysis, mitigation, training, detection, response, and recovery.

We were asked to:

“assist NLM in determining the current information seeking behavior, existing preferred sources of information, and unmet information needs of people (researchers, practitioners, volunteers, non-profit organizations, local communities, and local, state, and federal government agencies) involved with emergency planning, preparedness and response to disasters with potential or actual medical and public health consequences.”

Given the range of backgrounds we are seeking input from, you should not feel you have to answer every question but should focus on those questions for which you have the most insight. Whenever possible, please provide “real examples” of information and materials or resources now used or needed but missing.

We will not quote any answer, viewpoint, or concept as being that of a specific person. If you approve below we will list you as one of the contributors to the report. However, to include your contribution we need to know the background information below for possible follow up. If you feel there is a particular viewpoint you wish to be associated with you may supply us separately a one page summary statement and we will include it in an appendix of such statements supplied to NLM, provided you have also returned this survey.

(Note: If you are completing this interview/survey guide on a computer in Word (.doc) you may add as much information as you wish below by increasing the space after a given question. If you have only seen a hard copy, message us to receive the text as an attachment to an email)

For a full statement of the related NLM goals see: *Charting the Course for the 21st Century: NLM's Long Range Plan 2006-2016*, recommendations 1.5, 1.6, 2.1, 2.2, pages 29-37. <http://www.nlm.nih.gov/pubs/plan/lrpdocs.html>

If you have any questions do not hesitate to contact us. Below is our email and websites

Starr Roxanne Hiltz, roxanne.hiltz@gmail.com <http://is.njit.edu/hiltz>
Murray Turoff, murray.turoff@gmail.com, <http://is.njit.edu/turoff>

Beginning of Survey/Interview

1.a Background information

Your Name: _____

Your email: _____

Your telephone: _____

1.b Please list your current and most recent (last five years) positions and roles related to emergency preparedness, management, and/or response, including any specific emergencies in which you have assisted in some aspect of.

2. Current Sources

What sources do you currently consider as highly useful and important for medically-related emergency response missions including journals, organizations, websites, books, reports, plans, training materials, etc.? (Please give specific information, e.g., journal or newsletter name, URL for a web site, etc. If possible, also add a sentence about how and in what emergency situation this source has been used by you.)

3. Desired Sources

For medically-related emergency response missions: What useful resources, services, or types of information are now missing or difficult to access or use, that you would like to see more readily accessible to practitioners?

Can you give one or two specific examples of emergency situations in which information was needed but was difficult to obtain?

4. Organizing Information, Knowledge or Wisdom

Are there ways or methods you would like to see material in this area organized, indexed, clustered, processed, and/or filtered that would make it easier for you or others to recognize that something new might well be of use to you or others in this area? Or, what would you like to see done to cut down the time to find useful new material?

5. Current outstanding examples

Are there any other specific medical, health care, public health disaster plans or training materials or web based resources that you consider outstanding examples of such material? Try to give enough information to locate the materials and/or some example websites having such material.

What material not currently available on the Web would you like to see there?

6. Roles of Libraries and Librarians

Is there a role in local areas for a trained librarian to have the time and resources to review and selectively distribute information to local practitioners that have established profiles of interest? Are there other particular services a local library should provide?

What other roles, talents, and/or software support would you see for librarians and for local libraries (e.g. knowledge of filling out disaster aid request forms, medical need forms, etc)

7. Extreme Events

If you had to consider an “extreme” but possible event such as a pandemic, would this add additional information requirements relevant to any of the other questions on this survey?

8. Your critical topic areas

In terms of creating an index (general ontology) out of a sample document database that can then be used to automatically classify new information as it occurs, what would you want included in such a database and what specific topic areas would you want to see in the resulting index or ontology?

9. International Considerations

The national Library of Medicine has an important role in aiding other countries in the accumulation and dissemination of medical information and knowledge.

- a. What specific contributions in the above disaster information areas might be important for NLM to provide internationally?
- b. What contributions from other countries could be made to NLM in the disaster information area? This could include important sources in other countries not traditionally disseminated in the U.S.

10. Others to include

Who else would you recommend should be asked to participate in this study and why in a sentence or two? (Please include name and email). Can your name be used in making contact with these individuals: Yes _____ No _____

11. Possible Workshop

If there were to be a future workshop (possibly in May 2008) including specific invitees to refine the results of this study and recommendations, would you be interested in participating:

Yes _____ No _____

Who else would you suggest be invited? Give email, address, and/or website and a sentence or two about them.

12. NLM experience (if not mentioned in prior answers)

Have you ever used MEDLINE or any other NLM system to find information related to Emergency Preparedness or Management? If so characterize your experience and reaction.

13. Anything we left out

Please add any other information or comments that you think we should have asked for or any question you think should be added to this survey.

Choices

I am willing to be listed as a contributor to the report on the results of this survey:

YES _____ NO _____

I do plan to follow up with a one page statement of a view point I wish to be identified with:

YES _____ NO _____

Please try to return this survey in four weeks or less (if you need more time please let us know). Also notify us if you cannot do any part of this survey. If you know someone you feel should do this survey you may send them a copy, but please email us that you have done so. You will receive the public report of this effort in 2008.

THANK YOU SO MUCH, on behalf of the National Library of Medicine!!

Please return via email with a word or text file attachment to:

murray.turoff@gmail.com) and roxanne.hiltz@gmail.com, (Distinguished Professors, Emeriti, Department of Information Systems, New Jersey Institute of Technology, Newark NJ 07102)

APPENDIX C

COMPLETE SET OF RESPONSES, ORGANIZED BY QUESTION and TYPE OF RESPONDENT

(As of February 8, 2008)

STUDY FOR THE NATIONAL LIBRARY OF MEDICINE ON INFORMATION REQUIREMENTS FOR EMERGENCY PREPAREDNESS AND RESPONSE

Murray Turoff and Starr Roxanne Hiltz

NOTE: a blank line separates individual responses

2. Current Sources

What sources do you currently consider as highly useful and important for emergency preparedness or response missions with medical or public health implications (e.g. including journals, organizations, websites, books, reports, plans, training materials, services, etc).? Please give specific information, e.g., journal or newsletter name, URL for a web site, etc. If possible, also add a sentence about how and in what type of situation this source has been used by you.

1. Practitioners

Multiple web sites which I have organized myself in my own reference document:
http://www.ynhhs.org/emergency/US_DHHS_web_sites.pdf
As general resources I tend to use the Pandemicflu.gov web site a lot, as well as LLIS.

Journal of Public Health, Bioterrorism and Biosecurity, DHS list serve, HHS list serve, Center for Disease Control and Prevention website, Natural Hazards Institute (Boulder, CO)

Humanitarian Practice Network/Overseas Development Institute – for best practices research, however I do not specialize in medical or public health research. All other sources fall outside the medical/public health domain.

HEALTH, pandemic—the granddaddy is CDC. The web sites that I use, mainly website is the department of Homeland Security/lessons learned, information systems. And it's a website but more of a portal, the CDC website, the ready.gov and the World Health Organization.

Organizations:

CDC, FEMA, OFDA, USGS, NWS, WHO, UNICEF, UNHCR, DoD, universities, think tanks like CSIS, SAIS

Journals:

Disasters

Disasters & Prehospital Medicine

Disaster Medicine and Public Health Preparedness (published by the AMA)

Weekly Morbidity & Mortality Report from the CDC

Websites:

PAHO: <http://www.paho.org/english/DD/PED/home.htm>

AlertNet: <http://www.alertnet.org/>

Natural Hazards Center: <http://www.colorado.edu/hazards/>

ReliefWeb: <http://www.reliefweb.int/rw/dbc.nsf/doc100?OpenForm>

CBS: <http://www.cbsnews.com/digitaldan/disaster/disasters.shtml>

CDC: <http://www.bt.cdc.gov/disasters/>

FEMA: <http://www.fema.gov>

Books and Manuals:

Public Health Consequences of Disasters

OFDA FOG Manual

MSF Series on emergencies (e.g., surgical care, epidemiology, mental health, obstetrics, communicable disease control, etc).

Disaster Medicine (by Ciotto et al)

THESE ALL HAVE BEEN USEFUL FOR TRAINING AND RESEARCH. NOT SO MUCH DURING THE RESPONSE AND RECOVERY PHASE WHEN THERE IS LITTLE TIME FOR READING OR SURFING THE INTERNET.

The best is REMM (www.remm.nlm.gov) for rad/nuc. I use CDC website, AFRRI and Google searches for specific topics. I don't specifically read journals for this but do PUBMED searches.

I am interested in Rad/Nuc and use meetings, emails, and personal search to find them.

I review GAO reports, Federal Guidance on Disaster Preparedness and subscribe to (and write for) the on line publication, "Big Medicine." Most of my sources are from the rich experiences I gained from the Armed Services (An Air Force Medical Service Corps Officer-MS), Private Sector "For-Profit" and "Not-For Profit" healthcare organizations. I am not an academic, but rather an operational person who is delighted to share my experience with others.

AHRQ Bioterrorism Site; various State's Dept of Health preparedness sections websites, particularly for pan flu plans; DHS's lessons learned site. Most journal articles I read are sent by others, I don't have time to scan the journals and/or don't have subscriptions. CDC site.

InfoMatrix is part of a larger set of tools developed for rapid, credible and accurate information sharing for a variety of audiences during a chemical. It is found at the web page maintained by the Michigan Department of Community Health (MDCH) *Chemical Terrorism and Emergencies Unit*. (As of January 2008, see http://www.michigan.gov/mdch/0,1607,7-132-2945_5105-98025--,00.html to link to the latest matrix document, available in .pdf format.). Currently, the InfoMatrix is maintained and updated by the ICTW and given a permanent WWW link on the MDCH web page listed above.

Other extremely useful tools I have used extensively as part of ongoing public health investigation include:

- *CAMEO* (Computer Aided management of Emergency Operations), a suite of programs that includes a GIS application (MARPLOT) and a plume modeling mapping application (ALOHA) – a free resource from the National Oceanic and Atmospheric Association with significant cross-jurisdiction and knowledge maintained in the Environmental Protection Agency Office of Emergency Management.

- I have used ALOHA to visualize rough plume magnitude and direction, but have used it primarily as a training tool, teaching local public health emergency preparedness partners its utility in a chemical emergency

- *WISER* (Wireless Emergency Information System for Emergency Responders), a free download from the National Library of Medicine and available for several handheld platforms as well as a pure online version (WebWISER).

- WebWISER and WISER for Windows I used in most of the investigations I have personally participated in since these tools were made available, including a nationally reported “outbreak” of mass psychogenic illness transmitted via “line of sight” in Saline High School (Michigan). For more information, see http://www.michigan.gov/documents/SalineHighSchoolHC060906_163234_7.pdf

Organizations: New York City Department of Health and Mental Hygiene, New York State Department of Health, New Jersey Department of Health and Senior Services, Center for Disease Control, Department of Homeland Security, EPA, NIOSH, Department of Homeland Security Digital Library and the web sites associated with these organizations. Direct coordination and collaboration is absolutely essential for the Port Authority of NY & NJ’s Bio-defense strategy and preparedness. Homeland Security Digital Library

2. Medical and Health Professionals

I have used a host of resources depending on the topic on which I was focused. I routinely use NLM’s PubMed for lit searches.

I frequently use government websites such as NOAA (National Hurricane Center, etc.) to learn about storms and USGS for information on earthquakes. I have used the National Hurricanes Center during tropical storms and hurricanes to assist in situational awareness. I used the earthquake information as background for the earthquake playbook and also to educate myself about the best sources for information in the aftermath of an earthquake. CDC’s vital statistics website has been a helpful resource in pandemic planning as has been pandemicflu.gov (especially for seeing what state plans look like). CDC has a wealth of materials on threat agents and crisis communications that I use regularly e.g., <http://www.bt.cdc.gov/firsthours/>. The REMM website hosted by NLM is a wonderful resource.

General readings include the International Society for Traumatic Stress Studies (ISTSS) – newsletters and journal. I frequently consult the VA’s National Center for PTSD, <http://www.ncptsd.va.gov/ncmain/index.jsp> They also host the PILOTS database which is a great source for information on psychosocial responses to emergencies.

I follow Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science to stay abreast of thoughtful analyses of issues I'm working on.. I search the GAO website and Institute of Medicine's website relatively frequently.

Other journals that have been helpful include Predisaster Hospital Medicine and major Emergency Medicine journals. I've looked at the new JAMA series on disaster medicine.

I receive a weekly newsletter for the Yale New Haven Center which frequently has links to topics of interest. center@ynhh.org <http://www.yalenewhavenhealth.org/emergency/>

I am an associate member of the National Public Health Information Coalition which has been a valuable way of learning about what states are doing and how they are messaging. I also used this organization during Hurricane Katrina (unofficially) to quickly find out how much tetanus toxoid was on hand in the state health departments affected. <http://www.nphic.org/>

In a similar vein, I periodically check the National Association of County and City Officials to learn about state and local issues. <http://www.naccho.org/>

Organizations:

CDC – Emergency Preparedness and Response Listing: <http://www.bt.cdc.gov/>

American Red Cross: <http://www.redcross.org/services/disaster/>

FEMA: <http://www.fema.gov/>

CINDI: <http://cindi.usgs.gov/>

NESDIS: <http://www.nesdis.noaa.gov/>

USGS: <http://www.usgs.gov/>

DHS: <http://www.dhs.gov/index.shtml>

NYC OEM: <http://www.nyc.gov/html/oem/html/home/home.shtml>

Biosafety in Microbiological & Biomedical Laboratories (BMBL)

Case Definitions for Selected Infectious Diseases

CDC Recommends: The Prevention Guidelines System

Emerging Infectious Diseases Journal

Geographic Analysis Tool for Health & Environmental Research (GATHER)

Geographic Information Systems (GIS) & Public Health

Health Alert Network (HAN)

National Laboratory Training Network (NLTN)

Public Health Training Network (PHTN)

Association of Public Health Laboratories (APHL)

Association of State & Territorial Health Officials (ASTHO)

Center for Biosecurity, University of Pittsburgh Medical Center (UPMC)

Center for Infectious Disease Research & Policy

Center for Nonproliferation Studies

Centers for Public Health Preparedness (CPHP)

Defense Threat Reduction Agency (DTRA)

Department of Homeland Security (DHS)

Food & Drug Administration (FDA): Bioterrorism

Health Agency Locator (HAL)

Health Resources & Services Administration (HRSA)

MedlinePlus: Biodefense and Bioterrorism

National Association of County & City Health Officials (NACCHO): Bioterrorism & Emergency Response Program
National Association of Local Boards of Health (NALBOH)
National Institute of Allergy & Infectious Diseases (NIAID): Bioterrorism
National Library of Medicine (NLM): Biological Warfare
United States Postal Service (USPS) guidance regarding harmful biological or chemical weapons
U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID)

Journals/DB:

Journal of Disaster Studies Policy and Management
American Society of Professional Emergency Planners
Australian Journal of Emergency Management
Contingency Planning & Management
Disasters
Disaster Prevention and Management
Disaster Recovery Journal
Disaster Resource
The Electronic Journal of Emergency Management
Hazards Literature Database Natural Hazards Research/Appl Info Cntr, U. CO, Boulder
International Journal of Mass Emergencies and Disasters
Journal of Civil Defense
Journal of Contingency and Crisis Management
Journal of Environmental Management
Natural Hazards Observer
Natural Hazards Review
Australasian Journal of Disaster and Trauma Studies
Banks in Insurance Report
Disaster Prevention and Management: An International Journal
Risk Analysis
Environmental Hazards
Global Environmental Change Part B: Environmental Hazards
Journal of 9/11 Studies
Journal of Hazardous Materials
Journal of Humanitarian Assistance
Natural Hazards
Pre-Hospital and Disaster Medicine
Crisis Disaster and Risk Management
Journal of Organizational and Business Continuity

I think the predominate source would be the CDC website when we've have any activities that we've had to really had to worry about we've gone on there for a least an initial cut on what might happen. DHS websites and in general other websites. The ability to search on a web site makes it easier to get to the information even if you have a book that might have what you're looking for you don't have the search capability that electronically you could have.

Prehospital and Disaster Medicine
Annals of Emergency Medicine
Disaster Medicine (2 textbooks – Burnstein & Hogan; Cittone)
CDC website
DHS website
ATSDR website

3. Other Professionals

3.1 Librarians

Basic reference texts such as the PDR, Washington Manuals or other similar pocket medicine handbooks, Merck Manual, an Atlas of Dermatology, Toxicology and Biological warfare manuals, Guidelines on Pandemic Flu, Aurbach's Emergency Medicine, any reference on setting fractures and/or rudimentary surgical procedures, an all-encompassing diabetes reference, possibly a psych manual.

American Red Cross (www.redcross.org)

Local Red Cross locator, detailed instructions for preparing a disaster kit, foreign language materials

Amigos Library Services (www.amigos.org)

Sample disaster plan template

Centers for Disease Control (www.cdc.gov)

Fact sheets and brochures on specific health issues, statistical data, software and databases, 24-hour emergency telephone number

Citizencorps.gov (www.citizencorps.gov)

Coordination of volunteer activities and public preparedness in the event of a disaster

Community Emergency Response Teams (CERT) (www.citizenscorp.gov/cert)

Empowering citizens to become active in their communities, disaster preparedness and recovery education

Disaster Planning for Health Sciences Libraries (dtw2t.wordpress.com/)

Blog discussion on disaster planning from the University of Virginia

Federal Emergency Management Agency (FEMA) (www.fema.gov)

Disaster preparedness, response and recovery

National Incident Management System (NIMS) Incident Command System (ICS)

(www.nimsonline.com/nims_training/index.htm)

Essential training for anyone who does or will respond to major (or even minor) incidents, training required for FEMA funding

National Oceanic & Atmospheric Administration (NOAA) (www.noaa.gov)

Real-time weather, satellite images, warnings for severe weather,

Ready.gov (www.ready.gov)

Instructions for creating safety kit, safety plans, information on being prepared

Solinet (www.solinet.net)

Disaster prevention and protection checklist

Weather Channel (www.weather.com)

Weather glossary & encyclopedia, current weather conditions, five-day forecasts, severe weather alerts, local weather, travel information

National Criminal Justice Resource Center for riot reports, etc. – hard to get full-text of reports in timely fashion since Library didn't have credit card. Veterinary journals such as Avian Diseases were very useful. PubMed needs more links to full-text journals that can be purchased as pay-per-view with online receipts for reimbursement. I don't know if all the new disaster-related titles offer a pay-per-use option

3.2 Academics/Researchers

One of the most valuable sources for me is to attend the annual APHL (Association of Public Health Laboratory) National Conference and also to meet with various directors of public health laboratories. I learn more about the requirements and needs of public health laboratories during a public health emergency and then analyze how information technology can provide solutions.

Books

- Emergency Management, the American Experience 1900-2005, Claire Rubin, Ed
- Jane's Guide to Hospital Emergency Management and Response Joseph Barbera
- Managing the Unexpected, Karl Weick
- Individual and Community Responses to Trauma and Disaster Robert Ursano
- International Disaster Management, Damon Coppola

Technical Reports

- Medical and Health Incident Management (MaHIM), J. Barbera and A. McIntyre, on ICDRM website, www.gwu.edu/~icdrm

Journals/publications

- Natural Hazards Observer
- Journal of Homeland Security and Emergency Management
- Journal of Prehospital and Disaster Management

Web Sites

- FEMA higher education project (www.fema.gov/institutions/universities)
- Public Entity Risk Institute (www.riskinstitute.org)
- Relief web (www.reliefweb.int)
- Homeland security digital library (www.hsdl.org)
- FEMA national integration center (www.fema.gov/nims)
- Emergency Management Accreditation Program (EMAP) (www.emaponline.org)

Two resources are most applicable for both public and private sector entities:

1) *Project Public Health Ready* is a collaborative venture between the Centers for Disease Control and Prevention and the National Association of County and City Health Officials. Last published in 2006, this program evaluates local health department response plans to determine whether the jurisdiction is prepared to carry out all of its responsibilities in the event of an emergency. Response plan strength on such issues as workforce competency development, surge capacity, epidemiologic investigations, communications, and practice exercises are evaluated.

2) *Local Public Health Preparedness and Response Capacity Inventory* is a self-assessment designed by the CDC to help local health agencies evaluate their plans to respond to public health emergencies. It emphasizes legal preparedness, personnel development, surge capacity, risk communication, laboratory capacity, and vaccine distribution. (CDC, 2002).

I am a researcher interested in how multiagent systems can be used for modeling and simulating emergency response.

- International Journal of Emergency Management
- ISCRAM Conference Proceedings
- ISCRAM Website <http://www.iscram.org/>
- In general, any workshop proceedings concerning modeling and simulation for emergency response
- Robocup Rescue website: <http://www.rescuesystem.org/robocuprescue/index.html>
- AAMAS Conference (in particular how agent technology is used for Disaster Management <http://users.ecs.soton.ac.uk/sdr/atdm/>)

Humanitarian Practice Network/Overseas Development Institute – for best practices research, however I do not specialize in medical or public health research. All other sources fall outside the medical/public health domain.

The existing literature providing actionable guidance for public health incident response is limited. The most useful documentation is obtained from other fields and must then be adapted to public health:

1. Coast Guard guide to ICS – especially the sections on Incident Action Planning
2. Medical and Health Incident Management (MaHIM) System: A Comprehensive Functional System Description for Mass Casualty Medical and Health Incident Management (2002)
3. MSCC (Medical Surge Capacity & Capability)
4. VHA Emergency Management Curriculum (see ICDRM website)
5. Retrospective case studies & after action reports (these are white-washed and limited in their utility but reading between the lines and identifying the key issues can be very useful):
6. GAO Reports on the response to West Nile Virus '99; Anthrax 2001; XDR-TB
7. MMWR
8. EID (much more clinical & international in its focus)
9. CDC/HHS/DHS plans (strategic guidance to preparedness planning; often disconnected from practical response requirements which minimizes the utility of these documents)
10. Dark Winter & Topoff reports contain interesting observations and characterizations of public health organizational and decision-making tendencies when engaged in a response.
11. For biological agent specific information (incubation period; clinical diagnosis; prophylaxis etc...) JAMA, EID and other journals are useful. CDC.gov
12. Promed is an excellent source of information when searching for information on previous outbreaks or incidents.

13. Electronic Journal Databases:
14. Global Health
15. Ovid Medical
16. Journals – public health journals that sometimes publish interesting pieces related to emergency management:
17. The Journal of Public Health Management & Practice
18. Public Health Policy
19. The Journal of Urban Health (NY Academy of Medicine)

Please see attached slides for data and references (appendix). *Prehospital and Disaster Medicine* (<http://pdm.medicine.wisc.edu>); *MMWR*; *Science*; *Nature*; *J. Trauma Stress*; *Int Rev Psychiatry*; *South Med J*; *Annals of Emergency Medicine*; *Disasters*. The website of the World Association for Disaster and Emergency Medicine (<http://www.wadem.org>) and its Newsletter, *Insight*; *Disasters* newsletter and other publications of the Pan-American Health Organization (www.paho.org) (AMRO); *Bull WHO*; Special publications Department of WHO from Health Actions in Crisis, especially reports from Expert Consultations (most published in PDM) (www.who.int/entity/hac/about/structure/en/index.html); *Ann Surg*; *J Trauma*; *N Engl J Med*; World Congresses on Disaster and Emergency Medicine of the WADEM; European Masters in Disaster Medicine (www.dismedmaster.com); *Japanese J Disaster Medicine*; Asia-Pacific Conferences on Disaster Medicine;. Also, check out the extensive bibliography of the Delaware group led by Quarentelli. It may be very helpful to catalog the references used in PDM (available on PDM website).

4. International Professionals

ReliefWeb (www.reliefweb.int)

Various ODI Humanitarian Practice Network Publications

(<http://www.odihpn.org/hpnpubs.asp>)

Disasters (<http://www.blackwellpublishing.com/journal.asp?ref=0361-3666&site=1>)

Journal of Humanitarian Assistance (<http://www.jha.ac/>)

In an acute response phase, real-time information from the site of the event is most important. Sources include situation reports from International Organisations involved in first response (UN and others) and national/regional responders already on-site.

Background information about general local conditions and specific (e.g. health) aspects are useful, but in the initial response phase there is no time for in-depth consultation of such sources.

<http://pdm.medicine.wisc.edu/>

I am not a public health responder or professional. My focus is on strategic planning, particularly with respect to applying knowledge management principles and practices to science-based departments and emergency management. My sources of information and knowledge are highly diverse, rather than tied to specific journals. I am

connected to a handful of national and global knowledge management networks. These often point to useful or interesting articles in various professional and scientific journals. I may pose a specific question to these networks to get me started on a search. This often results in a pointer to a web site with what I'm looking for. I often also go to Wikipedia as a point of departure when exploring new areas that I am unfamiliar with.

I used to go to national libraries in both Canada and the US to find "tombstone" information about specific authors, books, or articles that I had found through other sources. However, I no longer do so. My success rate through libraries was on the order of 1/4 to 1/3; better than nothing, but less than complete. I now go to Google first. More often than not, Google points to a Wikipedia article with 100% of what I'm looking for. On other occasions, I can find most of what I'm looking for through other links, resulting in an overall success rate approaching 90%, in about one-third of the time.

<http://www.reliefweb.int/rw/dbc.nsf/doc100?OpenForm>

most information, first general and by clicking detailed information per source.

<http://www.who.int/ith/en/>

medical info, situations and guidelines

<https://www-secure.ifrc.org/dmis/login.asp>

deployment information and situation reports

<http://www.gdacs.org/>

alerts, situation reports, maps

<http://ec.europa.eu/environment/civil/prote/mic.htm>

EU info, technical capacities, support

<https://www.cia.gov/library/publications/the-world-factbook/index.html>

country information

<http://www.cdc.gov/>

medical information, backgrounds, guidelines

<http://www.ericards.net/>

specific hazard information

<http://www.mapaction.org/>

maps

<http://www.itg.be/itg/>

diseases, tropical guidelines, vaccination, country specific questions (Africa)

<http://www.iph.fgov.be/Index.asp?Lang=NL>

specific and environmental related problems

UNDAC handbook, and OCHA information in general.

Diplomatic network - the Belgian Embassy in the affected country

Used, and found useful, the following: Pubmed, MedScape, International Trauma Life Support (ITLS) courses. While I can not specify a particular journal as the best source for guidelines, algorithms and educational reviews, it may be useful to construct a database or search engine to encompass most relevant articles from various sources. These can come from either peer-reviewed journals, or from other public media (TV, newspapers etc.) Websites run by local national trauma organizations may provide excellent basis for such solutions.

3. Desired Sources

3.a. For emergency preparedness or response missions with medical or public health implications: What useful resources, services, or types of information are now missing or difficult to access or use, that you would like to see more readily accessible to all concerned? (either for a specific type of medical disaster such as a pandemic flu, and/or for general health aspects of emergencies; i.e., disease outbreaks after hurricanes or earthquakes).

1. Practitioners

I think the problem is not resources, it is finding the right ones and then knowing which resources are authoritative. A web search on any given topic will likely turn up multiple resources.

Easily accessible lists of potential contractors sorted by actual (rather than professed), proven areas of expertise; coherent journal pulling together selected articles that focus on emergency preparedness and response from wealth of sources (e.g., public health-related journals) in which those articles may be buried.

www.reliefweb.int

mailing lists posted at: <http://www.preventionweb.net/>

You should have a process in place that will say who will build the list, who will put out the assistance guide... the front line, the clean up volunteers is easiest to get. Moving back, case workers, that's a little harder to find. Who will coordinate the 100s of volunteers that are willing to go into your basement and take mud out (tell you what to do and where to go). In NJ 211 will take the request; there are 3 or 4 organizations inside and out of NJ to come in and clean up your basement. 211—who is that? It is the Methodists in one county, somebody else in another county.

I'm looking for information for people who have health related problems that they think are 911 related, but they are outside the criteria of the organizations now... if you have needs outside my area of expertise i don't know where to send you. Nobody will talk to me about how to get help to pay rent because you can't work.

We are trying very hard to make it common practice that every disaster large and small produces a complete and accurate guide as to where you, in this disaster, can get help and information you need. For example, how much bleach to I put in to prevent mold? How do i get help or information.. Eg, to call somebody who will put pressure get money from my own insurance company?... Anyway, a needs based, disaster victim oriented, comprehensive, up to date, accurate assistance guide--which does not talk about agencies but is agency centered. Which is organized by need, not by agency. This does not exist today, I hold my breath until somebody puts this together for each disaster.

Information about what other organizations are doing. What supplies, equipment, medications and personnel are "in the pipeline" on route to a disaster scene. Unfortunately, we are still depending on traditional (read: antiquated) means of communication:

I admit to being biased but the product that NLM has done with HHS, REMM is superb. It has all the information one needs- or darn close- to manage a radiation event.

Rad/nuc info is difficult to aggregate and find. Needs to be made intellectually accessible to those without radiation expertise. Using multimedia helps as this area is very technical. I work with those without expertise. Those with expertise don't need this. Audience in this area is very diverse.

Disaster, "After Action Reports", especially where lessons were NOT learned and the same deficiencies were present over time.

What FEMA planning course calls "implementing information" Standard Operating Guidelines (SOGs), equipment lists, job action sheets, MOUs/MOAs. There is a lot of clinical information, much of which is redundant, and not enough logistics and management info (by comparison).

There could be more user friendly models, like spread sheets, to estimate supply and personnel needs.

Data bases of existing health and medical organizations and resources and a database to track resources – hence the PHP DSS project I've been working on.

A comprehensive bio-defense strategy includes notification, response, and recovery from any type of biological event including pandemic, terrorism, or naturally occurring diseases. Bio-defense objectives include rapid detection, rapid decision making, rapid treatment, and rapid recovery, and throughout this process, public health's ability to provide timely and accurate information related to public health risk is absolutely critical to decision makers.

Public Health's role is to conduct a risk assessment of the situation (epidemiological and clinical, syndromic surveillance, etc.) and provide timely and accurate information to the stakeholders to maintain a common operational picture and more important make good decisions. Real time accessibility to essential elements of critical public health information during a biological event is key for decision makers. Right now there is no process or mechanism in place to share this information.

Interesting question. What I find terribly frustrating is the inability for 'internationals' to gain access to the considerable resources of a wide spectrum of US DHS resources sites and listservs.

2. Medical and Health Professionals

I think that websites such as REMM that are vetted by experts and provide rapid access to what you need to know in order to manage a certain event are terrific.

It would be ideal if there were similar one-stop-shopping sites for other threats. They would need a point person or two to communicate with experts to update the latest information and delete outdated recommendations.

A database with Disaster related instruments:

Pre Disaster HVAs instruments.

Psychosocial Assessment tools

Post Disaster Response Assessment instruments.

A database with National/State/City protocols and intervention plans

A data repository with National/State/City disaster drill data

A centralized data repository with raw data re published or research in progress

I think practical response advice what i would call on the CDC website technical response. So, for example, if an event takes place I don't necessarily need all the background information at that point i need the first steps or the checklist to go through of what to go through. So some sort of single source immediate action items advise, histories backgrounds etc for fast breaking activities. And i also think it has to be a source that is recognized as the accepted source because having ten different book from ten different companies or authors calls into question as to which one you should go to.

Best practices, best practices with summaries so if I wanted to know what the best way to handle an event is, I could easily find the best practices but not have to read the whole document to do that.

3. Other Professionals

3.1 Librarians

An electronic point of care database like UpToDate, MD Consult, or Dynamed would be helpful for situations where there is electricity and internet access. Otherwise, those resources would be useless.

- I would like to see more disaster planning and recovery information in Go Local. NLM could input national resources and local projects could input regional data.
- National guidelines for vendors of online medical information which facilitate access to information following a regional or national disaster.

APHA's Communicable Disease Manual (currently offered on CD, but not online?). This is available for online purchase on STAT!Ref, but most individuals are not aware of that access and it is not easy to print sections. Access to a high quality color printer to actually print out the great stuff online with images is a barrier.

3.2 Academics/Researchers

Information on how various agencies can collaborate and funding opportunities to expand research projects such as the STATPack system.

There are no clear national criteria for a) training and allocation of health and other personnel at the local, regional and national level; and b) allocation of scarce resources among populations affected, and assurances for equity in access to services and resources including basic supplies.

There is minimal education and training of civilians, in particular those who may be most affected by virtue of their lack of resources. Quite simply, most Americans would not know what to do, where to seek help, or what their “rights” are in case of national emergency.

- Integrated sources of after action information. Reports are agency or discipline specific.
- Source of vetted Lessons Learned
- Cross disaster comparison of health and medical impacts

The main problem for me is finding useful, real data on real-life emergency situations. This data is used to construct and to validate computer simulations and is essential in order to ensure their validity.

In addition I am interested in the coordination activities between different organizations during an emergency incident. Unfortunately there is very little information or real data on this aspect.

An all-hazard core Emergency Operations Plan (EOP) template for public health is missing. This is a key document that is currently not available for use in assisting public health agencies at the state and local level when developing their preparedness & response plans. The current focus is on hazard specific scenarios and ‘task lists’. These are not adaptable to a changing situation or at managing the unexpected, making them of limited use. ICS/NIMS based strategic and tactical guidance for public health emergency response is critically needed.

It is most important to recognize that very little of the literature and information is poorly structured making access to details very difficult. This lack of structure is the primary problem with attempts to build the science of Disaster Health. Most of the literature uses qualitative indicators and are anecdotal and hence, are difficult to index. Many of the reports are authored by non-governmental organizations and are not readily accessible for reference. There are standardized forms for reporting assessments or for identification of critical points of success or failure in the processes used. There are no standardized texts and no recorded standards for practice. Terms and their uses have not been standardized creating great confusion in attempting to organize the materials

4. International Professionals

Most important: Information on what is required on-site. In my own experience, a “random” delivery of generic sets of materials (such as the standard WHO “emergency health kits”) is a waste of resources, as much of such material is never actually used.

on line courses, more free on line for preparedness of GP’s for disaster, medical security on mass events (football match, concerts ...)

There has been one consistent unresolved issue with my work on various global information systems:

- G7 Information Society – Global Emergency Management Information Network Initiative (GEMINI)
- Global disaster Information Network (GDIN)
- International Union of Forest Research Organizations - Global Forestry Information Service (GFIS)

And that has been how to access the “grey” (unpublished) literature. It often contains the most up-to date and most relevant content. However, posting often involves considerable effort for provider organizations and may also contravene organizational mandates, policies, and security. This is often the content that one can access through trusted networks.

Besides the information sources, as mentioned above, a good personal network with various actors (both national and international) is very important, In crucial decisions, personal contacts are made, towards for example doctors (most of them specialists of different kind) and all the services of the Belgian Gvt and contacts abroad, environmental specialists, IT specialists...

Also the Scientific institute of Health has very well developed skills together with the Tropical Institute on several specific domains;

To create this network common education and trainings are the most important source. On operational level, it is most required to have access to all means of communication (telephone, internet) (mobile, satphones)

There is a general lack of publicly available manuals and online training programs for disaster management. Also needed are publicly available algorithms for specific disasters. These can be easily accomplished by introducing national organizations for disaster management, organizing courses in disaster management and providing databases of materials as described in previous answer. They could be supplemented with a moderated forum for exchanging experiences.

3.b. Can you give one or two specific examples of emergency situations or preparedness phases in which information was needed but was difficult to obtain?

1. Practitioners

The need that I know of for health services professionals to understand the needs of the patient for broader help, for human services... what if they are being discharged and they have no home to go to? How does that person get a home? When a paramedic is treating a person and the family needs disaster human services, due to the same disaster that caused the injury, then the patient and that family will do better if the paramedic knows what human services referral to give.

What I am frustrated about is that the public health sector does not look outward and say, for instance, “if I am going to call a quarantine, how will I get the cooperation of people, when they have to go to work, to pay their rent. I don’t hear any solutions to that problem from the health sector. They look inward, they don’t look outward.

I am looking for information for people who have health related problems that they think are 911 related, but they are outside the criteria of the organizations now. If

you have needs outside my area of expertise i don't know where to send you. Nobody will talk to me about how to get help to pay rent because you can't work.

We are trying very hard to make it common practice that every disaster large and small produces a complete and accurate guide as to where you, in this disaster, can get help and information you need. For example, how much bleach to i put in to prevent mold? How do i get help or information.. Eg, to call somebody who will put pressure get money from my own insurance company?... Anyway: A needs based, disaster victim oriented, comprehensive, up to date, accurate assistance guide

I am very concerned that emergency rooms will have people who will come and say, "where can i sleep tonight," they will not know. The health sector does not seem to see that it should have this concern with the human services reality. This might work against them, you are going to have people sleeping in the emergency room, and this gets in the way of the job they have to do.

I go back to 1999 with hurricane Floyd. Hurricane Floyd flooded several communities Manville, Bound Brook and when it did that it overwhelmed sewerage treatment plants, swept drums off docking areas for factories so what you had was this toxic brew and first responders were going into that rescuing people pulling people out of their houses. These operations were will advanced when somebody thought; what were they exposed to? So I would like to see better medical preparedness on the front end of an event. The world trade center is a good example. When I was up at ground zero I got up there, couldn't get out of Washington on Tuesday, I wound up getting out of Washington on Wednesday and got to ground zero on Thursday and I am not a phd. I looked around and said 'holy sugar.' I was literally walking in inches of dust, it was like being on the beach. I said to General Marshall; we're walking in pulverized building material, people, glass, furniture, equipment; these people should have respirators on. And yet a lot of people didn't. Maybe that's environmental health but I think there needs-- we are very good at assessing the risk going into an event-- is there an explosive device or are there shooters-- but are we really good at assessing the environmental risks and maybe that's the prevention piece that the medical community can address along with the more exotic things like tularemia, dengue fever that can be spread or anthrax .

I think there is an educational process that has to occur within the medical community, not necessarily among the licensed people like the medical doctors, but also those that are the structure the medical system rests on: the Rn, the lab technician, the radiology technican. People that will be handling the casualties on the front end, not the ones that will be doing the diagnosing and the treating.

1. When I've been deployed to Deep Field regions characterized by Destroyed Infrastructure
2. In the early phases of an event when one is totally dependent on media reports, the situation is so fluid that any information is either wrong, or out-of-date by the time you get it. Need to improve rapid assessment of needs (data for decision making, actionable threat awareness).

Prior to REMM, when one needed information on radiation management one had to go to about 8 sources- AFRRI, CDC, DOE, drug websites (for the specific drug) and

others. Plus you never knew if it was up to date information. This was terrible and motivated us to develop a system. For Chem- I would have to go to WISER but then try to look into drug management separately. No time for that!!!

Responses to 15 national planning scenarios

- ✓ TOPOFF-Very late information which appears to be softened and less than a frank discussion of what things went right and what went wrong.
- ✓ Overall there is an overabundance of literature and a dire shortage of action plans and disaster preparedness measurements of cities, states, territories and the Federal Agencies. Typical slogan is “While there is much more to do, we have made significant progress.”

Difficult to keep up contact lists of hospitals and other HC orgs.

A confirmed biological event at any major transportation facility requires access to real time information in order to assess the public health risk and start the recovery process.

2. Medical and Health Professionals

For preparedness purposes, I think it would be a tremendous service if someone could pull together by topic all the various grants, services and research across agencies and departments (plus a POC) so that we could reduce duplication of efforts and instead leverage our investments in preparedness activities. For example, I work in mass fatality management and periodically stumble across someone else (often within my own Department such as AHRQ or HRSA that would be helpful to know about, but is hard to find). Eventually, these could also be broadened to include a side sampling of “best” or “solid” practices developed by state and locals that could be shared and adapted by others.

Post the July 18th NY/Lexington SteamPipe explosion NYU and Bellevue Medical Center in New York could not effectively assess its medical team (emergency and hospital) response. A Critical Preparedness Group was then set up and an instrument was developed and is currently being tested.

One comes immediately to mind when we were when the Russian spy was poisoned with polonium something like that everybody was told that there was the possibility that others on the airplane could have been exposed. Well there was a person from New Jersey who called their physician and said, “I was on that airplane.” The physician called the department of health and said what are we supposed to do? We could not get good information on the way to handle a possible exposure to that even in discussion with CDC and discussion with our poison control center we really did not have a great response to that action. Fortunately we never got to the level where the individual got sick but there was no advise on what to do if the individual got sick. Who the authorities were on that type of exposure. So something like that was difficult?

If we had a radiological dispersion device I do not think there is common consensus on what the reaction should be to that device. And consequently I think that what we do would be very different than what someone else would do. Because what CDC would say would be determine what the isotope is, treat this isotope with this treat that isotope with that they would not say quarantine the area for a certain time, there are not the general activities that I could say alright from the department of health, working with DEP, from a medical perspective I am recommending the following. We don't have easy access to those issues.

3. Other Professionals

3.1 Librarians

Emergency Living Shelters after Katrina. Information for volunteer medical personnel was an afterthought.

- Following evacuation of New Orleans after Hurricane Katrina, health professionals and first responders in shelters in Houston had a great need for health information immediately. Pediatricians were caring for senior citizens, psychiatrists were caring for gynecology patients. No one had their medical records, nor prescription records with them. Access to quality information at a previously unauthorized site (Astrodome, George R. Brown Convention Center) needed immediately. One doctor mentioned the basic need of a PDR.
- Satellite communication or links to NLM databases and resources following the 2004 tsunami. Needed access from the field, meaning no available electricity and/or phone service.

For the RNC planning, we wanted to read candid versions of internal reports for RNC-like events. Most of the publicly-available materials were not as specific as we might have wanted. Also the indexing for heat emergencies in MeSH was confusing and not cross-referenced.

3.2 Academics/Researchers

- The 2001 Anthrax attack on Washington. Information sharing between DC Public Health, DC EMA, hospitals, and the public was atrocious. Decision making was ad hoc. No decent after action report exists
- 2005 Hurricane Katrina. Medication needs of evacuees and victims was not estimated, or reported, causing a crisis that could have been averted.

Katrina: significant documentation on this.

I work with a team of cognitive ergonomists who conduct field studies of 'close to reality' simulations (e.g. they participate in emergency response simulations organized by fire-fighters and rescue personnel). Often it is difficult to ensure that the information obtained is complete and consistent.

One of the biggest challenges when gathering information and alleviating uncertainty in a public health incident is knowing what information is obtainable within the amount of time available and what is not.

The following should always be obtainable:

- Baseline epi data on the natural and seasonal occurrence of disease in any given area (i.e. naturally occurring levels of tularemia in the Houston TX area for the month of Oct – this info was NOT available when needed in 2003)

- Epi data on the number of cases that occurred during previous years, at different times of the year

- Sensitivity and specificity of sensors and surveillance systems; diagnostic tests etc...

When issuing notifications and disseminating information to the medical community it is important to specify the type of diagnostic tests that were conducted to obtain results and the type of surveillance system used to detect a public health anomaly (i.e. when issuing a notification on sensors testing positive for anthrax in a Pentagon mailroom, if public health officials are told what type of tests were done (RT-PCR) then they can obtain details on the testing type and place the information into a better decision-making context).

- Clinical protocols (basic protocols should be available to hospitals and primary care physicians; additional guidance can be provided once more information is obtained or the incident evolves)

What is not available:

Detailed after action reports put out by state and local public health agencies describing the management actions taken to respond to an incident, including the resources used and what actions were especially effective and which ones were not. Lessons learned tend to be ‘lessons re-experienced’ in public health.

A major effort is underway to document the health aspects of the earthquake and tsunami that ravaged southeast Asia in December 2004. Access to the information has been extraordinarily difficult and much of the information already has perished.

4. International Professionals

Almost all of them. The problem is getting the right information to the right people in a timely fashion. We need to ensure that information is more widely available in advance of any response, because when the response is in full swing, generally there is not the time to do any research.

This is the case in almost all initial response operations. It is important to keep in mind, that during the acute phase of any emergency or disaster response there is one absolute priority: Use what is available to save lives. A medical practitioner could often benefit from specialized information, obtainable on the web or through telemedicine applications, but while he or she collects such information some patients might die, which could be saved with the knowledge and equipment at hand (and yes, this might be the practitioners bare hands . . .). This was also the conclusions of a symposium on telemedicine I attended in Germany some years ago.

preparedness of GP's for disaster, medical security on mass gatherings (football match, concerts ...)

This survey is going over similar ground to that covered by both GEMINI and GDIN. Just for the heck of it, I'll attach business cases for GDIN and GFIS (part of the "grey literature" mentioned previously).

- There is the classic infectious disease story used by Denning to "sell" knowledge management to the World Bank
- There is the request for up-to-date satellite maps of current lava flows in a remote region, that only has a fax machine to receive it.
- There is the recent SARS outbreak in Canada – "Tale of Two Cities" story in my presentation at the ISDS workshop.

I found it difficult to communicate amongst experts when the bird flu threat was raised in 2005. See this URL: <http://www.ontologystream.com/beads/healthInformatics/home.htm>

Just as it is important to be able to obtain information, these must be relevant. This emphasizes the need for national trauma organizations, and peer-reviewed materials that do not necessarily have to be present in a journal form (peer-reviewed web sites may do fine e.g.)

4. Organizing Information, Knowledge or Wisdom

4.a. What sort of methods or methodologies (e.g. specific search engines, trusted sites, organizations, other peer recommendations, email lists, filters, indexes, etc) do you use now to find useful material and/or to avoid information overload?

1. Practitioners

I subscribe to about a dozen list servers and about a dozen web bulletins/periodicals. From those I copy useful resources to add to my personal document.

DHS and HHS list serves

www.reliefweb.int

mailing lists posted at: <http://www.preventionweb.net/>

One of the dangers I see is establishing sources of good, credible, reliable information. And what I think, again one of the dangers is anyone can get on the web and be an expert. By cherry picking information from different web sites and then blogging this stuff. I tend to stick with just a few web sites. Because I can, I'm pretty sure, I would hope DHS vets what comes into it. And they certainly put all there, particularly the exercises and studies they do they certainly post and I know they go through a fairly rigid screening or process when they are putting up studies in terms of standards. Sum it up there is so much information out there but I'm not sure how much that is subjected to academic rigor.

I am currently unable to avoid information overload. I simply do not have the time to actively search the internet, read let alone quickly scan specific websites, journals, books. Unfortunate, but true. Usually the only electronic sources of information I look at other than email are material that is "pushed to me" -- for example, information feeds (RSS) from Alertnet, ReliefWeb, etc. and Google. Click on following:

So....in the area of timely access to information (let alone "knowledge or wisdom"), little has really changed over the course of my career (many of my colleagues and dear friend would disagree with me). The best information available is still obtained by telephone or meetings (i.e., talking directly with those in the humanitarian community whose judgment I trust).

The sources of data you mention above are useful. But you have to know the primary sources of such information. That's why I feel it is so important to talk with people "on the ground" in order to confirm such reports (particularly those that come from the media -- which is wrong about 75% of the time).

If I were to have access to the type of resources, services, or types of information that you describe above, I would want to be assured that there was some degree of "Quality Control" and "Attribution". Documents or reports from recognized organizations stating clearly the date and source of every document and facilities to validate the information, allowing users to assign their credibility. Hopefully, there will be peer pressures resulting from the use of this information by respected individuals and organizations in the emergency health relief community. The need to provide accurate, useful information in order to maintain professional reputations and where one can only expect other people to provide timely material if you do so. A critical mass of participation and data is needed before such dynamics can take hold.

I use Google and Pubmed. My filter is changing words in the search.

All of the above (listed in the question)

I find the on-line publication "Big Medicine" is an excellent source of straightforward unvarnished information. There in fact is a significant overload of information with insufficient concrete actions. This is especially true of DHS and HHS. There is a profound lack of leadership at the Federal Level. The states and local jurisdictions follow the Federal lead on issuing **Drafts, Primers and Interim Guidance. These are all manifestations of the Federal Government's unwillingness to lead the way forward by helping and providing service to the less well resourced state, local ad territorial jurisdictions.**

I have a pretty nuanced folder structure that I don't think many colleagues have. Lookout was a very good search engine for folders on hard drive and network folders and Outlook. MS bought it and it's now Windows Desktop Search. I depend on it to find info where I can't remember how I filed it.

For most tried and true information on chemical emergencies, I refer to the InfoMatrix as described above. I have also used "Bookmarks" in many categories within

an Internet browser, including publicly accessible lists of bookmarks such as *del.icious*, etc. to back up these choices in case I am in the field and cannot access the bookmarks from my desktop computer.

For delivering new and timely topical information, I use Google Alerts news filters. For example, I currently run daily scans of Internet news and blog sites using two different filters to stay informed about advances in online education in homeland security and emergency management. (In fact, I post the more interesting or informational links on my personal blog at <http://janusonline.blogspot.com>). As this blog matures, I intend to use it for future students as a way to monitor progress in learning but as a way to deliver topical and/or timely links to information.

The ICTW employs a secure web site as part of the EpiX Epidemic Information Exchange network, maintained by the CDC at <http://www.cdc.gov/epix/>. Members can access all posted documents and months and months of archived materials, organized via topical folders chronologically, once they apply for and install a digital certificate on their desktop computer.

In essence, I try and rely on specific streams of information that get delivered to me in addition to a network of Internet sites that have been arranged logically somehow in advance.

Department of Homeland Security Digital Library

Big Medicine has established a global network of ‘original source’ information. I’ve always found that true situational awareness is less about trawling for tons of information and more about knowing what you need at a certain moment in time.

2. Medical and Health Professionals

I rely heavily on trusted sites and peer recommendations. Another valuable source of information for me is attending conferences with SMEs – I’m not sure how you’d adapt that to this project, though. In general, I find that networking with SMEs and smart local, state and Feds is the best way to learn about things.

RefWorks is currently utilized to organize publications, and an access DB to address other sources and materials being used in separate projects related to disaster preparedness, and recovery. Also, in collaboration with the NYU School of Medicine Library we are currently planning on developing a data and publication repository to ease access and collaborative involvement of different units, entities and universities.

Other search engines and databases utilized include: OVID, MEDLINE, PsycINFO, EMBASE, Health & Psychosocial Instruments, Global Health, Lexus Nexus and CINHALL engines. Commonly Grey literature is accessed through Google, and Google Scholar.

I’m visual if I could go on web site and see a visual library with the book stacks and all those kinds of things which allow me to, geez this dates me, go to the catalogue pull out the card and click on the card and that takes me to the book and then I open up the index of the book and then I click on the topic that gives me an easy way to get where

I'm going. I need something that is so intuitive that I don't have to learn it the first time I'm on there and it can't be complicated but it has to the ability to get me down to the complicated data. It's just so much information and its everybody has something nobody has it all tied together.

What I've been trying to develop and if it were somewhere it would be great algorithms that are line and box diagrams where if I enter somewhere with a particular event I can walk myself through it and get to some sort of conclusion or help. And again that's a matter of being able to do decision making on the fly quickly without having to worry about the intricacies on a complicated site

- Up to date (website)
- emedicine (website)
- CDC
- WHO

3. Other Professionals

3.1 Librarians

PubMed, UpToDate, MD Consult, National Guidelines Clearinghouse, MEDLIB-L.

- PubMed is my trusted source for medical information, along with MedlinePlus. Go Local has great potential, as well.
- I use the disaster planning blog from UVA for the most recent discussions and information.

This is different for keeping up in general, versus dealing with something in the heat of the moment. In general, I have update searches in PubMed/My NCBI and receive the email updates of some key organizations. In an event, I use pre-existing filters such as what journals I have access to, or limiting web searches to .gov or particular organizations to find information that my audience will find reliable.

3.2 Academics/Researchers

- Google is still the easiest way of locating information
- Web sites listed above
- Informal network of individuals
- Peers in the public health field;
- American Public Health Association;
- Centers for Disease Control and Prevention. (2002). *Local public health preparedness and response capacity inventory*. Retrieved August 22, 2006 from <http://www.astho.org/pubs/inventorylocal.pdf?PHPSESSID=83e96be6a7cebfcad401decf8385ed44#search=%22%22local%20public%20health%20preparedness%20and%20response%20capacity%20inventory%22%22>.

- National Association of County and City Health Officials & Centers for Disease Control and Prevention. (2006). *Project public health ready*. Retrieved August 22, 2006 from <http://www.naccho.org/topics/emergency/pphr.cfm>.
- The National Center for Environmental Health (NCEH) (2005) Public Health Emergency Response Guide for State, Local, and Tribal Public Health Directors.
- The main problem is a lack of information and data in the area of modeling and simulating, rather than a case of information overload.
- Receipt of emails which give calls for relevant conferences or journals is useful in finding material.

www.reliefweb.int

mailing lists posted at: <http://www.preventionweb.net/>

- Promed
- Google (information overload can only be avoided by browsing links that belong to a reputable media, scientific or academic organization)
- <http://www.phpreparedness.info/index.php> is the link to 'Resource Guide for Public Health Preparedness', a very useful database search site for related documents.
- USDA alerts for food borne outbreaks and recalls.

As noted above, there currently is no standard methods for organizing the information. The WADDEM is in the final stages of recommending a structure for the reporting of information (Health Disaster Management: Guidelines for Evaluation and Research in the Utstein Style, Volume 1 has been published and suggests a Conceptual Framework, *Prehospital Disast Med* 2003,17, Supplement 1) and Volumes 2 (Structural Framework) and 3 (Research Framework) are in the final stages of edits and should be available this spring (2008). The Structural Framework attempts to standardize the information into longitudinal structure and a transactional framework. Perhaps, current information should be forced into this structure to make it more accessible. A consensus conference on terminology will be convened by the WADDEM and WHO-HAC mid-2008. The NLM is welcome to join in these efforts. The *Sphere Project* (www.sphereproject.org) is a good example at first and second shots at defining standards and best practices.

4. International Professionals

ReliefWeb is the key website for the entire humanitarian community, since it aggregates a large amount of content from a variety of sources (UN, NGO, Red Cross, government, academic). Its weaknesses are that it only makes available public information that organisations choose to submit, and it is still not structured in a way that makes navigation easy.

The sites that I mentioned above I subscribe to (either physically or by RSS) and then use their publications as a jumping-off point for further research. I subscribe to a couple of mailing lists and run a couple more, but there is very little activity out there –

most of what is, takes place in the context of specific sector groups (watsan, health, emergency shelter, etc) and is too specialized to be useful for me. (In particular, I think a number of the UN Cluster groups have been working online in the last two years.)

This must be part of early warning: An organization or institution providing emergency response needs to collect information about a specific threat as early as possible and make it available in consolidated (short !) format to the decision makers (emergency managers) implementing the operational response.

PubMed, Google

Trusted sites, see above and known (inter)national contacts, together with UN colleagues world wide.

I avoid Google for information needs. I believe only in Ontologies for biomedical information and that tool among peers.

Most reliable sources of information is Medline (Pubmed). However, introduction of a international organization for disaster management with official web site and national chapters with their own web sites could provide needed information specific for a given region.

4.b. Are there ways or methods you would like to see material in this area organized, indexed, clustered, processed, and/or filtered that would make it easier for you or others to recognize that something new might be of use to you or others in this area? Or, what would you like to see done to cut down the time to find useful new material?

1. Practitioners

Unfortunately I have found that it takes somebody knowledgeable (me) to go through all the various resources and pull out what is useful. I also am a generalist in terms of interest in all things medical/public health, with a strong interest in everything else available in the homeland security field. Many, many, many organizations are trying to be the “be all and end all” of an information source and none are really succeeding at this point.

Using the SNS list serve as an example, there are so many submissions that it is tempting to read none. Somehow they need to be categorized, and it needs to be possible to unsubscribe to portions of a list serve or to filter in what you would like to receive.

Yes, but once my area of interest has a richer volume of scholarship...unlike public health/medicine, the field of humanitarian information management is still very sparse and the literature is comparatively very weak!

Different pieces of information exist at different levels of the emergency relief "information pipeline", but not in a form which is easily accessible or immediately made available to emergency personnel. We need some means to consolidate, filter, organize and redistribute such information and other existing sources of data to the right people, at the right time, in the right format, etc.

This will be difficult to achieve on a large-scale. Would require a very knowledgeable individual to do the organizing, indexing, clustering, processing, and/or filtering. Basically, a "documentalist" who will retrieve only the relevant information on behalf of the users. Will also need an expert such as an epidemiologist to consolidate data from a variety of sources, formats etc... and most importantly to synthesise information.

Finally, we need to have some form of "Feedback Monitoring" - A constant reassessment of the methods and effectiveness of those methods to determine if they are achieving its objectives - questionnaire, listservs etc..

Again, I am biased, but REMM is what I wanted- an algorithm based response that is useful as a management tool but has all the detail I need otherwise.

Need web portal for each of the 15 national planning scenarios (link all relevant information by each scenario)

Yes. Universities, Institutes and the Federal Government need to provide consulting services (often referred to as technical assistance) to Grant Awardees and other governmental and Private Sector Healthcare entities. We need less guidance and much more hands on assistance.

I like how sharepoint will notify you if something has been added. See attached sharepoint site design I implemented. Hasn't been used much yet by planners in my counties, but I believe it will be used as more needed info is available on it.

Continuing use of methods by which individuals can get specific streams of content they desire delivered to them is very important. Combining meta-search engines, news filters, blog filters and RSS or XML feeds into e-mail packages or as text messages delivered to personal devices (like iPods, etc.) *is* the wave of the future.

I am not sure how the material would be organized to make it easier to use. An idea would be to categorize by functional areas-Bio-terrorism, pandemic, flu, etc.

There are several search engine applications that are of interest to me, i.e., aftervote

2. Medical and Health Professionals

Again, I really like the REMM format. However, with more resources, this could probably be mined even more to include the "just-in-time" features as well as a really well-indexed reference list or something along that line. I also find that password

accessed special interest groups such as are found on the Lessons Learned Information Service are a great way to collaborate and learn.

Possibly by year, author, keywords, relevance to the topic, and also MESH terminology where available. A search engine similar to OVID but specifically for disaster related topics could be helpful.

Applicable federal documents as we go through the new National Response Framework, the National Response Plan the TCL's all those kind of things. They are huge huge documents that nobody in their right mind has the ability to read. And index that says here are all the federal documents but divided in a certain way and again walking you through so that it starts with the strategy and goes down to the universal task lists. Something that makes that easy, an index that makes that easy. So that's the federal plans. Best practices, best practices with summaries so if I wanted to know what the best way to handle an event is I could easily find the best practices but not have to read the whole document to do that. And then standard references so that if I needed to know what a chemical was I could just easily get to that chemical easier than going somewhere else.

3. Other Professionals

3.1 Librarians

I would like to see a list of texts a typical medical library should have on hand and be ready to deploy in an emergency. I would like to come up with this list and write about it in the medical library literature, but I have lacked time to get this project started.

I think the NLM could have a single page with links to disaster information for medical personnel. It wouldn't have to include disaster planning information, which is all I ever seem to find when I search. When you are in an emergency, you just want content, not planning guidelines. How to treat, what to do now, etc. There seems to be very little information around that gives concrete directions on what to do and in what order. It all seems to focus on having materials ready. But then what do you do? This knowledge may be ingrained in medical personnel, but it is not in librarians. We are taught to worry about our collections and prevent damage to them. But what are we taught about helping people on site? Nothing. What do we know about the emergency information needs of medical responders? Very little, I'm afraid, which is why I want to ask them.

NLM could either incorporate information into the UVA blog, or create a blog of your own. You have two types of clients needing information, librarians and health professionals, who overlap, but might need two different blogs and/or websites with this type of information.

I would like a way to know if free full-text is available from looking at Google results. This indicator would save us the time of following the link. The IP-based solutions won't always work for public health workers as during investigations, they are often in other institutions with their own IP-based resources that then become available.

More search engines used by preparedness websites should highlight words/phrases in context.

3.2 Academics/Researchers

- A website that synthesizes practical information and categorizes it by type of emergency, level, and intended audience—must also be useful for and intelligible by the general public
- Dissemination of simple, straightforward information through communication channels accessible to all (not just the Internet) and linguistically and culturally appropriate; these can include for example: workplaces, health care providers, churches, schools, grocery stores, libraries, shopping centers
- It would be useful to have more mailing lists, or a central website concerned with modeling and simulating emergency response.

Yes, but once my area of interest has a richer volume of scholarship...unlike public health/medicine, the field of humanitarian information management is still very sparse and the literature is comparatively very weak!

Organize information (case studies; plans/protocols; guidelines) by country; by state; by hazard; by responding public health agency (local, state, federal); by response outcomes.

Emergency Operations Plans for all public health agencies should be made available to the public health sector (bearing in mind that some people perceive this to be a security issue).

Nothing absolutely outstanding. Very little emergency management material has been adapted specifically to public health.

Some state or local procedures and protocols are more effective than others (NYC; FL DOH)

NIMS/ICS online training for public health is still very superficial with little of the necessary management & tactical training.

My thoughts are described above. Please see PDM, 2005;20(6):355-365; the 1st part of this article incorporates the framework. The summary of the health effects of the earthquake and tsunami book is being structured using the longitudinal and transactional frameworks and will be published summer 2008. Also, I believe a literature clearing house should be organized.

4. International Professionals

I would like to see more community-based approaches to material, particularly using social tagging to create a more grounded taxonomy – the one we currently have is heavily predefined by the Cluster system. An aggregator of academic publications that might be useful in disaster response, from a range of journals in different topic areas,

would be very useful in helping the humanitarian community to access this expertise – at the moment, it's just too difficult and costly for us to stay up on current research.

Be prepared (see above). Responders need a “briefing kit”, which responders can read through even last minute (e.g. on their flight to a disaster location, followed by continuous updates on development and on background compiled by one dedicated source (e.g. the entity responsible for the specific field of response).

You may wish to consider Google's approach and/or folksonomies or tagging. There's a couple of really fascinating videos on YouTube that talk about Web 2.0 and organizing information. One on the Information Revolution and the other on Web 2.0; both are by Michael Wesch. If you haven't seen them, you should. Unfortunately, our IT security people have deemed both YouTube and Facebook to have no valid business purposes, so I can't simply send you the URL.

- a) Need for validated, trusted info, on demand during emergency, (log in website – e-mail) without extra's or overload fieldwork.
- b) more general site for during non emergency, background, training purpose, information tool, index per disease, region, emergency? But also equipment, basics, specialties, common use, int'l standards (for treatment and equipment) and contact data base for exchange views, experiences,...

Google is an example of a bad choice for searching information on the web. All the distraction caused by the haphazard arrangement of information and the thousands of advertisements is a cause of information overload.

Detailed and proper use of MESH terms that may be applied to all sources of information, regardless of the source.

5. Current outstanding examples

5.a. Are there any other specific medical, health care, public health disaster plans or training materials or web based resources that you consider outstanding examples of such material? Try to give enough information to locate the materials and/or some example websites having such material.

1. Practitioners

LLIS and the CDC web site are probably the top on my list. But it depends on what someone is looking for in particular.

Actually, King County Washington has some excellent material

So there is a lot being written on the medical side but you pick up some of these medical articles its so steeped in jargon and professional terminology that its over my head. So I think trying to embrace technology as a panacea and create these websites we still need to keep in mind how people learn. And web sites might be good for you and me

because we have advanced degrees. But I go back to experiences, you know most of the fire departments in this state or a large percentage are volunteer. You know obviously in the big cities you have paid fire departments and maybe I'm thinking about Southern Burlington county some of these towns like Mount Holly, Mount Laurel they'll have some, they'll have a core of paid augmented by volunteer firemen but when that siren goes off they leave their jobs they might be working on the roads department of they might be working in Home Depot. I think its wishful thinking that you are going to mass educate with the internet I still think we need to go back and have instructional classes where you have the interaction of the people. I know they are doing that in the fire academies, the fire departments still do that when they have drill but I don't want us to make this sudden rush to judgment that the internet and portals are going to answer our educational needs exclusively. And particularly as the information get very, very technical. We'll get into things like radiological disbursement devices or go to back bio-terrorism or even agro terrorism. I

Internet 2.0. Wiki, Blog, Forums, Social Networking, shared work spaces like Groove, use of cell phones to reach isolated, deep field populations (everyone on planet earth has a cell phone). Voxiva has taken the lead in the area of "Phones for Health" initiative with the Global GSM Alliance:

Here are two of the best examples. With Voxiva, they are the future (all three CEOs are younger than 40!):

Below (L) my friend Joel Selanikio of the DataDyne group and Paul Margie of the UN Foundation discuss the creation of DataDyne and how they work with country governments and use technology to improve health data systems. Below (Right) Dr. Joel Selanikio described how his open source software is helping to improve healthcare in poverty-stricken areas of Africa.

REMM- (www.remm.nlm.gov)

See REMM

I know of no outstanding examples of Internet courses which significantly advance disaster preparedness.

I think the tools I helped develop through the ICTW and state of Michigan merit special attention if simply from the perspective of doing training of public health emergency partners on chemical emergency preparedness, response and management.

2. Medical and Health Professionals

As noted, REMM and CDC crisis communications materials.

3. Other Professionals

3.1 Librarians

What disaster related content is in WHO blue box libraries?
There are a lot of duplicate materials that should be made available in customizable, translated versions to save re-work time and effort.

3.2 Academics/Researchers

Dr. Barbera and Dr. McIntyre's Training and competency development material produced for the Veterans Health Administration will be on the VA and ICDRM web sites very soon.

Not perfect but better than most: National Association of County and City Health Officials & Centers for Disease Control and Prevention. (2006). *Project public health ready*. Retrieved August 22, 2006 from <http://www.naccho.org/topics/emergency/pphr.cfm>.

The ISCRAM website is a useful resource and starting point. Also proceeding from conferences or workshops dealing with emergency response.

See above. Currently, there are about 50 training courses being offered worldwide. The material varies substantially as best-practices and competencies have not been defined. Several initiatives are underway to define competencies and best-practices in this truly multidisciplinary field. One of the major contributions towards this end is the extensive bibliography being developed for the Tsunami summary noted above. Currently, there are almost 500 references catalogued.

4. International Professionals

Because courses for disaster medicine are very expensive, more free on line education are needed for some countries.

Non health: Virtual osocc (see above) as validated – trusted info
GDACS (this one gives alerts), but perhaps similar mechanism with practical – local – regional health info, diseases, treatments, protection / vaccination required for the team,
In country health capacities, equipment available, what to bring in, and local methods and standard of treatment

WIKIPEDIA has a better layout and I prefer it nowadays to all other search engines.

5.b. What material not currently available on the Web would you like to see there?

1. Practitioners

Vital baseline health data (e.g., potential health risks in countries) and other focused background information in advance of disasters (e.g., large scale populations

movements, forced migration) to minimize mortality and morbidity from preventable causes such as measles and diarrheal diseases. This will require the identification of potential risk areas around the world for disasters, vulnerable populations, mass population movements, and to target these countries for contingency planning and advance health information gathering. Such information must be closely correlated with data obtained from FEMA, USAID, the UN, WHO, NGOs and other organizations that track potential disaster-affected countries and populations.

Easy to find medical management for Chem terrorism

Certain journals are not subscribed to by NLM or NIH and it's difficult to get articles.

I have long felt that there is good info the military has produced that is not classified, but not easy to find. See <http://www.au.af.mil/au/awc/awcgate/awc-lesn.htm> for an amazing set of management related info. More theoretical, framework type of information is harder to organize in easily accessible ways than technical info mentioned above. I continue to be amazed by the usefulness of Wikipedia to quickly survey and understand a new area.

I would like to see a better version of the MiTER tool I described above. A tool that quickly allows someone with little to no background in toxicology, air pollution, and exposure assessment to locate an appropriate exposure standard for air, water, soil, etc. This allows local health department and response agencies to more independently answer the "When is it safe to go back to my house?" question. It is not uncommon to call upon the experience of a state level employee, often hours and/or many miles away from the site of the emergency. Tools like Web WISER put the information needed to make the decisions (as well as tailored ways to deliver the content, dependent on one's role in the emergency) in the hands of local responders and planners. If agencies like FEMA are going to tell localities that all emergencies start locally and that these affected localities need to expect to be self-reliant for up to 72 hours, then we all need to work harder on getting easy-to-use tools in their hands based on high-quality information sources... thus reducing "information overload" on that level by "controlling the pipeline" (i.e. restricting available information via easy-to-use free tools that use previously vetted and approved information).

2. Medical and Health Professionals

My own pet project is mass fatality management. I'd love to see a website that brings together the different Federal departments that "own a piece" of deaths (e.g., DOJ, Social Security, HHS) as well as professional associations, local medical examiner/coroners, public health officials, and other stakeholders. I think there would need to be a series of meetings first, though, to define the goals of the website, a system for determining what would be located there, etc.

3. Other Professionals

3.1 Librarians

- Local response efforts (list of shelters, first responders, etc.) in the event of a major or even minor disaster. This is where I see a major role for Go Local.

Also a mechanism to get questions answered in one place that then shares the info back to all for future FAQs – questions that we got about risk of smallpox vaccination site exposure to pets and whether pet’s water needed to be boiled in blackout are examples. Our agency’s action plan contained sections that would have been useful to others developing plans, but they could not be shared. . Knowledge of internal reports even if for limited audiences with audit controls. More full-text online journal articles are needed.

3.2 Academics/Researchers

I would like to know what journals are available to publish research on emergency response systems and information system solutions for emergency response systems. I have not spent much time searching for journals, so there may be resource I am not aware of. But it would be helpful.

See response to 3A and 4B

One thing that is important is the views of real rescue personnel on the problems encountered. Often it is easy to find the standard procedures that rescuers should follow, but people don’t really work this way. If you are building a simulator it is essential to know when and why people diverge from the prescribed way of working. Currently, I find this information from interviews with rescuers.

We currently are struggling with standardization and placing more disorganized materials on the web will be of little value. The question remains as to how we will organize the materials from hereon out.

4. International Professionals

Personally, I would go to either the US CDC or the Canadian equivalent. Alternatively, I am more likely to enter the subject in a Google search and go to sites that seem to be trustworthy (e.g., John Hopkins, government sites, national institutes)

I have authored a chapter International Institute for Knowledge Management recently. If you use the acronym IIKM in Google it returns Indian Institute for Knowledge Management. The reality is the Institute as of now does not exist. It is in the process of getting established and so the insight is medical information must be entirely dis-associated from all other types of information.

Expert opinions, consensus statements, national and preferably international guidelines

6. Roles of Libraries, Librarians, and Information Specialists

What are the current or potential roles and/or services for Libraries, Librarians, and/or Information Specialists in any phase of the Emergency Preparedness and Response process? Are there other particular services a local or specialized library should or could provide?

1. Practitioners

It is difficult because these people are not users of the information – they are not field folks or actual emergency management professionals. That makes it difficult/impossible for them to even understand some of the resources they are looking at.

Yes, creating and maintaining a taxonomy for my field would be a welcome contribution from the Library Sciences, so that as the body of knowledge and literature grows, it is usefully archived.

In a community disaster, every human service agency is a disaster agency. The pastor, the social worker, in a community that has had a disaster, everybody needs to know how to make a good referral. There is an emergency manager in every county. They get all the agencies together in one room after a disaster and that is their coordination. There is no institutionalized mechanism for the coordination of relief and recovery information after a disaster... Actionable and complete.. people have to know what exists so they don't duplicate it. Coordination, mutual awareness of information that exists. This is certainly an area that libraries can help to support.

I think the core mission of Libraries, Librarians, and Information Specialists in the Emergency Preparedness and Response process should be to foster the transfer of knowledge among the different stakeholders, and policy makers in order to improve society's resilience to disasters and other emergencies. Stakeholders would include planners, implementers, managers and monitors of emergency preparedness and response activities, strategic decision-makers for the allocation of resources, deployment of relief efforts, implementation of preparedness or preventive measures and those deployed to the field. In achieving these goals, libraries can pursue a host of activities depending on the phase of a disaster (preparedness, planning, response, recover, reconstruction), type of emergency and the various disciplines involved (for example, public health professionals have different information needs than clinicians, those who provide direct "hands on" care of patients). Of course, a major activity would be to serve as a local, State, regional, national and international clearinghouse of knowledge concerning all of these different aspects of disasters. Information specialists can also collect and share research and experience related to preparedness for, response to, recovery from, and mitigation of disasters, emphasizing the link between hazards mitigation and sustainability to both producers and users of research and knowledge on extreme events. This leads to another

major mission of libraries which is to strengthen communication among researchers and the individuals, organizations, and agencies concerned with reducing damages caused by disasters.

Other particular services a local or specialized library could provide include: reference services, databases, education, outreach, interactive web-based instruction and presentations, etc.

Online libraries are key

These folks are and have been doing an exemplary job in their areas. We need How-To information and Hands-On guidance.

Helping individuals better understand how to find and organize information ‘developmental’ information is very much needed. Some of the skills that academics take for granted would go a long way to help emergency professionals who don’t have the academic background of physicians or similarly trained personnel.

A crucial need it just to keep track of plans and supporting documentation mentioned above. See attached diagram of FL health and medical disaster plans (only at the state level).

I have found the Specialized Information collections at NLM to be of great use (and were at one point, if not still, listed in the InfoMatrix mentioned earlier). Maintenance and continued development of these collections (perhaps in response to events or trends, like climate change) is of paramount importance to the federal libraries. Continuing to work with specialists to identify high-quality information and developing easy-to-use methods of delivering specific content is also very important.

I’ve often thought it would be incredibly valuable to have librarians built into emergency plans. One of the projects I was involved in involved the use of an InfoRetriever technology that was tied to a specialized reference library system. I wonder if SirsiDynix [or one of the other players] could not create an application that would allow for access to their ‘rooms’ application – with a ‘tribal elder’ librarian in the loop to control for quality and essential wisdom.

2. Medical and Health Professionals

I learned from the NLM folks that some hospitals have medical librarians round with them, who can quickly provide an annotated bibliography of the most important/germane articles. I have frequently asked our OS NLM librarian for assistance in searching topics I’m not familiar with. I can see where there could be a great collaboration of librarians and SMEs to produce something like the National Center for PTSD’s newsletters in which a particular topic is explored and an annotated bibliography is provided. It’s very helpful for busy clinicians and others to get a quick overview.

Currently our NYU School of Medicine Library/Librarians support:

- Research in the disaster preparedness/management/recovery field throughout our projects.
- Data repository development, and publication sorting and classifying.
- Thematic analysis at different levels through the projects.

I would be interested in, and I don't have an ultimate answer, but I would be interested in having the ability to go to a librarian and say I'm interested in the latest pan flu information that has come from the feds and not have to do everything myself and be able for them to give me that information.

I'm apprehensive about the pushing of information because we get so much pushed at us that it might be overload so if there is a role that the individual had and it was pushing it would have to be very controlled otherwise it will get lost in something. Now whether or not you go to an Amazon.com model and you have here's the top ones you should look at these days or something like that it would have to be a resource that was not taxing to the user. And again it's a time, people, amount of information problem and balancing all of those against the information that's really going out.

3. Other Professionals

3.1 Librarians

Onsite and remote reference service, emergency literature searching, collection and distribution of information materials

- I think librarians need to be more involved in disaster/business continuation plans for their larger institutions. I have become very active in campus-wide planning at the Texas Medical Center. At first, many people wondered why the library was involved, but now they have me chairing committees. The best thing to do is volunteer.
- Librarians need to take NIMS ICS training to the 300 level at least (the numbering of the classes does not make sense—the order to take ICS classes is 700, 100, 200, 800 and then 300. There are many classes in between, but these are the basic). This training will help librarians respond to a disaster and will also be required for future FEMA funding. Most of these classes are made available for free online. I recently completed ICS 702 in two hours from home.
- Librarians can also get involved in their local Community Emergency Response Teams. I am an active volunteer for the Brazoria County (TX) team, which is the county where I reside. By volunteering, I learn a lot which benefits the library, I make a difference in my community, and I also might actually have something constructive to do in the event, such as Pandemic Influenza, that I am not allowed to work in the library, due to quarantines.
- Medical librarians should apply for Governmental Emergency Telecommunications Service Cards (<http://gets.ncs.gov/>). It took us five months to be approved, but we finally got our cards in October 2007. We used the NLM initiatives as part of our justification for cards, as well as our experiences following Hurricane Katrina.

Literature searches for planning support. Copies of articles.
In EOC, looking up responses to questions raised.
Participation in call centers taking questions from public – helping shape responses into understandable FAQs and making sure people can find them

3.2 Academics/Researchers

GW Library has built (with our help) a very comprehensive disaster reference search capability

See 3A and 4B. Absolutely librarians and libraries should play a key role; could both distribute information and be a community focal point for educational programs for community members.

Yes, creating and maintaining a taxonomy for my field would be a welcome contribution from the Library Sciences, so that as the body of knowledge and literature grows, it is usefully archived.

They could be requested to assist in mining, aggregating and compiling information so that existing info can be easily analyzed by public health decision-makers and provide context for their decisions.

These persons could be involved in attempts to organize the principal works that currently exist in the literature and force some of the material into the structure. Future reports must be structured.

4. International Professionals

I think it would be very useful to create an international network that allowed librarians and archivists in developed countries (where most of the resources are located) to share expertise with those in developing countries. It would also be useful to lobby for more publications to adopt Creative Commons licenses for works that deal with disaster preparedness and response, since it is hard to justify proprietary approaches to this area – a project such as this could be a powerful voice in that regard.

In terms of what local libraries could provide, I think the simple act of networking this information will help local actors to access information. Certainly there is the issue of protecting and recovering records, which is a critical issue in many disasters, and something which would have a large impact if we can develop best practices for general distribution.

They should develop, update, and keep available concise material for use by practitioners on shortest notice, see item 4 above.

To send information about new articles, sites, relevant courses about subject of interest

I don't see all that much change needed. Only a rethinking of the business model that libraries have used for the past 2,500 years! I have recently given a presentation to the Eastern Canada Chapter of the Special Library Association on this very subject: <http://www.slideshare.net/Al.Simard/the-knowledge-economywherefore-libraries/>

The above is in PDF; I will attach a PowerPoint copy to a separate e-mail (4 mb). When you view the presentation, you will see why I believe that the initial questions in this survey are not the right questions to ask.

Also see: <http://www.slideshare.net/sirexkat/what-is-library-20/>
There are a number of other library-related presentations on Slide Share

New search tool for special cases, more exceptions, and background wise, non decisive or conclusive content most of the time, when operational there is a need to decisive, filtered information, no need to scientific comparing , discussions...

- Libraries must be equipped with real-time Emergency Telemedicine Networks. Sweden is the first country in the world to have a national infrastructure for Telemedicine. Librarians must become an integral part of the Nation's Emergency Preparedness and Response Team.
- Every State in the United States of America must appoint a State Library as the National Nodal Center for Disaster Management. Every nodal center must have a DATA CENTER hooked 24 hours worldwide to a major news service agency with a 24 hour News Relay Team.
- If a situation in USA like the California fire occurs the data must be transmitted to every nodal center in America and an ontology must be created forthwith (The cost of creating and maintaining an ontology is roughly 1/3rd of a database system)
- The ontology is then updated to reach the highest standards of quality and then archived and made available to the world community. Users could be WHO, NGO's dedicated to Disaster Management.
- Information that is real-time can be relayed to Red Cross , Salvation Army, etc for paramedical support.

7. Extreme Events

If you had to consider an "extreme" but possible event (e.g. a pandemic, another Katrina, or a large earthquake) would this add additional information requirements relevant to any of the other questions on this survey?

1. Practitioners

Emergency info management and flow is another topic and needed area. Once we know the specifics of an event, multiple agencies begin producing new guides and resources. My "Katrina list" was mostly new stuff which came out post-landfall. So we need a base of knowledge and then a system to add the latest info as it is created.

Only reliable update information

Yes indeed, particularly in "human generated" events: Chemical, blast, technological, transportation, radiological, nuclear emergencies etc. that would require very specialized information requirements. Just off the top of my head, additional information requirements relevant to any of the other questions on this survey would include baseline health indices, diseases, in-country capacity such as the following:

a. Health data such as:

- epidemic risks

- incidence and prevalence of communicable diseases and vaccination coverage

- nutritional status

- country health profiles and other public health information such as status of local health facilities and the availability of other material resources

b. Basic ethnographic data on populations at risk of adverse health consequences from disasters. This could include some medical anthropology data so that health programs and interventions could be made more culturally acceptable.

c. Database of in-country NGOs and UN agencies and their resources (this may include many development organizations, but many of these may also have emergency relief capabilities). Ideally, this would include list of key individuals and points of contact information but such information may change too often to be readily kept up to date.

d. Description of the country's disaster plan, if any. Specifically, this would include what ministries, etc. are responsible for preparing for and responding to emergencies.

e. Organization of health professional training in the country of origin (e.g., amount of training A1, A2, and A3 level nurses have in countries at risk of violent conflict such as Sierra Leone, how many years of university education and medical school a clinical officer in an earthquake-prone country such as Venezuela, and the type of post graduate training or mandatory rural service of physicians). Perhaps such background data about health professional education would help in recruiting refugee health workers early during the course of the emergency and assist in establishing training programs for refugee health workers which are compatible with the educational system at home.

f. Logistics: warehouse capacity, availability/price of gas/diesel, air/road access, telecommunications (e.g., availability of landline phones, mobile phone cells, electricity), etc. Again, this may not be feasible for an entire country, but may be possible to gather such information for selected areas such as border regions which are most likely to house refugees.

g. Local and regional laboratory capabilities for identification of causative organisms and antibiotic sensitivity testing, drug resistance (e.g., to chloroquine) and nearest reference labs for cholera, shigella, etc. If not available in-country, should note guidelines for transport.

h. In-country production capacity for and availability of drugs, jerry cans, cooking kits, etc.

i. In-country availability of food stocks

Need to have contact information for emergency resources (beside 911). Many agencies numbers are impossible to find or you get general numbers that are useless.

Yes. America needs actions and assistance teams which offer hands-on assistance to jurisdictions. Measurements of Disaster Preparedness must be much more frank in order to make the types of improvements in our Disaster Preparedness.

Specific, more current information than may be in a plan, about health care system impacted or response resource available. Hence the PHP Decision Support System project I've been working on.

I would think improbable extreme events would always add specialized information needs across all time. Look how low-probability events – like the Tokyo sarin gas attack of 1995 or the impossibly hard-to-fathom attacks of 911 in New York City – have massively impacted the need for planning, management and response documents that virtually all require specialized information and, in many cases, hard-to-find information. I think it is important to recognize that the future is uncertain and hard to predict and that systems need to be built that are flexible to the needs of rapid specialized information delivery, as an outbreak of “monkeypox” might require. (Or as my “meth lab” lecture audiences love to ask me: *What's the next drug we have to get ready for?* A question I never have an answer to and can only allude to the former part of my previous sentence.....)

2. Medical and Health Professionals

It would highlight the importance of a REMM-site, but in these cases a very truncated presentation of key things to know in response, recovery and mitigation.

3. Other Professionals

3.1 Librarians

Depends on the event.

- I think both Katrina and the tsunami offer the best examples of how to access health-related and or disaster-related information in extreme conditions. I think you should interview health professionals and first responders who have the actual need. Dr. Scott Lillibridge (Scott.R.Lillibridge@uth.tmc.edu) spoke at the NN/LM SCR RAC meeting a few years ago about his information needs when in Asia following the tsunami. He had some very specific suggestions for NLM.

What level of web traffic can the best, trusted sites handle? If they can't handle the load, where do they redirect? If we lose Internet, where how to disseminate information? If schools are closed, librarians with families are not available to fulfill their roles, unless library plan incorporates school planning. Is there hazard pay for staying in an area deemed at risk?

3.2 Academics/Researchers

- Social vulnerability information
- Infrastructure information
- Scale and scope
- Breakdown of local and regional government and social infrastructure

The basic information described previously should be available irrespective of severity of event and should be widely disseminated in advance.

Extreme events could make it very difficult to access information electronically on-site. Information and documentation may need to be gathered elsewhere and sent in.

Only if it is structured, The so-called lessons learned have not been learned, but only recognized. Because of the extreme disorganization, the lessons are not readily accessible and hence have not really been learned. The same errors are repeated again and again. When and if the information becomes organized, the lessons actually will be learned and the positives will be used in the development of best-practices and the negatives analyzed so that their antithesis hopefully will be incorporated into standards and best practices. From these will evolve educational and training courses based on standards and best practices.

4. International Professionals

Not really – most of the events that I have worked on would qualify as extreme in that sense!

No. In all situations it is vital to have

- a) real time information on what is happening on-site,
- b) real time information on what is (already or still) available on-site,
- c) background information (e.g. on specific medical implications due to location, climate, nature of the event)

Personal opinion – The potential consequences of a Katrina were well known in advance. It was understood by professionals that the existing dike system could not withstand a category 4 hurricane. The political and policy decision was to do nothing.

It all depends on how one defines extreme events. If they are of the “Black Swan” variety (e.g., Taleb), then, they are, by definition unpredictable and more or less unknowable *a priori*. They have not occurred before. Therefore, there is no literature to be made available. Further, what literature would one search when the possibilities are more or less infinite? This observation defines an end point. The question now becomes how far from then point must our systems be before they are manageable in a practical sense.

Magnitude of devastation and destruction cannot be predicted with mathematical precision and accuracy. Speed of response is dependent on an individuals’ survival quotient and possession of survival and combat skills.

8. Your critical topic areas

In terms of creating an index (general ontology) out of a sample document database that can then be used to automatically classify new information as it occurs, what would you want included in such a database and what specific topic areas would you want to see in the resulting index or ontology?

1. Practitioners

See my document and the categories which have evolved as being useful to me (Note: included in examples).

- Remote sensing
- Geographic Information Systems
- Global Position Systems
- Geospatial Analysis
- Cartography
- Geovisualization
- Humanitarian Knowledge Management
- Disaster Risk Reduction

Basically, the information above. Perhaps classified in terms of information useful before, during and after a disasters. That which is useful for education, clinical care, research, recovery, reconstruction etc. The bottom-line, any document database must satisfy the following criteria to be useful:

- Proactive provision of health information and data for useful for advance contingency planning
- Easily-accessible, "one-stop" health information source
- Reduction of morbidity and mortality from preventable health problems related to disasters
- Improved targeting in advance planning and stockpiling
- Cost-reduction in contingency planning

Threat agent

Organ system- toxicity

Medical countermeasure

Diagnostic tests

Management

See the SPHERE Project for a great system of information needed to manage disasters and refugee information in developing countries. CDC trying to adapt it to disaster planning materials in several states, FL included.

I like to use the risk assessment classic triplet to try and organize information like this:

- 1 – What can go wrong? (i.e. define Event X)
- 2 – What are the consequences if Event X occurs?
- 3 – What is the likelihood (probability) of Event X occurring?

As such, you can begin to align information that would be needed along this basic categories and define subcategories as needed. For example, “What can go wrong?” would include basic information behind the “science” (or known facts) of a particular event.

“What are the consequences..?” would include measured impacts or expected effects or outcomes, such as health effects of a chemical, outbreak potential following a flood, etc. “What is the likelihood...?” would include any knowledge of epidemiology of an outbreak, the areal extent of wetlands that can reduce the effects of flooding as well as expected effects of containment and/or mitigation techniques.

2. Medical and Health Professionals

Agents Diseases and Other Threats:

- BioTerrorism
- Chemical Emergencies
- Mass Casualties
- Natural Disasters
- Radiation Emergencies
- Recent Outbreaks and Other Incidents

Also see <http://emergency.cdc.gov/agent/> the CDC categorization layout was ideal for our project publication/ repository purposes.

10. General Concepts

- a. Basic physics of disasters
- b. Triage
- c. Pediatric considerations
- d. Infectious diseases
- e. Pharmaceuticals
- f. Critical Incident Stress
- g. Complex Humanitarian Emergencies

11. Disaster Response Planning and Coordination

- a. Disaster planning
- b. EMS in disasters
- c. Public health in disasters
- d. Urban Search and Rescue
- e. Federal Disaster agencies and response (CDC, DMAT, DHS, VA etc..)
- f. State and local disaster agencies and response
- g. Communication and information technology Tools
- h. Managing disasters in austere environments (including Wilderness EMS)
- i. International level response, planning & coordination
- j. Incident Command System
- k. Disaster Drills

12. Natural Disasters

- a. General information

13. Infectious disease epidemics / pandemics

- a. General info

- b. Planning / response / coordination
 - c. Local / state / federal level
- 14. Industrial, Technologic and Transportation Disasters
 - a. Radiation accidents
 - b. Hazmat-related disasters
 - c. Mass gatherings
 - d. Maritime disasters
 - e. Air crash disasters
 - f. Fires and mass burn care
 - g. Internal hospital-related disasters
- 15. Conflict-Related Disasters
 - a. Conventional terrorist bombings
 - b. Nuclear detonations
 - c. Intentional chemical disasters
 - d. Biologic weapon agents – including vaccination information
 - e. Tactical EMS
 - f. Mass Shooting
- 16. Education, Training, and Research
 - a. Education and training
 - b. Research
- 17. Personal accounts from deployments
- 18. Disaster Medicine Resources / References

3. Other Professionals

3.1 Librarians

- Not sure I know how to answer this one. Whatever is created must be incorporated into MeSH, since that is the thesaurus we depend on.

Specific on causative agents (etiology), communication methods, strategies, response groups (Red Cross, fire, police, health departments, etc.), event duration, etc..

3.2 Academics/Researchers

Information Technology Related Topics (in the context of emergency response systems) such as

- Information Overload Research for User Interface Design
- Data Visualization
- Network Security Designs
- Telecommunication Internet (Intranet) Networks for Public Health. In Nebraska we have the Telehealth Network that can be used specifically for the STATPack project at no cost for Internet Usage.
- HIPAA considerations during health emergencies
- Issues that are unique to rural communities.

Decision making during extreme events. The relationship between public health and emergency management decisions and decision makers

- type and level of emergency level
- roles and responsibilities of key actors (general)—clearly delineated with hierarchical clarity
- types of resources and services required, where to access them, and who is responsible
 - health (including for emergency services and maintenance of chronic care)
 - social services
 - food and other supplies
 - housing
 - access to financial support and personal finances
- legal rights and responsibilities of key actors, including the general public

Agent based simulation, modeling and computer simulation

- Remote sensing
- Geographic Information Systems
- Global Position Systems
- Geospatial Analysis
- Cartography
- Geovisualization
- Humanitarian Knowledge Management
- Disaster Risk Reduction

- Plans/protocols by locality;
- Plans/protocols by hazard;
- Clinical & epidemiological guidance by hazard;
- Public information guidance by hazard (public health has been notoriously awkward when issuing public information, leading to a whole different set of problems);
- Case studies searchable by hazard, country, state, response organization, outcome;
- Guidelines disseminated by public health organization at federal; state; local level;
- Disease reporting requirements by locality;
- Diagnostic testing information by agent/hazard;

Please see references noted above. Drafts of documents can be provided on request.

4. International Professionals

It would be interesting to use indexing software to automatically index and develop such an ontology based on keyword frequency. I think this would be an interesting exercise in itself (showing areas of strength and weakness in both the database collection and the current literature) but it would also complement the implicit knowledge held by practitioners.

Medical security of mass events

Whatever ontology is created by librarians is unlikely to be used by contemporary practitioners. Authors won't use it because they are forced to fit their work into categories that never quite fit. Searchers won't use it because the term that they are using isn't the same one that the author used. One only has to observe that of all the ontologies created by librarians to date, why are none of them used by any of the popular Web search engines???

Precision engineering is the key word that will describe the ontology.

9. International Considerations

The national Library of Medicine has an important role in aiding other countries in the accumulation and dissemination of medical information and knowledge.

a. What specific contributions in the above disaster information areas might be important for NLM to provide internationally?

1. Practitioners

The language thing makes it hard. I work exclusively with English resources and most of them are from the US. Many of these come from government agencies and so they may be useful as background but every country has to work within its own rules/laws.

Core public health plans (eg. necessary for evaluating flows of people, food, and between countries)

Normally, when a disaster strikes, we frantically call various international organizations such as WHO, UNICEF, IFRC, ICRC, OFDA, NGOs, and contacts in various other organizations to obtain decision support information. Fact is, we're lucky if we can do the former. There is no time available in the emergency response timetable. One stop shopping approach both enables and saves time.

If NLM can more or less provide such service, international disaster relief may become more effective because we would be able to achieve the following:

- (a) - more targeted intervention instead of the present stereotypical cookbook approach
- (b) - effective stockpiling
- (c) - geographical pre-positioning
- (d) - improved targeting of rapid health assessments
- (e) - briefing or orientation packages for staff deployed to the field
- (f) - knowledge of key players, roles and coverage for improved operational coordination

- (g) - better strategic decision making by senior managers
- (h) - provide an entry point for relevant expertise at NIH, CDC, HHS, FEMA and other organizations where necessary

By facilitating more efficient targeting of response, NLM will contribute to more efficient use of shrinking funds for international humanitarian assistance.

General knowledge is universal. We might want to include threat agents that are not prevalent in US but would impact other countries.

IAEA and WHO are helpful

The greatest service the NLM could perform would be in the area of Operational Consulting. As an HHS full partner and using a core of real-life subject matter specialists, the NLM should develop a “National Readiness Vision” of what American Healthcare and Public Health Systems should look like in normal and in disasters. Then, the NLM should send out measurement teams which would evaluate system Preparedness and the steps that are necessary to elevate each jurisdiction’s healthcare and public health disaster preparedness to the standards depicted in the “National Readiness Vision.”

Continued development and delivery of timely and/or internationally topical specialized information collections.

2. Medical and Health Professionals

I think there would need to be special efforts to include information that is useful to developing countries that doesn’t rely on high tech solutions that we have in developed countries. A lot of care would also be needed to make it culturally appropriate. Last, but in many ways first, it would need to entail a dialogue with stakeholders to see what – if anything – they would like from such a resource.

Same kind of material but multilingual

3. Other Professionals

3.1 Librarians

Influence all health and law enforcement libraries to be open to govt. public health workers as needed. Negotiation with vendors to change purchasing models for articles and archiving plans/COOP for subscribers. Group of trained library professionals willing and able to serve [EIS or DMORT model]

3.2 Academics/Researchers

Collaboration at the international level with other ongoing emergency planning activities (e.g., WHO, World Bank, EU, regional and bilateral donors) and prospective planning with countries, taking into account financial and other resources.

I worked on a project in France concerning modeling the rescue procedures of medical personnel. It could be useful to see how these compare with other countries and also what technology medical rescuers use to convey information back to the on-site rescue coordination centre (gaining accurate and up to date information on victims is always a problem and we are concerned with developing technologies on how this may be improved) .

Public health tends to have distinct organizational cultures that vary by country, these need to be clarified when providing public health literature/material from each country. The US has a federal system that impacts the way public health receives its funding and takes actions during a response, a hierarchy that influences the way decisions are made and resources are allocated, though the underlying public health science remains the same as anywhere else.

But making as much quality (validated methods) public health information available as possible on a global scale would be an invaluable service. It may be that one country has devised a method for running rapid outbreak investigations that is more effective than other methods currently favored elsewhere.

By their nature, disasters are international. The evidence base should serve the global community. Countries may make modifications based on their cultural and economic status. Specific benchmarks must be defined that will enable the world community to eventually reach the optimal state.

4. International Professionals

I think it would be very useful to create an international network that allowed librarians and archivists in developed countries (where most of the resources are located) to share expertise with those in developing countries. It would also be useful to lobby for more publications to adopt Creative Commons licenses for works that deal with disaster preparedness and response, since it is hard to justify proprietary approaches to this area – a project such as this could be a powerful voice in that regard.

In terms of what local libraries could provide, I think the simple act of networking this information will help local actors to access information. Certainly there is the issue of protecting and recovering records, which is a critical issue in many disasters, and something which would have a large impact if we can develop best practices for general distribution.

Brief summaries of the health situation in countries at risk from natural or man-made disasters;

Brief summaries of health implications of specific emergencies (floods, earthquakes, industrial accidents, conflicts) under the specific environmental (climatic, social, logistics) conditions to be expected in different countries/regions.

(Content for briefing kits as suggested in item 4 above)

- Has anyone considered the language problem? Automatic translation is poor, at best. Translation is still essentially a human activity. And that costs money.

Wikipedia gets around that only through contributions of passionate and dedicated voluntary contributors. It is a huge issue (and big barrier to communication) in Canada and we only have to deal with two languages.

- What about culture? A readily understandable analogy or metaphor in one culture may well be meaningless in another. And even though documents may be translated, a perfectly innocent word in one culture may not be so in another culture.
- And then there is the global infrastructure necessary to enable other countries to have access. This is no small issue when many recipients are beyond the end of the pipeline and cannot access many of the wonderful graphics available on the web.

NLM has to project itself as an International Repository for Disaster Management and allow the United Nations to foster a program of affiliation with all Member States.

9.b. What contributions from other countries could be made to NLM in the disaster information area? This could include important information sources in other countries not traditionally used in the U.S.

1. Practitioners

See above. That is a problem in emergency management – even within states in the US. What works and is allowable in one jurisdiction is irrelevant anywhere else.

Pandemic planning, local government methods of dealing with health emergencies

Discussed above under "Lessons Learned", particularly Question#7. Particularly information available only in-country such as baseline health data (e.g., potential health risks in countries) and other focused background information in advance of disasters.

Two excellent international partners and sources of health information that might be difficult to access in the U.S. are CRED and ADPC (click on their logos below). Their focus is on developing countries, Africa and the Asia-Pacific region, and countries at high risk of civil conflict and natural disasters. Their extensive collections of books, journals, conference proceedings, etc. also have many non-English publications that are rarely read, or available in this country.

First hand experience. We get that in rad/nuc

Best practices and “lessons learned” documents from the international community for emergency events would be a big boon to the entire global emergency management community.

2. Medical and Health Professionals

One of the great things developing countries could teach us is how to respond if all our high tech solutions (internet, advanced medical technology) fail such as if there were large blackouts or in events like a large earthquake, etc. We had a lecture from an old Army nurse one time and she explained that they always taught about ways to improvise should equipment not work, etc.

Multicultural and Multilingual resources

I know that there's a lot of people that look at Israel as a model for mass casualty incidents whether I agree or disagree with that I have seen presentations that give information on Israeli best practices. If there is information on best practices from other countries the one or two I might be able to get might be beneficial but again it has to be very very easy to get to. I can't afford to read ten documents to get one sentence. I'd love to be able to but just don't have the time.

3. Other Professionals

3.1 Librarians

- Access to quality health information in the event of a disaster
- Work with other federal agencies, such as CDC, in disseminating information on global topics such as SARS & Pandemic Flu.
- Develop alternative ways to access the resources made available by NLM (similar to WISER)
- More promotion of the toxicological family of databases. I know first responders who still rely on small pocket cards. Education in what is available and how it is available from the point of need.

Assessment tools (Culturally and linguistically relevant). Directory of on-call personnel with training and expertise.

3.2 Academics/Researchers

Analysis of data collected by UN (WHO, OCHA) on medical impacts of disasters, public health issues etc. World Bank and UN have studied this more than the US has

The Nordic countries have excellent disaster relief plans, but are predicated on strong health and social safety nets that we do not have in the U.S. – a serious impediment to effective and equitable disaster relief planning. The DOD is an important resource that may be overlooked by NLM – would strongly suggest interacting with their Civilian Medicine office if not already doing so.

The red plan and white plan standard rescue procedures used in France may be useful.

Public health practices from Australia could be very useful given a number of similarities; countries which tend to manage acute public health problems related to newly emerging infectious diseases could also offer valuable recommendations.

This could include important information sources in other countries not traditionally used in the U.S. As one participates in the world and regional congress, it is clear that disaster is a world community. Information provided in these forums generally is universal and I doubt specific exceptions must be made. The only adjustments will be related to cultural norms.

4. International Professionals

There is a lot of material in other countries – local contingency plans, lessons learned, case studies, etc – but it is difficult to access as many of these documents are either not in digital form or are held locally. By providing an example of open document collection, NLM could work with other institutions in these countries to encourage and help them to share more widely, thus building recognition for their contributions. However this would have to be done through official institutions – either government or academic – which would bring its own bias away from community-based approaches.

National emergency response organizations and institutions, including non-governmental organizations, are often overlooked. Reports from such as well as international sources can provide valuable inputs to resources in the sense of item a. above, needed by practitioners.

Sounds to me like one needs to think in terms of global networking, not case-by-case additions. Librarians really do need to rethink their business model.

The SIPRI experience can be used to formulate a mechanism for data exchange with UN Member States.

12. NLM experience (if not mentioned in prior answers)

Have you ever used MEDLINE/PubMed or any other NLM system (e.g. WISER REMM, TOXNET) to find information related to Emergency Preparedness or Management? If so characterize your experience and reaction.

1. Practitioners

I know most of them exist but have not used them more than just looking once or twice.

All of them. They're terrific. The gold standard. For example, click on the PubMed header:

I love medline. In the early 1980's I was trained as a medline searcher (the old days when you needed a number and had to pay). WISER would benefit from treatment algorithms. I don't know bio world well enough.

I have done extensive literature searching using PubMed/MEDLINE for over 8 years now, including special research into public health preparedness and hazardous substance response applications. It is an invaluable resource.

2. Medical and Health Professionals

As part of the Large Scale Emergency Readiness (LaSER) Project at New York University's Center for Catastrophe and Response we are working with the modeling and computer simulation to successfully integrate information databases such as WISER and TOXNET with the NYU Laser Plan C Model (www.nyu.edu/ccpr/laser).

I have for literature searches on articles I was working on

3. Other Professionals

3.1 Librarians

I looking in NLM's book catalog for ideas on the types of books to recommend for a group that asked for a list of books to have in an emergency shelter, and I had a really hard time. In the end, I had better results from Amazon.

Yes, PubMed frequently. Need to have public health emergency similar to clinical emergency for NLM Document Delivery service.

3.2 Academics/Researchers

Yes; mediocre.

I use MEDLINE very often but predominantly to find scientific or clinical articles to supplement my work. There is very little information related to public health management or public health emergency management. My experience has been similar with PubMed.

This is a very difficult task as the material is so scattered and unstructured. Keywords generally are inadequate in the MESH index.

13. Anything we left out

Please add any other information or comments that you think we should have asked for or any question you think should be added to this response guide.

1. Practitioners

There is a lack of a smooth interface for the victims of a disaster in transferring from the health care process to the community service process. Often this occurs long after the immediate occurrence of the disaster and a meaningful hand over process needs to start when the person is still in the health care process.

There is no clear cut legislative or executive mandate on the obligations of government in reacting to a disaster. It is not clear what is the explicit goals of government actions or the mandates for action, whether it be local, state or federal when it comes to the details of what a person or community is entitled to. Said in a different way there is no current single ethical stance of what the responsibilities of government are at any level of government including the affected community.

There is no place, no venue for the hosting the dialogue on what is from the relief and recovery point of view, about what are the good things and bad things about our present legislative environment? Are FEMA's programs just right, or more than the federal government should do, or shortcomings? What are the states' roles? California has legislation that adds to what FEMA does. Do other states have this? What is NY state's top human service legislative priority? Florida has one—pay for removal of hurricane debris from private property. When we hear that in NY we have not experience that need. New York's top issue: after 9/11 150,000 jobs were destroyed. People who lost their jobs needed help to pay their mortgages or rent. There was a federal program to pay the mortgages.. This has now passed out of the law, so any new disaster would result in evictions or foreclosures. I'd like to see a national dialogue on programmatic preparedness.

This is an administration that is incredibly touchy about anything in the news. You can't even be quoted in a house organ.

Probably the most important question. This should be answered or determined before any project that provides some "service" can start, let alone hope for success. We must know who comprises the following groups (my opinion is stated below each group):

1. Beneficiaries:

My opinion is that these are the actual or potential populations affected by disasters and other humanitarian emergencies, suffering from, or at risk of preventable mortality.

2. Information Suppliers:

Holders of baseline health and background data pertinent to emergency health prevention, preparedness or response in disasters and humanitarian emergencies.

3. Information Partners:

Subset of Information Suppliers who have signed a formal information-sharing agreement for a defined data set.

4. Information Users:

Planners, implementers, managers and monitors of emergency preparedness and response activities.

5. Target Audience:

Subset of Information Users: strategic decision-makers for the allocation of resources, deployment of relief efforts, implementation of preparedness or preventive measures and those deployed to the field.

6. Stakeholders:

Participants in the project who are in a position to advise on its course, content and methods.

7. Investors:

Contributors to this project of financial or human resources on a general or geographical basis.

This may sound rather cynical, but everybody will be asking: "That's all well and good, but what's in it for us?" "What's in it for you", I'd reply. I'm glad you asked me that question. At no cost, you and your organization will be getting:

1. 'Value-added information' - information which gains value and importance by consolidation, analysis, context, structure, maintenance and availability. This constitutes knowledge in the data-information-knowledge-wisdom ladder.
2. One-stop shopping - timesaving, consolidated information resources
3. Geographically-focused data - the easiest to use method for finding the information you are looking for
4. Tailored service - Information packages on request (e.g., a briefing pack for field staff). NLM benefits from providing this information because the chances are that others need similar packages.
5. ** Decision support - Fulfillment of the users objectives. They get structured, key and targeted information to help them make better and more timely decisions. Which in turn helps them reach beneficiaries more effectively with the right stuff, at the right time and targeted to the right (most vulnerable) people.

I think that ReliefWeb does the best job of doing this. But they provide very little information for the health and medical relief community. They tend to focus on transportation, logistics (tents, latrines), communications, fuel supply, food distribution.

It would be wonderful if the NLM were to be asked to join HHS as a full Partner in preparing America for future disasters. I would gladly join the NLM consultant faculty in providing technical assistance to cities, states, Public and Private Public Health and Healthcare entities.

The same mini-serfdoms that exist across agencies that preclude effective interagency planning and response at the federal level are just as strong at the state level.

The overall preparedness community suffers from information hoarding and "information asymmetry" to borrow a concept from the recent book *Freakonomics* (Levitt and Dubner, 2006)

2. Medical and Health Professionals

Assuming we're talking about organizing literature (written documents, and, perhaps, videos) in relation to emergency preparedness, we'll need to define:

- Scope of the emergency for which we are preparing - anything that requires, or may require, a public health (including clinical) response that decompensates, or may decompensate, the local, region, or national public health/care system. All of these terms will need to be defined, especially the scope of "public health." Presumably, to be useful, it would have to encompass all aspects necessary to prepare for and to

respond to the envisioned emergency. That may take us into areas that are not generally within the domain of NLM.

- Coherent conceptual models for emergency preparedness - eg, prepare, respond (to threat, actual event, etc), asses aftermath, act to cope and improve (repeating the cycle)
- Scope of literature/resources to be made available to implement whatever conceptual model is adopted; how responses are to be collected, indexed, and made available
- Scope of assessment of assembled resources, ie, what's worth considering, especially, based on empirical evaluation of cost-effectiveness - no mean feat
- Scope of quality improvement efforts related to all of the above.

Emergency preparedness encompasses 2 essential aspects: Natural disasters and Terrorism. With respect to the latter, there's a potential "game theory" aspect: The more information is made accessible to disaster planners and responders, the more it may become available to terrorists, allowing them to thwart potentially preparations and responses. That would argue for limiting access to information resources, rather than making them generally available. Restricting access to such resources may inhibit the ability to collect them from some (eg, foreign) sources, if these sources are deemed to be "leaky."

There are at least 3 dimensions for preparing and responding:

- Widespreadness of the threat or event
- Seriousness (including duration) of the threat or event
- Thoroughness (breadth and depth) of preparation and response for each point in the matrix formed by the above 2 dimensions.

In public health terms, the issue is how much, and to what extent, is the public health system likely to be (or has it been) decompensated? There is, of course, a related issue: What's the planned reserve capacity for each point in this space (and how can it be maximized at any level of resources)? Compare an explosion at an oil refinery in a well-resources metropolitan area with a worldwide pandemic with a virulent organism that affect 10-15% of the population at any one time over the period of a year. A key aspect of preparation and response is likely to be information systems, not only in terms of surveillance of threats, but also of capacity to respond, before, during, and after an event, and how that capacity can be managed dynamically, including, eg, transporting, safeguarding, and supporting first responders and health care workers (however the latter are defined).

With respect to literature, there are 2 general approaches:

- Panning for gold
- Compacting trash.

Panning for gold essentially depends on using experts to identify the "good stuff" (and indexing it according to a coherent conceptual model of what it is necessary to know). This approach allows the easy identification of gaps in knowledge that could be the focus of future research. The emphasis here is on "facts" (or, using another metaphor, the relevant and valid contents of vessels).

Compacting trash essentially means collecting everything that appears to be relevant, indexing it, and asking users to find what they need to know. This approach epitomizes the current WWW. The emphasis here is on "sources" (vessels whose contents might be relevant and valid for the purpose).

3.2 Academics/Researchers

Suggest addressing ethical issues related to distributive justice, etc. at the meeting.

END OF COMPILATION

Appendix D:

Details of International Websites

Important International and National Websites

Compiled by Hal Newman
Managing editor of Big Medicine
(<http://www.bigmedicine.ca>)

Regional organizations launch Redhum, the new humanitarian website for Latin America and the Caribbean [Last verified: Nov 9 07/ Panama City]--OCHA announced the launch of a Regional Humanitarian Network for humanitarian actors and organizations. It will facilitate easy access to the voluminous natural disaster and complex emergencies information in the Latin America and the Caribbean region through a Website in Spanish, www.redhum.org.

One of Redhum goals is to provide easy and organized access to quality and updated humanitarian information from the region that will allow for better preparation and response in the event of a disaster. The site will provide internationally the latest Situation reports on emergencies, calendar of activities (training and meeting), on-line contact lists of Who is doing What Where (3W), maps, and vacancies. Redhum, as a website and a network, also brings about best practices in terms of response capacity of the relief community through the timely and transparent dissemination of information on all humanitarian emergencies.

Redhum is an interagency initiative based on agreements with the Secretariat for the Coordination Center for the Prevention of Natural Disasters in Central America (CEPREDENAC) and the Regional Disaster Information Center for Latin America and the Caribbean (CRID); it is supported by the Regional Interagency Working Group for Risk, Emergencies and Disasters (REDLAC) and works closely with national disaster management authorities through SG-CEPREDENAC. Six Redhum information assistants have been posted so far in Central America within national disaster management authorities to facilitate information exchange, reinforce the humanitarian network and strengthen capacity building. A further extension to South America and the Caribbean should provide better coverage in 2008.

Inspired from other information management initiatives such as Southern Africa <http://www.sahims.net> and Colombia www.colombiassh.org, Redhum has been developed in complementarity with ReliefWeb, the global information system; Redhum is funded by the Spanish International Cooperation Agency (AECI), the Swiss Agency for Development and Cooperation (SDC), the Government of Kuwait, and OCHA.

Business and Industry Council for Emergency Planning and Preparedness (BICEPP)
[Last verified: Sep 29 07/ Los Angeles CA USA]--For many years, emergency

preparedness and contingency planning were thought of as a luxury. Corporations were reluctant to allocate the necessary time, staff or funds to prepare for the possibility of emergencies such as earthquakes, hurricanes, tornadoes, fires, or floods. Many chief executives mistakenly believed that the sheer size of a corporation would ensure survival. It has become increasingly clear that government's primary responsibility is to restore basic public services before rendering assistance to the private sector. Direct aid to individual businesses was not on the priority list. As a result, it was recommended that the private sector be self sufficient for a minimum of three days. In 1983, the mayor of Los Angeles and a group of business leaders met to discuss disaster preparedness. This group subsequently became a steering committee and formed the Business and Industry Council for Emergency Planning and Preparedness (BICEPP). www.bicepp.org/index.asp

British Columbia Provincial Emergency Program [Last verified: Sep 29 07/ Victoria BC Canada]--The Provincial Emergency Program (PEP) is a branch of the Ministry of Public Safety and Solicitor General, of the Government of British Columbia. The Acting Executive Director of PEP is Cam Filmer. PEP has its headquarters in Victoria and incorporates six regional offices in Surrey, Kamloops, Nelson, Terrace, Prince George and Victoria. <http://www.pep.bc.ca/index.html>

Canadian Disaster Database [Last verified: Sep 29 07/ Ottawa ON Canada]--The Canadian Disaster Database contains detailed disaster information on over 700 natural, technological and conflict events (excluding war) that have directly affected Canadians over the past century. The database helps citizens and government to better assess and manage risks. As well, it's a valuable resource for researchers and students to see how disasters and our vulnerability to them have changed over time. <http://www.psepc-sppcc.gc.ca/res/em/cdd/index-en.asp>

City of Los Angeles Emergency Preparedness Department [Last verified: Sep 29 07/ Los Angeles CA USA]--The Emergency Preparedness Department will provide citywide emergency management program leadership, continuity, and direction to enable the City of Los Angeles and its partners to respond to, recover from, and mitigate the impact of natural, manmade, or technological disasters upon its people or property. <http://www.lacity.org/epd/>

Comisión Nacional de Prevención de Riesgos y Atención de Emergencias (C.N.E.) [Last verified: Sep 29 07/ San Jose Costa Rica]--La Comisión Nacional de Prevención de Riesgos y Atención de Emergencias (C.N.E.), se esfuerza día con día, para coordinar los esfuerzos, tanto de las comunidades como de las Instituciones de primera respuesta y de Gobierno, para prevenir situaciones de riesgo para la población costarricense, así como las atenciones de primer impacto causadas por algun tipo de desastre, ya sea natural o antropogénico. www.cne.go.cr/

Coordinating Centre for the Prevention of Natural Disasters in Central America [Last verified: Sep 29 07/ Antigua Base de Howard Panama]--CEPREDENAC was established in 1988 as a coordination center for strengthening the capacity of the region as a whole to reduce the vulnerability of the population to the effects of natural disasters. In May 1995,

CEPREDENAC became an official organization set up to foster the Central American Integration System (SICA) with the Governments of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama as members. www.cepredenac.org/

Emergency Management Alberta [Last verified: Sep 29 07/ Edmonton AB Canada]--An emergency or disaster can occur anytime, anywhere. A tornado can touch down. Heavy rains can cause flash flooding or an accident could result in a major release of dangerous goods. Emergency Management Alberta makes sure that Alberta's communities are prepared to respond to these and other disasters or emergencies.
http://www.municipalaffairs.gov.ab.ca/ema_index.htm

Manitoba Emergency Measures Organization [Last verified: Sep 29 07/ Winnipeg MB Canada]--EMO is responsible for the overall provincial emergency program, ensuring safety for citizens, their property and the environment. EMO's activities include planning and research, training, response operations and the administration and delivery of disaster financial assistance programs. <http://www.gov.mb.ca/emo/index.html>

Montreal Emergency Preparedness Centre [Last verified: Sep 29 07/ Montreal QC Canada]--The mission of the Emergency Preparedness Centre (EPC) (formerly the Emergency Measures Office - EMO) is to prevent major disasters and ensure the municipality is well-prepared for major emergencies. It is also responsible for providing support to the overall coordination of responses during a major emergency and the recovery period following it, while still respecting the responsibilities allocated to the different parties. <http://services.ville.montreal.qc.ca/csc/an/accubmua.htm>

National Center for Disaster Prevention [Coyoacán Mexico]--La responsabilidad principal del Centro Nacional de Prevención de Desastres (CENAPRED) consiste en apoyar al Sistema Nacional de Protección Civil (SINAPROC) en los requerimientos técnicos que su operación demanda. Realiza actividades de investigación, capacitación y difusión acerca de fenómenos naturales y antropogénicos que pueden originar situaciones de desastre, así como acciones para reducir y mitigar los efectos negativos de tales fenómenos, para coadyuvar a una mejor preparación de la población para enfrentarlos.
www.cenapred.unam.mx/

National Search & Rescue Secretariat [Ottawa ON Canada]--The National Search and Rescue Secretariat (NSS) is an independent agency of government, reporting to the Lead Minister for Search and Rescue (the Minister of National Defence). The NSS was established in 1986 to support and promote the activities of the National SAR Program (NSP) as a means to achieve highly effective and economically responsible search and rescue programs throughout Canada. The NSS coordinates central activities for the federal element of search and rescue... https://www.nss.gc.ca/site/index_e.asp

New Brunswick Emergency Measures Organization [Fredericton NB Canada]--The New Brunswick Emergency Measures Organization (NB EMO) co-ordinates preparedness for emergencies. At the federal, provincial and municipal levels, planning is the key to emergency preparedness. A well established and tested emergency plan helps to ensure a

prompt and co-ordinated response by responsible agencies in a time of crisis. NB EMO also co-ordinates provincial response operations during emergencies and administers disaster financial assistance programs. <http://www.gnb.ca/cnb/emo-omu/index-e.asp>

Newfoundland and Labrador Emergency Measures Organization [St John's NL Canada]--The Provincial Emergency Measures Program is responsible for the development and maintenance of effective provincial emergency preparedness, response and recovery measures with a view to mitigating the human suffering and loss of property caused by actual or imminent emergencies and disasters in Newfoundland and Labrador. <http://www.mpa.gov.nl.ca/mpa/emo.html>

Northwest Territories Emergency Measures Organization [Yellowknife NT Canada]--The EMO handles several duties related to emergency or disaster situations. EMO responsibilities include: Coordination of the Government of the Northwest Territories' involvement in Emergency Operations; Assisting with community and regional emergency plans; Search and rescue coordination and implementation; Search and rescue plans and training exercises; Administration of the Disaster Assistance Program; Planning and emergency response; and Emergency preparedness training and exercises. http://www.maca.gov.nt.ca/safety/emergency_organization.html

Nova Scotia Emergency Management [Halifax NS Canada]--The Nova Scotia Emergency Management Office is the agency of the Nova Scotia Government that is responsible for providing a prompt and coordinated response to emergencies. <http://www.gov.ns.ca/emo/AbsPage.aspx?siteid=1&lang=1&id=1>

Public Safety and Emergency Preparedness Canada [Ottawa ON Canada]--Public Safety and Emergency Preparedness Canada (PSEPC) is Canada's lead department for public safety. We build and implement national policies for emergency management and national security. We help ensure community safety by delivering crime prevention programs and developing federal policies for law enforcement and corrections. www.ociepc-bpiepc.gc.ca/

Regional Disaster Information Center Latin America and the Caribbean [San Jose Costa Rica]--CRID is an initiative sponsored by six organizations that decided to join efforts to ensure the compilation and dissemination of disaster-related information in Latin America and the Caribbean. Its mission is to promote the development of a prevention culture in the Latin American and Caribbean countries, through the compilation and dissemination of disaster-related information, and the promotion of co-operative efforts to improve risk management in the region. www.crid.or.cr/crid/esp/index.html

Up-To-Date Los Angeles [Los Angeles CA USA]--This is an official web-site of the City of Los Angeles Emergency Operations Organization. During major emergencies impacting Los Angeles, information of potential interest to the public and media will be posted here. Please RELOAD or REFRESH this page to get the latest updates. <http://www.updatela.com/>

AusAID Australian Agency for International Development [Jan 13 06 Canberra ACT]--The Australian Government's overseas aid program is a Federal Government funded program that reduces poverty in developing countries. The Australian Agency for International Development (AusAID) manages the program. Australia, through AusAID, works with other governments, the United Nations, Australian companies and non-government organisations to design and set up projects which tackle the causes and consequences of poverty in developing countries. Each year the Australian aid program reaches more than 58 million people living in poverty around the world, with most of its activities taking place in the Asia-Pacific region. www.ausaid.gov.au

Australian Business Volunteers (ABV) [Jan 11 06 Deakin ACT]--ABVs are experts in their fields who share their work skills to help build up micro, small and medium sized businesses in the developing countries of SE Asia and the Pacific. "ABV aligns itself with the aims of the Australian Government's overseas aid program. These aims are to help reduce poverty and create sustainable development. Promoting good governance is also an important goal of the aid program. ABV contributes to poverty reduction, sustainable development and good governance by providing Australian expert volunteers who, through sharing their skills and experience, assist businesses and organisations in developing countries to grow and thrive. We focus on clients in South East Asia and the Pacific." www.abv.org.au

Australian Center for International Agricultural Research [Jan 13 06 Canberra ACT]--ACIAR is a statutory authority that operates as part of the Australian Government's development cooperation programs. The Centre encourages Australia's agricultural scientists to use their skills for the benefit of developing countries and Australia. ACIAR funds research projects that are developed within a framework reflecting the priorities of Australia's aid program and national research strengths, together with the agricultural research and development priorities of partner countries. Our mandate directs activities to developing countries in five regions: Papua New Guinea and the Pacific Islands, Southeast Asia, North Asia, South Asia and Southern Africa. Research is also allocated across regions through funding to the international agricultural research centres. Our functions are to: commission research into improving sustainable agricultural production in developing countries; fund project related training; communicate the results of funded research; conduct and fund development activities related to research programs; and administer the Australian Government's contribution to the International Agricultural Research Centres. www.aciar.gov.au/web.nsf/

Australian Centre for International & Tropical Health & Health Nutrition Although not solely dealing with Indigenous health, there is still quite a bit of information available on this website. They provide information about education, particularly University courses in Indigenous health, and also about their current research projects. ACITHN has been a formal entity since 1 January 1995. The centre reflects the continued commitment of the Australian Government to public health and medical research among disadvantaged communities and developing countries, particularly in the Pacific and

Asian regions. As Australia's designated centre for international and tropical health and nutrition, ACITHN provides a focus for higher education, new research endeavours and consultancies nationwide and includes a critical mass of scientists from a wide range of disciplines and professions. The ACITHN is a collaborative venture involving The University of Queensland (UQ) and The Queensland Institute of Medical Research (QIMR). It has its genesis in two independent programs, the Nutrition Program (NP, established in 1979) and the Tropical Health Program (THP, established in 1987 as THP-UQ and THP-QIMR). The THP-UQ developed and expanded to meet identified needs of indigenous Australians, as well as those of neighbouring countries, and the ACITHN now includes the Indigenous Health Program (IHP).

<http://www.acithn.uq.edu.au/Divisions/acithn/>

Australian College of Rural and Remote Medicine The website provides current information specifically for rural doctors. It features a calendar of events, directory to relevant organisations, links to other rural medical pages and articles by various authors on topics such as CME and computer education. The Australian College of Rural and Remote Medicine (ACRRM) is the peak professional organisation for rural medical education and training in Australia. The College has around 2000 Fellows and Registrars who practice in regional, rural and remote communities throughout Australia. The College's core function is to determine and uphold the standards that define and govern competent unsupervised rural and remote medical practice. Fellowship awards are conferred to rural medical practitioners who have been assessed as meeting the College standards for rural practice. This qualification is required to be maintained by doctors' participating in professional development programs that are relevant and accredited for rural practice. <http://www.acrrm.org.au/>

Australian Council for International Development [Jan 11 06 Deakin ACT]--This Australian coordinating agency lists weekly vacancies with Australian aid agencies both in Australia and overseas. "ACFID is an independent national association of Australian non-government organisations (NGOs) working in the field of international aid and development. ACFID has some 80 members. ACFID is committed to achieving sustainable human development in which people are able to enjoy a full range of human rights, fulfil their needs free from poverty, and live in dignity." www.acfid.asn.au

Australian Development Gateway [Jan 13 06 Canberra ACT]--Development Gateways are innovative Internet portals that seek to maximize the interchange of development information with the objective of assisting countries achieve sustainable development and to reduce poverty. The Development Gateway Foundation based in Washington DC was launched by the World Bank and is the hub for a world-wide network of over 50 Country Gateways. Australia was a founding member and funding contributor of the Development Gateway Foundation and has become the first OECD country to develop its own Country Gateway. The Australian Development Gateway (ADG) is an integral part of this major international initiative. The Australian Development Gateway is a knowledge-sharing website, supporting people working in Asia Pacific countries to reduce poverty and promote sustainability. It is a mechanism for Australians and others in the Asia Pacific region to contribute knowledge and to engage in vigorous discussion. By accessing the

ADG, people working in the field of development will be able to collaborate more effectively by sharing practical knowledge faster. They will be further empowered in developing policies and programs, researching issues, forming alliances and working towards sustainable growth and poverty reduction. www.developmentgateway.com.au/

Australian Indigenous HealthInfoNet This website provides an extensive amount of Aboriginal and Torres Strait Islander health information, including important cultural information as well. There is on-line information and a vast amount of links to additional websites, publications or articles. The Australian Indigenous HealthInfoNet is an innovative web resource that makes knowledge and information on Indigenous health easily accessible to inform practice and policy. Our web resource is a 'one-stop info-shop' for people interested in improving the health of Indigenous Australians. We provide quality, up-to-date knowledge and information about many aspects of Indigenous health, and support 'yarning places' (electronic networks) that encourage information-sharing and collaboration among people working in health and related sectors. <http://www.healthinfonet.ecu.edu.au/>

Australian Indigenous Health Promotion Network (AIHPN) The Network is dedicated to improving the health of Indigenous Australians through education, professional development, mobilisation and advocacy. It is an organisation controlled by its members and is comprised of both Indigenous and non Indigenous health professionals. <http://www.indigenoushealth.med.usyd.edu.au/>

Australian Rural Health Education Network (ARHEN) ARHEN is a national communication and coordination body for all University Departments of Rural Health (UDRH) in Australia. The Australian Rural Health Education Network (ARHEN) was established in November 2001 to: optimise the outcomes of the University Departments of Rural Health (UDRH) Program by encouraging a co-ordinated approach to the activities and the strategic direction of the Program; act as a communication and co-ordination conduit for the participating organisations and also between the Commonwealth and other government and non-government organisations and the participating organisations; provide proactive activities on behalf of the participating organisations based on the agreed business plans and programs of the participating organisations; provide advice to the Commonwealth on the direction of Commonwealth initiatives to create a national network of rural health education and training, in particular with respect to the UDRH Program. <http://www.arhen.org.au/>

Australian Strategic Policy Institute [Jan 13 06 Barton ACT]--ASPI has been set up to help Australians understand the critical strategic choices which our country will face over the coming years, and to help Government make better-informed decisions. This is important. Defence is one of the key functions of Government, and a major area of national expenditure. But it remains a difficult and arcane area of public policy - beset by technicalities, obscured by jargon and wreathed in tradition. Australians live in a complex and strategically dynamic region. Like people everywhere, we face risks from terrorism and other transnational threats. But we also face unique uncertainties about the stability of our immediate neighbourhood, and about the strategic balance of the wider Asia-

Pacific region. We must meet major technological challenges to keep our forces up to date. And we must overcome managerial and budget problems to achieve the strategic goals we set ourselves. www.aspi.org.au/

Australian Volunteers International (AVI) [Jan 11 06 Melbourne VIC]--Most assignments are for 2 years, although there are limited positions for a lesser period. AVI also offers younger volunteers (ie 18+) shorter team-based opportunities for 8-12 weeks. "Australian Volunteers International is Australia's largest and most experienced international volunteer sending agency. Every year, we recruit, prepare and support hundreds of Australians who volunteer to live alongside people of other cultures and work towards the sustainable development of communities." www.australianvolunteers.com.

Australian Youth Ambassadors for Development (AYAD)Program [Jan 11 06 Canberra ACT]--This program places skilled young Australian volunteers, aged 18-30, on assignments up to 12 months in developing countries around Asia/Pacific. "The Australian Youth Ambassadors for Development Program (AYAD) was launched in 1998 by the Minister for Foreign Affairs, Alexander Downer, to strengthen mutual understanding between Australia and the countries of the Asia Pacific and make a positive contribution to development." www.usaid.gov.au/youtham/default.cfm

Council for International Development [Jan 13 06 Wellington NZ]--The Council for International Development (CID) was formed in 1985 by a small group of aid and development agencies which identified the need to coordinate some activities and present a single voice on issues of common concern. Today CID has 79 members that include most of New Zealand's major Non Governmental Organisations (NGOs) that work in aid and development. CID works to achieve effective high quality international development programmes which focus on the alleviation and eradication of poverty and works to enhance the capacity and participation of member agencies, the NZ Government and other sectors of the NZ community. www.cid.org.nz/

GAP Australia [Jan 11 06 South Yarra VIC]--This agency offers 17-20 year olds the opportunity to live and work in another country and culture, usually the year after leaving school. "GAP is a journey. It's an opportunity to challenge yourself, gain independence and discover the world. A chance to live and work in a different country and culture, to take a break from study, grow in confidence and widen your perspectives. GAP is about helping others and learning about yourself. It's not a holiday. It's the best year of your life." www.gapaustralia.org

Indigenous Community Volunteers (ICV) [Jan 11 06 Alice Springs NT]--Assists Australian indigenous communities improving access to business, trade and professional skills, by linking them to volunteers. "Indigenous Community Volunteers (ICV) is an independent, not-for-profit company that offers support to Indigenous communities to pursue their community development goals in their own way. ICV is making a difference by providing volunteers who can transfer their skills to people in Aboriginal and Torres Strait Islander communities and organisations. ICV matches skilled volunteers with

approved short to medium term projects. Communities and organisations choose the most suitable volunteer for their project." www.volindigenous.org.au.

Oaktree Foundation [Australia Jan 11 06 Camberwell VIC]--Australia's first entirely youth run international aid organisation, Oaktree's Research & Project Development Team offers young people the opportunity to work on the development of its overseas projects through research and project proposal contributions. "The Oaktree Foundation is a movement of passionate young people seeking to empower and equip children and youth in the developing world. The foundation is made up of volunteers (aged 25 and under), as we believe that young people have the passion, motivation and energy necessary for making positive change in our world. Oaktree also has a network of industry professionals who mentor our volunteers and provide them with support and guidance. Oaktree recognises the immense difference between the material and social wealth of those living in privileged communities compared with those in developing communities, and we accept that with great privilege comes great responsibility to help those less fortunate." www.theoaktree.org

PALMS Australia [Jan 12 06 Croydon Park NSW]--This Catholic agency places a large number of Global Mission participants in a wide variety of overseas cross-cultural situations. "Palms Australia started in Sydney in 1956 as the Paulian Association. Groups formed in around 100 communities to identify local issues, reflect on values and take appropriate action to address social inequality and assist people in need. After identifying that similar issues needed to be addressed globally, in 1961, the program was extended to communities overseas which request the placement of volunteers to assist develop health, education and other facilities. More recently Palms volunteers have been "opening our hands to hands to the world" in Africa, Asia and the Pacific, including countries such as Tanzania, East Timor, Papua New Guinea and Aboriginal Australia." www.palms.org.au

TransRemote [Jan 12 06 Alice Springs NT]--Remote assistance for distant communities and organizations. "Australia's recruitment network for remote employers and workers, established 1997. Trans offers a recruitment and selection service dedicated to remote Aboriginal community organisations and workers seeking jobs which consolidate their skills and interests in community development within remote environments. Our recruitment database covers a wide spectrum of community-based roles and is targeted specifically at remote community scenarios." www.transremote.com.au

Volunteering for International Development from Australia [Jan 13 06 Kent Town SA]--VIDA stands for Volunteering for International Development from Australia. VIDA is managed on behalf of AusAID by Austraining International Pty Ltd, an Adelaide based international human resource development company. The goal of VIDA is to ensure volunteers supported by AusAID contribute to poverty reduction and sustainable development in targeted developing countries as part of Australia's international aid program. VIDA's principles are to: 1. Be responsive to partner country needs - volunteers will be placed with host organisations in the public and private sectors, non-government and civil society organisations and education institutions in priority areas identified by

partner countries, AusAID and country volunteer strategies. 2. Encourage local ownership and sustainability: while working in partnership with host organisations VIDA volunteers will not replace local staff. 3. Be demand driven - through responding to the needs of host organisations that complement AusAID program priorities. 4. Share commitment - between the host organisations and the VIDA volunteers. 5. Promote community engagement - a returned VIDA network will be set up for current and returned volunteers whereby they will be involved in public engagement activities, disseminating information in Australia and overseas about the important contribution made by VIDA volunteers as they are supported by the aid program and overseas partners. www.vidavolunteers.com.au

Youth Challenge Australia [Jan 13 06 Lindfield NSW]--Are you looking for an exciting volunteer program that combines grass roots community development work in Central and South America, Central Australia and the Pacific with personal development, teamwork and community service? Are you looking to immerse yourself in an entirely different culture while you lend a hand to construct community buildings and infrastructure? Are you looking to assist medical outreach prevention and awareness programs or help on projects that manage and conserve the environment? Youth Challenge Australia combines community development, health and environmental work in adventurous projects carried out by teams of volunteers aged 18-30 years. www.youthchallenge.com.au

Agence européenne pour le développement et la santé (AEDES)

The European Agency for the Development and Health focuses on public health policies, food security and social programmes such as gender policy. <http://www.aedes.be>

Council of Europe – EUR-OPA Major Hazards Agreement

The Committee of Ministers of the Council of Europe has set up the Open Partial Agreement in 1987. This intergovernmental Agreement is a platform for cooperation in the field of major natural and technological disasters between Eastern Europe, the Mediterranean area and Western Europe concerning knowledge about prevention, risk management, post-crisis analysis and rehabilitation. http://www.coe.int/T/E/Cultural_Co-operation/Disasters

European Commission/Commission Européenne

The European Commission embodies and upholds the general interest of the Union. The President and Members of the Commission are appointed by the Member States after they have been approved by the European Parliament. The Commission is the driving force in the Union's institutional system: It has the right to initiate draft legislation and therefore presents legislative proposals to Parliament and the Council. As the Union's executive body, it is responsible for implementing the European legislation (directives, regulations, decisions), budget and programmes adopted by Parliament and the Council. It acts as guardian of the Treaties and, together with the Court of Justice, ensures that Community law is properly applied. It represents the Union on the international stage and negotiates international agreements, chiefly in the field of trade and cooperation. http://europa.eu.int/comm/index_en.htm

European Commission's Humanitarian Aid Office (ECHO)

The European Union's mandate to ECHO is to provide emergency assistance and relief to the victims of natural disasters or armed conflict outside the European Union. The aid is intended to go directly to those in distress, irrespective of race, religion or political convictions. http://europa.eu.int/comm/echo/en/index_en.htm

European Environment Agency (EEA), Copenhagen, Denmark

The EEA aims to support sustainable development and to help achieve significant and measurable improvement in Europe's environment through the provision of timely, targeted, relevant and reliable information to policy making agents and the public. <http://www.eea.eu.int>

European Directorate General Joint Research Centre (JRC)

The Joint Research Centre (JRC) Directorate-General is an integral part of the European Commission. It provides independent scientific and technical advice to the Commission, the European Parliament, the Council of Ministers and EU Member States in support of European Union (EU) policies. Its main aim is to help to create a safer, cleaner, healthier and more competitive Europe. Its seven scientific institutes carry out research of direct concern to EU citizens. It provides technical know-how both directly and through coordinating and contributing to numerous broader networks linking industry, universities and national institutes. The JRC is playing an important role in helping establish the European Research Area (ERA). <http://www.jrc.org>

European Laboratory for Structural Assessment – Earthquake Engineering (ELSA), Ispira, Italy

The construction of bridges, viaducts, buildings or tunnels, which can withstand earthquakes, involves using particularly sophisticated simulation laboratories. The most prestigious of these is ELSA, which is a technological flagship for the European Commission's Joint Research Centre.

<http://europa.eu.int/comm/research/success/en/env/0071e.html>

European Research Area (ERA)

On 18, January 2000 the European Commission adopted the platform "Towards a European Research Area" which is meant to contribute to the creation of better overall framework conditions for research in Europe. ERA is regrouping all Community supports for the better coordination of research activities and the convergence of research and innovation policies, at national and EU levels.

http://europa.eu.int/comm/research/era/index_en.html

European Space Agency (ESA)

The European Space Agency is Europe's gateway to space. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the people of Europe. ESA has 15 Member States. By coordinating the financial and intellectual resources of its members, it can undertake programmes and activities far beyond the scope of any single European country.

<http://www.esa.int/export/esaCP/index.html>

European Union (EU)

The European Union was set through the process of European integration was launched on 9 May 1950 when France officially proposed to create “the first concrete foundation of a European federation.” Six countries (Belgium, Germany, France, Italy, Luxembourg and the Netherlands) joined from the very beginning. Today, after four waves of accessions (1973: Denmark, Ireland and the United Kingdom; 1981: Greece; 1986: Spain and Portugal; 1995: Austria, Finland and Sweden). The EU has 15 Member States and is preparing for the accession of other eastern and southern European countries. Its main agencies are: European Parliament, Council of the Union, European Commission, Court of Justice, Court of Auditors, European Central Bank, European Economic and Social Committee, Committee of the Regions, European Investment Bank, European Ombudsman. <http://www.europa.eu.int>

European Centre for Disaster Medicine/ Centre européen pour la Médecine des catastrophes (CEMEC), San Marino It promotes the prevention and mitigation of the effects of natural and technological disasters. <http://www.diesis.com/cemec>

European University Centre for Cultural Heritage/Centre Universitaire Européen pour les Biens Culturels (CUEBC), Ravello, Italy.

CUEBC is an experimental laboratory that conducts scientific research and specialist matters. It is part of the European University for Cultural Heritage. <http://www.cuebc.amalficoast.it>

European Natural Disasters Training Centre/Centre Européen de Formation sur les Risques Naturels (AFEM), Ankara, Turkey.

AFEM's main goal is to reduce the destructive effects of hazards through research, training and education at all levels, from policy makers to field workers associated with disaster preparedness and response. <http://www.europarisks.coe.int/afem50.htm>

European Centre for Prevention and Forecasting of Earthquakes/Centre Européen pour la Prévention et la Prévision des Tremblements de Terre (ECPFE), Athens, Greece.

ECPFE is involved in all aspects of prevention as well as in the development of practical ways of managing earthquakes. <http://www.europarisks.coe.int/ecpfe50.htm>

European Centre on Geomorphological Hazards/Centre Européen sur les Risques Geomorphologiques (CERG), Strasbourg, France

CERG is concerned with studying the major hazards associated with earthquakes and landslides. <http://www.europarisks.coe.int/cerg50.htm>

Euro-Mediterranean Seismological Centre/Centre Sismologique Euro-Méditerranéen (CSEM), Bruyères-le-Châtel, France

The activity of CSEM members is devoted to the promotion of seismological research. <http://www.emsc-csem.org>
<http://www.csem.bruyeres.cea.fr>

European Centre for Geodynamis and Seismology/Centre Européen de Géodynamique et de Sismologie (ECGS), Walferdange, Luxemburg

The Centre acts as a link between scientific research and its application to the prevention and interpretation of hazards. <http://www.ecgs.lu>

European Centre on Training and Information of Local and Regional Authorities and Population on the Field of Natural and Technological Disasters /Centre Européen de Formation des Autorités Locales et Régionales dans le domaine des Catastrophes Naturelles et Technologiques (ECMHT), Baku, Azerbaijan.

It provides training and information of local and regional authorities in the field of major hazards. <http://www.europarisks.coe.int/ecmht50.htm>

Euro Mediterranean Centre on Evaluation and Prevention of Seismic Risk/Centre Européen sur l'Evaluation et la Prévention du Risque Sismique (CEPRIS), Rabat, Morocco.

It works to develop a unified strategy and common framework for coordinating regional seismo-tectonic zoning and assessment of seismic hazards and risks in the Mediterranean region. <http://www.europarisks.coe.int/cepris50.htm>

European Centre for School Training in Risk Prevention/Centre Européen sur la Formation Scolaire à la Prévention des Risques (CSLT), Sofia, Bulgaria

The Centre develops and promotes general and partial educational policies, training concepts and teaching methods in the field of risk prevention training in schools. <http://www.bg400.bg/cslt>

Euro-mediterranean Centre for Research on Arid Zones/Centre Euro-Méditerranéen sur les Zones Arides (CRSTRA), Algiers, Algeria

The centre conducts scientific and technical research programmes on arid zones and zones threatened with desertification and drought. <http://www.europarisks.coe.int/crstra50.htm>

European Centre of Technogenic Safety/Centre Européen de Sécurité Technologique (TESEC), Kiev, Ukraine

TESEC is a scientific research and educational organization. <http://www.europarisks.coe.int/tesec50.htm>

European Centre for Vulnerability of Industrial and Lifeline Systems/Centre Européen sur la Vulnérabilité des Réseaux et Systèmes Industriels (ECILS), Skopje (Former Yugoslavia Republic of Macedonia)

It promotes programmes for theoretical and applied research of urban vulnerability. <http://www.iziis.ukim.edu.mk>

European Centre on Urban Risks/Centre Européen sur les Risques Urbains (CERU), Lisbon, Portugal

Its principal functions are to provide a framework for coordinating relief and natural and

technological hazard management and for devising a common strategy to combat urban hazards. <http://www.europarisks.coe.int/ceru50.htm>

European Centre on Floods/Centre Européen sur les Inondations (AECF), Kishinev, Moldova

It concentrates on proposals to prevent the risk of flooding.
<http://www.europarisks.coe.int/aecf50.htm>

Euro-Mediterranean Centre on Insular Coastal Dynamics/Centre Européen de la Dynamique Côtière Insulaire (IcoD), Valletta, Malta

ICoD's main brief is to work in three main areas of education, applied research and information activities related to coastal dynamics. <http://www.icod.org.mt/IcoD/ICoDmain.htm>

Scientific Centre of Monaco, European Oceanological Observatory/Centre scientifique de Monaco, Observatoire Océanologique Européen (OOE), Monaco

It conducts research with the objective of evaluating major ecological risks and restoring degraded habitats.
<http://www.europarisks.coe.int/ooe50.htm>

European Centre of New Technologies for the Management of Major Natural and Technological Hazards/Centre Européen des Nouvelles Technologies pour la Gestion des Risques Naturels et Technologiques Majeurs (ECNTRM), Moscow, Federation of Russia

One of its primary objectives is the use of space technologies for the forecasting, prevention and relief in major natural and technological disasters.
<http://www.europarisks.coe.int/ecntrm50.htm>

European Centre for Research into Techniques for Informing Populations in Emergency Situations/Centre Européen de Recherche sur les Techniques d'Information de la Population dans les Situations d'Urgences/Centro Europeo de Investigacion de técnicas de información a la población en Situaciones de Emergencia (CEISE), Madrid, Spain

Its work concerns methods of informing the public in emergency situations.
<http://www.proteccioncivil.org>

European Inter-regional Centre for Training Rescue Workers /Centre Européen de Formation Inter-Régionale pour les Sauveteurs (ECTR), Yerevan, Armenia

It provides training of rescue workers and related instructors for humanitarian assistance.
<http://www.europarisks.coe.int/ectr50.htm>

European Centre on Geodynamical Hazards of High Dams/Centre Européen sur les Risques Géodynamiques liés aux Grands Barrages (GHHD), Tbilissi, Georgia

The Centre is created to develop multinational, multidisciplinary approaches to the problems of geodynamic hazards, generated by high dams.
<http://www.europarisks.coe.int/ghhd50.htm>

European Advisory Evaluation Committee for Earthquake Prediction (EAECEP)

While not a Centre but a Committee of the Council of Europe, this institution of 13 specialists was established in 1993 by the Committee of Ministers and works closely with the EUR-OPA Specialized Centres. It is responsible for giving advice on earthquake prediction made by scientists. <http://www.europarisks.coe.int/eaeccep.htm>

European Centre for Medium Range Weather Forecasts (ECMWF)

The Centre is an international organisation supported by 24 European States, based in Reading, west of London, in the United Kingdom. The principal objectives of the Centre are: the development of numerical methods for medium-range weather forecasting; the preparation, on a regular basis, of medium-range weather forecasts for distribution to the meteorological services of the Member States; scientific and technical research directed to the improvement of these forecasts; collection and storage of appropriate meteorological data. In addition, the Centre: makes available a proportion of its computing facilities to its Member States for their research; assists in implementing the programmes of the World Meteorological Organisation; provides advanced training to the scientific staff of the Member States in the field of numerical weather prediction; makes the data in its extensive archives available to outside bodies. <http://www.ecmwf.int>

Natural Hazards Competence Centre [Jan 14 06 Davos-Dorf Switzerland]--The acronym CENAT combines the first letters of the words “Center” and “NATural”. These words build the basis for the organization’s name: Natural Hazards Competence Center. The Board of Swiss Federal Institutes of Technology (ETH) founded CENAT in 1996 to bring together the existing natural sciences, engineering sciences, and socio-economic sciences dealing with natural hazards in the ETH domain. Since 2001, Swiss Universities and Universities of applied science are integrated as associated members. The domain of the Swiss Federal Institutes of Technology (ETH) has a long tradition in research about natural hazards. The WSL Institute (Swiss Federal Institute for Forest, Snow and Landscape Research) alone is investing 8 millions of SFr per year in the research, the teaching and the services in relation with natural hazards. At the level of the ETH domain the investment is totally 15 millions of SFr. www.cenat.ch/

Center for Middle East Peace & Economic Cooperation--The Center for Middle East Peace & Economic Cooperation encourages all relevant parties – Israel, the Palestinians, Arab countries, the United States, Europe, etc. – to reach just and comprehensive peace that will bring an end to the Israeli-Arab conflict. With this mission in mind, the Center's activities include travel in the region, diplomatic exchanges, and conferences featuring Middle Eastern and relevant international leaders seeking peace. The Center brings Middle Eastern policy makers, American and European officials, and international business leaders together to help provide an atmosphere that encourages a peaceful resolution to the Arab-Israeli conflict. Established in 1989 by then-Slim Fast Foods Chairman S. Daniel Abraham and then-Utah Congressman Wayne Owens, the Center is a private, non-profit, non-partisan organization. <http://www.centerpeace.org/>

McGill Middle East Program in Civil Society and Peace Building--The McGill Middle East Program in Civil Society and Peace Building provides fellowships to Israeli,

Palestinian and Jordanian students who earn their masters degree in social work at McGill University in Montreal, Canada, then return to work in the program's five practice centres in the region's most disadvantaged areas. Since this unique program began in 1997, 26 graduates have helped Israeli, Jordanian and Palestinian academic institutions and NGOs implement innovative and effective rights-based community practice programs in the most disadvantaged neighbourhoods of east Jerusalem, west Jerusalem, Beersheva, Nablus and Amman. The program was founded by McGill University Social Work Professor Jim Torczyner, a native New Yorker who has been teaching at McGill since he earned his doctorate from Berkeley in 1973. In 1975, he founded Montreal's Project Genesis, now a model of the rights-based community practice social work implemented in the Middle East through the MMEP. Rights-based community practice social work is guided by the following principles: That all individuals are rights-holding citizens; that the state must act inclusively and transparently when it allocates resources; that all citizens have the right to participate in the decisions that affect their lives; and that all citizens have the right to high quality care and services and that failure to provide those services is a violation of human rights. The success of the MMEP practice centres has underscored a growing recognition of the link among human rights, poverty alleviation and empowerment as an alternative to violence in the face of conflict and hopelessness. The five centres serve over 75,000 low-income individuals annually. The centres are supported by the unique alliance of Palestinian, Israeli and Jordanian academic institutions and NGOs who comprise the program's partners in the region: Palestinian Universities An Najah and Al Quds; Ben Gurion University and Community Advocacy Israel; and The University of Jordan and The Jordan Red Crescent. In December, 2003, the Canadian International Development Agency extended its major funding of the MMEP for an additional three years, with the approval of a second and larger grant of \$4.4 million toward Phase II of the program. <http://www.mmep.mcgill.ca/>

Asian Disaster Preparedness Center (ADPC), Bangkok, Thailand

ADPC is a regional resource center established in 1986 dedicated to disaster reduction for safer communities and sustainable development in Asia and the Pacific. It is recognized as an important focal point for promoting disaster awareness and developing capabilities to foster institutionalized disaster management and mitigation policies.

<http://www.adpc.net>

Asian Disaster Reduction Center (ADRC), Kobe, Japan

ADRC was established in July 1998 to promote multilateral cooperation for disaster reduction and to network the various players in the region. It has held annual meetings to network the focal points in governments of its member countries. Its activities focus on information sharing, capacity building and cooperation. It has developed several successful capacity building programmes with its member countries.

<http://www.adrc.or.jp>

Asian Institute of Technology (AIT), Bangkok, Thailand

AIT is an international graduate institution of higher learning with a mission to develop highly qualified and committed professionals who will play a leading role in the

sustainable development of the region and its integration into the global economy.
<http://www.ait.ac.th>

Asia-Pacific Economic Cooperation (APEC), Singapore

Its goal is to advance economic dynamism and sense of community within the Asia-Pacific region. APEC has established itself as the primary regional vehicle for promoting open trade and practical economic and technical cooperation. <http://www.apecsec.org.sg>

Association of South East Asian Nations (ASEAN), Bangkok, Thailand

The ASEAN Declaration states that the aims and purposes of the association are to accelerate the economic growth, social progress and cultural development in the region through joint endeavors in the spirit of equality and partnership in order to strengthen the foundation for a prosperous and peaceful community of South-East Asian nations. It further aims to promote regional peace and stability through abiding respect for justice and the rule of law in the relationship among countries in the region and adherence to the principles of the United Nations Charter. <http://www.aseansec.org>

BRAC [Jan 12 06 Dhaka Bangladesh]-- www.brac.net/index2.htm With a vision of "a just, enlightened, healthy and democratic Bangladesh free from hunger, poverty, environmental degradation and all forms of exploitation based on age, sex, religion and ethnicity," BRAC started as an almost entirely donor funded, small-scale relief and rehabilitation project to help the country overcome the devastation and trauma of the Liberation War. Today, BRAC has emerged as an independent, virtually self-financed paradigm in sustainable human development. It is the largest in the world employing 97,192 people, with the twin objectives of poverty alleviation and empowerment of the poor. Through experiential learning, BRAC today provides and protects livelihoods of around 100 million people in Bangladesh. Diagnosing poverty in human terms and recognising its multidimensional nature, BRAC approaches poverty alleviation with a holistic approach. BRAC's outreach covers all 64 districts of the country and furthermore, has been called upon to assist a number of countries including Afghanistan and Sri Lanka.

Center on Integrated Rural Development for Asia and the Pacific (CIRDAP), Dhaka, Bangladesh

CIRDAP is a regional, intergovernmental and autonomous institution established in July 1979 by the countries of Asia and the Pacific region. The Food and Agriculture Organization (FAO) of the United Nations, which had the support of several other UN bodies and donor countries and agencies such as Japan, and the Swedish International Development Agency took the initiative for its creation. The member countries of CIRDAP are Afghanistan, Bangladesh, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, and Vietnam. <http://www.cirdap.org.sg>

Coordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (CCOP), Bangkok, Thailand

CCOP is an Intergovernmental Organization focused on regional geo-scientific aspects. It consists of 11 member countries i.e., Cambodia, China, Indonesia, Japan, Republic of

Korea, Malaysia, Papua New Guinea, The Philippines, Singapore, Thailand, Vietnam and is supported by 14 cooperating countries and several international organizations.
<http://www.ccop.or.th>

Japan Center for Conflict Prevention (JCCP) [Jan 11 06 Tokyo Japan]--
www.jccp.gr.jp Strengthens contribution of Japanese NGO sector to prevention, containment and resolution of violent conflict, particularly that in the Asia-Pacific region. Produces monthly Dialogue Webpage for Conflicts Worldwide (DWCW) newsletter. ""Conflict prevention" will have a much more concrete meaning for the Japanese people of the twenty-first century. Citizens, as well as government, must deepen their awareness. Based on the belief that it is important to make such a contribution, The Japan Center for Preventive Diplomacy (now the Japan Center for Conflict Prevention) was founded on July 19th, 1999. Its goal is to become the driving force behind the conflict prevention activities of Japanese citizens throughout the trouble spots of the world. On February 28th, 2002 The Japan Center for Preventative Diplomacy obtained legal status as a non-profit-organization and changed its name to the Japan Center for Conflict Prevention."

South Asian Association for Regional Cooperation (SAARC), Kathmandu, Nepal
SAARC was established when its charter was formally adopted on 8 December, 1985 by the heads of state of Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. SAARC provides a platform for the peoples of South Asia to work together in a spirit of friendship, trust and understanding. It aims to accelerate the process of economic and social development in member states. <http://www.saarc-sec.org>

Disaster Recovery Business Alliance (DRBA) DRBA is an organization, a process and a product that is designed to provide an improvement in a community's ability to deal with disaster recovery by the formation of an effective alliance between the private and public sectors of a community. It offers a tested model to assist local leaders in forming and facilitating a lifeline-based planning organization to serve a local community. It was established and funded by the Electric Power Research Institute (EPRI) and co-founded by the Department of Energy, and the Association of Contingency Planners (ACP). DRBA has formed partnerships with many public and private sector organizations such as the Central United States Earthquake Consortium (CUSEC), National Emergency Management Association (NEMA), the Institute for Business and Home Safety (IBHS) and many others. <http://www.acp-international.com/drba>

New resources for disaster planning and response involving nursing homes [July 23 Washington DC USA]--HHS' Agency for Healthcare Research and Quality today released Emergency Preparedness Atlas: U.S. Nursing Home and Hospital Facilities, which is intended to help local communities identify the health care facilities (hospitals and nursing homes) that could be available and prepared to provide assistance under emergency conditions in their communities.

The **Emergency Preparedness Atlas** includes six case studies in North Carolina, Oregon, Pennsylvania, southern California, Washington, and Utah that each include a

series of maps depicting the locations and capacity of nursing homes and hospitals as well as their geographic relationship to a variety of emergency management and bioterrorism preparedness regions, such as HAZMAT response regions, emergency management regions, and Red Cross chapters. The Atlas includes maps for all 50 states with the location of hospitals and nursing homes in each state, and it displays the locations relative to the distribution of the elderly population in the case study states.

“States, local communities and other planners need accurate and reliable information about nursing homes and other facilities that care for some of our nation’s most vulnerable citizens,” said AHRQ Director Carolyn M. Clancy, M.D. “This new resource can help stimulate productive discussions among planners to further our nation’s preparation and response efforts.”

Also published with the Atlas is a report, *Nursing Homes in Public Health Emergencies*, which presents the results of a series of focus groups convened to collect information about disaster- and bioterrorism-related planning activities among nursing homes in the same six states used in the Atlas case study series. The report addresses the roles that nursing homes could play in regional preparedness, for example arranging with hospitals to transfer their less-critically ill or recovering patients to nursing homes.

“Planning resources such as the atlas and accompanying report will help prepare our nation, at all levels of government, to respond to the adverse health effects of public health emergencies and disasters,” said HHS Assistant Secretary for Preparedness and Response RADM Craig Vanderwagen, MD, USPHS.

Emergency Preparedness Atlas: U.S. Nursing Home and Hospital Facilities and Nursing Homes in Public Health Emergencies were developed for AHRQ under contract with RTI International. Both can be found online at <http://www.ahrq.gov/prep/nursinghomes/atlas.htm> and <http://www.ahrq.gov/prep/nursinghomes/report.htm>.

To order a copy of the Atlas or *Nursing Homes in Public Health Emergencies*, contact the AHRQ Publications Clearinghouse at 800-358-9295 or by sending an E-mail to ahrqpubs@ahrq.hhs.gov.

AHRQ has funded more than 60 emergency preparedness-related studies, workshops, and conferences to help hospitals and health care systems prepare for public health emergencies. More information about these projects can be found online at <http://www.ahrq.gov/prep/>.

All India Disaster Mitigation Institute [Jan 12 06 Gujarat India]-- All India Disaster Mitigation Institute (AIDMI), India is a community based action research, action planning and action advocacy non-governmental organisation. It works towards bridging the gap between policy, practice, and research related to disaster mitigation, in an effort to link the community to the (inter)national level humanitarian scenario. Promoting

adoption and practice of disaster mitigation through: Partnership with the poorest within disaster vulnerable communities; Integrating water, food, habitat and livelihood security; Capacity building of multiple humanitarian stakeholders; Synergy between traditional and modern risk reduction strategies; Capturing and disseminating lessons and innovative ideas; Promoting use of humanitarian standards in disaster response; and Providing timely and targeted relief in a sustainable manner. www.southasiadisasters.net

ASEAN Experts Group on Disaster Management (AEGDM) ASEAN cooperation on natural and man-made disasters is coordinated by AEGDM which was established in 1976 and meets regularly to discuss and share experiences of the region's disaster management and mitigation activities.

<http://www.adpc.ait.ac.th/pdr-sea/newsletter/issue3/pdr-update.html>

Asian Disaster Preparedness Center [Jan 12 06 Klong Luang Pathumthani Thailand]-- The Asian Disaster Preparedness Center (ADPC) is a non-profit organization supporting the advancement of safer communities and sustainable development, through implementing programs and projects that reduce the impact of disasters upon countries and communities in Asia and the Pacific, by: Developing and enhancing sustainable institutional disaster risk management capacities, frameworks and mechanisms, and supporting the development and implementation of government policies; facilitating the dissemination and exchange of disaster risk management expertise, experience and information; and raising awareness and enhancing disaster risk management knowledge and skills. www.adpc.net

Center for Disaster Management [Jan 14 06 Boğaziçi University Bebek/Istanbul Turkey]-- CENDIM was established in January 2001 as an interdisciplinary research center for disaster management. The center is in strategic partnership with many national and international organizations to develop disaster, engineering and risk management plans and to facilitate information sharing with governmental, non-governmental and community based organizations. CENDIM also aims to deploy the synergy of multi-disciplinary collaboration by national and international organizations. www.cendim.boun.edu.tr/index.html

Center for Disaster Management and Humanitarian Assistance (CDMHA) [Jan 15 06 Tampa FL]--Each year, billions of dollars are spent in disaster mitigation, response, and rehabilitation in Latin America and the Caribbean. The United States has traditionally provided a significant share of these resources, from official as well as private sources. The United States Agency for International Development's (USAID) Office of Foreign Disaster Assistance (OFDA) and USSOUTHCOM head up the official U.S. efforts in this region. Most private and international donors also coordinate with, and often depend upon, U.S. rapid response and logical support. The Center for Disaster Management and Humanitarian Assistance (CDMHA) was founded in 1998 as a partnership between the University of South Florida and Tulane University. Offices of the CDMHA are located in Tampa, FL, within the College of Public Health, within the University of South Florida campus, as well as at the Payson Center for International Development of Tulane University in New Orleans, LA, and Washington, DC. The

mission of the CDMHA is to facilitate collaborative education, training, research and information and communication services between disaster response and humanitarian assistance agencies (e.g. the military, NGOs, PVOs) primarily throughout the western hemisphere. cdmha.org/index.html

Center of Excellence in Disaster Management & Humanitarian Assistance [Jan 12 06 Tripler Army Medical Center Hawaii]--COE is a federally funded project given a mandate by the US Congress to improve the coordination and integration of the world's response to natural disasters, humanitarian crises and peace operations. COE was established in response to experiences of the US military which indicated that the dramatic change in world politics and subsequent asymmetric warfare meant new challenges to the cold war institutions that had been in place for more than fifty years, and that adaptation to the increase in civilian response to humanitarian crises was required. COE is not operational in the traditional sense, of delivering relief supplies or supplying personnel services. There are many agencies and organizations involved in providing relief but what they often lack is a way to coordinate with military components that may be in the same area performing different activities. Oftentimes the delivery of aid and military activities clash which may hamper the effectiveness of the other. Instead, COE helps those active in the provision of relief or security, in the case of the military, to coordinate better, to learn about the role of the other actors in the humanitarian field so that they may perform their own roles better. Therefore, the work of COE is behind the scenes, helping the responding organizations to do their own jobs better through education, training, research and information management activities, many in a multinational, multidisciplinary setting. www.coe-dmha.org/index.htm

Center for Research on the Epidemiology of Disasters [Jan 13 06 Brussels Belgium]--The Centre for Research on the Epidemiology of Disasters (CRED) was established in 1973 as a non-profit institution, with international status under the Belgian Law. It is located within the School of Public Health of the Université Catholique de Louvain (UCL) in Brussels. CRED became a World health Organisation Collaborating Centre in 1980 and has expanded its support of the WHO Global Programme for Emergency Preparedness and Response. Since then, it has increased its international network substantially. It has collaborative status with the United Nations Department of Humanitarian Affairs (UN-DHA), and also works in collaboration with the European Union Humanitarian Office (ECHO), the International Federation of the Red Cross and Red Crescent, the Office of Foreign Disaster Assistance (OFDA-USAID) as well as with non-governmental agencies such as the International Committee of the Red Cross and Red Croissant (ICRC, Switzerland). During the 90's, the Centre has actively promoted the International Decade for Natural Disaster Reduction (IDNDR) within its activities. www.cred.be/

Centre for Disaster Studies at James Cook University [Jan 14 06 Queensland Australia]--The Centre for Disaster Studies is a multi disciplinary research unit presently housed in the School of Tropical Environment Studies and Geography of James Cook University. The Centre has acted as the university's face to the public and the professionals in the Emergency Management and Meteorology fields, city councils and

other researchers since its establishment in 1979. The Centre for Disaster Studies was formally established a few years after James Cook University opened. The catalysts for the development of a research centre dedicated to study of the impact of disaster were two major cyclones; Althea which devastated Townsville in 1971 and Tracy in which destroyed Darwin in 1974. These events generated strong research interest in cyclones and natural hazards. The Centre receives an annual grant from the Queensland Department of Emergency Services to continue its function as Queensland's only Disaster research unit. Presently Associate Professor David King (Director) provides direction for the Centre through his leadership and guidance of our multidisciplinary research team. www.tesag.jcu.edu.au/CDS/index.htm

Coordinating Council for Disaster Management (CCGC), Mozambique CCGC is the government body responsible for policy decisions relating to disasters. The prime minister chairs the CCGC and his deputy is the minister of foreign affairs.

Disaster Management Bureau (DMB), Ministry of Disaster Management and Relief (MDMR), Bangladesh

MDMR is the principal government body, overseeing the disaster management activities in the country. Disaster Management Bureau and Directorate of Relief and Rehabilitation work directly under the Ministry. Bangladesh has established various disaster management committees at different levels from National Disaster Management Council (NDMC), headed by the Honorable Prime Minister, to the field level committee such as District Disaster Management Committee (DDMC), headed by Deputy Commissioner (DC). Under the supervision of MDMR, there are a number of disaster response units. source : ADPC <http://www.bdmb.org>

Disaster Management Center (DMC), University of Wisconsin, USA The center's goal is to help improve the emergency management performance of non-governmental organizations, local and national governments, and international organizations, through a comprehensive professional development program in disaster management. Distance learning is the principal approach for this international program. <http://dmc.engr.wisc.edu/about/edlinks.html>

Disaster Management Facility (DMF), World Bank, Washington D.C., USA DMF aims to reduce human suffering and economic losses caused by natural and technological disasters. Making sure that disaster prevention and mitigation are integral parts of development requires action, the DMF takes action by providing technical support to World Bank operations, promoting capacity-building, and establishing partnerships with the international and scientific community working on disaster issues. <http://www.worldbank.org/dmf/mission.htm>

Disaster Management Institute of Southern Africa (DMISA), South Africa DMISA is an organization where everyone involved in disaster management can relate to others with similar interests, and creates opportunities for the improvement of disaster management in Southern Africa. <http://www.cmc.gov.za/pht/DMISA.htm>

Disaster Management Technical Council (CTGC), Mozambique

The CTGC provides technical back-up to the National Disaster Management Institute (INGC), an autonomous institution under the Ministry of Foreign Affairs and Cooperation.

Disaster Management Unit, (DMU), Standing Office of the Central Committee for Flood and Storm Control (CCFSC), Vietnam The Vietnam Disaster Management Unit (DMU) is the mechanism chosen by the Government of Vietnam and UNDP to join together over 1000 years of Vietnamese flood protection culture with twenty-first century western technology to better protect the entire population of Vietnam against the annual natural disasters that ravage the country. <http://www.undp.org.vn/dmu/index.html>

Disaster Management and Mitigation Unit (DMMU), Zambia In 1998, the government of Zambia established the DMMU as part of the vice president's office to coordinate disaster related activities. The DMMU is supported by a technical committee, which includes the ministry of agriculture's office of early warning, the ministry of agriculture, food and fisheries, the central statistical office, and key line ministries such as health, finance and economic development.

Disasters Roundtable of the National Academies [Mar 5 06]--The Disasters Roundtable's mission is to facilitate and enhance communication and the exchange of ideas among scientists, practitioners, and policymakers in order to identify urgent and important issues related to the understanding and mitigation of natural, technological, and other disasters. The Disasters Roundtable convenes three annual workshops in Washington, DC. Workshops are free and open to the public. Roundtable Workshop 16: Community Disaster Resilience is scheduled for March 20, 2006. Workshop presenters and attendees will discuss such issues as the nature of community disaster resilience, what can further and inhibit it, and how community disaster resilience can be measured to determine the degree to which it is realized. The focus of the workshop will be on the local level, where the greatest impact of disasters is felt, as shown by Hurricane Katrina. The workshop will build on the 12th workshop in the series, "Creating a Disaster Resilient America: Grand Challenges in Science and Technology," which focused on the national level. Please Register by Friday, March 10, 2006

Gujarat State Disaster Management Authorities (GSDMA), India The Government of Gujarat established the Gujarat State Disaster Management Authority in February, 2001 to co-ordinate the comprehensive earthquake recovery program. The GSDMA is registered as a society with a vision to go beyond reconstruction and make Gujarat economically vibrant, agriculturally and industrially competitive with improved standards of living and with a capacity to mitigate and manage future disasters. <http://www.gsdma.org>

High Powered Committee (HPC) on Disaster Management Plans, Government of India

HPC has been constituted to review existing arrangements for preparedness and mitigation of natural and man made disasters including industrial, nuclear, biological and

chemical disasters; recommend measures for strengthening organizational structures, and recommend a comprehensive model plan for management of these disasters at National, State and District Level. <http://www.ndmindia.nic.in/committee/hpcomm.html>

Hungarian National Directorate General for Disaster Management (HNDGDM),
Budapest

From January, 2000 an integrated organization, the National Directorate for Disaster Management, Ministry of Interior has been established in Hungary as the central organ of the integral national disaster management. It was established on the basis of the legal predecessors, that is, the Civil Protection and the Fire Service. The system of protection against disasters is divided into three levels: international, national, the level of municipalities.

Instituto Nacional de Gestao de Calamidades (INGC), Mozambique (National Disaster Management Institute)

It manages day-to-day matters relating to disasters is the responsibility of the National Disaster Management Institute. This is an autonomous institution under the Ministry of Foreign Affairs and Cooperation.

Sustainable Environment and Ecological Development Society (SEEDS), New Delhi, India

SEEDS, a non-profit voluntary organization, is a collective endeavour of young professionals drawn from development related fields. It originated as an informal group of like-minded people, getting together for the purpose of creative research projects of academic interest. The group was later formalized in early 1994 and has been active in the field ever since. It is involved in research activities in community development, disaster management, environmental planning, transport planning, and urban and regional planning. Activities are carried out on behalf of government, semi-government and international development agencies. Independent programs on vital issues are also taken up. <http://www.gdrc.org/uem/seeds.html>

International Search and Rescue Advisory Group (INSARAG) [Jan 15 06 Geneva Switzerland]-- INSARAG is an inter-governmental network under the United Nations umbrella, which deals with urban search and rescue (USAR) and related disaster response issues. Its purpose is to provide a platform for information exchange, to define standards for international USAR assistance and to develop methodology for international cooperation and coordination in earthquake response. INSARAG includes earthquake-prone countries as well as traditional providers of international assistance. INSARAG was established in 1991, following initiatives of the international search and rescue teams who operated in the 1988 Armenia earthquake. The Field Coordination Support Section (FCSS) located within the Emergency Services Branch (ESB) of the Office for the Coordination of Humanitarian Affairs (OCHA) in Geneva functions as the INSARAG Secretariat.

ochaonline.un.org/webpage.asp?MenuID=2894&Page=549

Institute for Crisis, Disaster & Risk Management at The George Washington University [Jan 14 06 Washington DC]--The goal of The Institute for Crisis, Disaster, and Risk Management is to improve the disaster, emergency, and crisis management plans, actions and decisions of government, corporate, and not-for-profit organizations by transforming theory into practice. The Institute's objectives are to create and teach courses in crisis, disaster, and risk management; conduct research, and create knowledge through its research activities; and disseminate knowledge through educational programs, professional forums, and workshops. The Institute faculty and staff work to facilitate exchanges of crisis management information, knowledge, and best practices among all sectors. The Institute is engaged in both domestic and international endeavors. www.gwu.edu/~icdrm/

International Institute for Disaster Risk Management [Jan 12 06 Makati City Philippines]-- The International Institute for Disaster Risk Management (IDRM) philosophy is to promote international standards and world best practices in risk management through continued mutual sharing towards professional excellence in developing countries. IDRM works on principles of continuous learning, organizational and individual professional development. IDRM specialists and partners are committed to appropriate, user-friendly, innovative and cost-effective solutions for the promotion of community safety, self-reliance and sustainability. Established in 1998 at the request of the Philippine Government, IDRM International is a uniquely self-reliant, not-for-profit organization. IDRM effectively transfers knowledge and expertise to its development partners by working with people to help build their capacities and confidence in implementing sustainable Risk Management programs and projects in their communities. www.idrmhome.org/index.html

NATO Euro-Atlantic Disaster Response Coordination Center [Jan 15 06 Brussels Belgium]--The Euro-Atlantic Disaster Response Coordination Centre (EADRCC), created in 1998 as the focal point for coordinating disaster relief efforts of the 46 Euro-Atlantic Partnership Council (EAPC) nations in case of natural or technological disasters within the EAPC geographical area, will: inform the Secretary General of the North Atlantic Treaty Organisation (NATO) and through him the EAPC as well as the Senior Civil Emergency Planning Committee (SCEPC) about disasters in EAPC countries and requests for international assistance; to coordinate the response to disasters within the EAPC area upon request of the stricken country; promote EAPC countries participation in the non-standing Euro-Atlantic Disaster Response Unit (EADRU); act as an information-sharing tool for EAPC nations on disaster assistance. All those tasks are performed in close cooperation with the United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA). To ensure this cooperation, a UN-OCHA Liaison Officer is permanently based in the EADRCC. www.nato.int/eadrcc/home.htm

National Center for Disaster Management (NCDM), New Delhi, India
NCDM has been established by the Government of India and located in the Indian Institute of Public Administration with the objectives of providing training programs for senior and middle level administrative government officials which sensitize them for

disaster mitigation; coordinating the research activities in different aspects of disaster management at national level.

National Committee for Disaster Management (NCDM), Phnom Penh, Cambodia

In 1995, as a result of the country's experience with regularly occurring disasters, the Royal Government of Cambodia established NCDM. Its responsibilities are defined in terms of, not only providing timely and effective emergency relief to the victims of disasters, but also developing preventive measures to reduce loss of lives and property. This is accomplished by applying scientific and technical knowledge to mitigate disasters.

National Disaster Management Centre (NDMC), Pretoria, South Africa

Its mission is to improve knowledge, awareness and understanding of disasters, and to coordinate and facilitate access to information and resources in order to promote and support comprehensive, integrated and effective disaster management in South Africa. <http://sandmc.pwv.gov.za>

ProVention Consortium (Disaster Management Facility, World Bank)

ProVention Consortium (hosted by the International Federation of Red Cross and Red Crescent Societies in Geneva) The ProVention Consortium, launched by the World Bank in 2000 and currently hosted by the International Federation, is a global partnership dedicated to increasing the safety of vulnerable communities and to reducing the impacts of disasters in developing countries, still disproportionately affected by disasters. A broad membership, ProVention includes international financial institutions and donor governments, international development and humanitarian organisations, leading academic institutions, private sector actors and civil society organisations. The goal of the Consortium is to reduce the risk and impacts of disasters on the poor through forging partnerships between different disciplines and sectors, supporting policy reform, developing innovative approaches to the practice of disaster risk management and sharing knowledge and resources. <http://www.proventionconsortium.org>

Regional Consultative Committee (RCC) in Disaster Management, Bangkok, Thailand

Within the framework of the Advisory Council, an ADPC Consultative Committee on Regional Cooperation in Disaster Management has been established. The Committee comprises members of the ADPC Board of Trustees/Advisory Council who are working in key Government positions in the National Disaster Management systems of countries of the Asian region. The role of RCC is to provide an informal consultative mechanism for development of action strategies for disaster reduction in the region and promotion of cooperative programs on a regional and sub-regional basis; so as to guide ADPC's work.

United Nations Center for Regional Development/Disaster Management Planning Hyogo Office (UNCRD/DMPHO), Japan UNCRD/DMPHO was established in Kobe in 1999 after the Great Hanshin-Awaji Earthquake of 1995. While applying the lessons learned from the experience of the earthquake of 1995, the Hyogo office has formulated integrated projects for sustainable development through disaster management. The office

has three basic research programmes; design of community-based projects for disaster management planning, school earthquake safety project, and disaster management capacity building programmes to introduce best practices case studies on disaster management in developing countries. <http://www.hyogo.uncrd.or.jp>

Office of Civil Defence (OCD) and the National Disaster Coordinating Council (NDCC), Philippines

The OCD is the executive arm of the NDCC. Its primary mission is to coordinate, on the national level, the activities and functions of various agencies and instrumentality of the National Government, private institutions and civic organizations devoted to public welfare so that the facilities and resources of the entire nation may be utilized to the maximum extent for the protection and preservation of the civilians. <http://www.ndcc.gov.ph/>

UN International Strategy for Disaster Reduction [Jan 13 06 Geneva Switzerland]--

The ISDR aims at building disaster resilient communities by promoting increased awareness of the importance of disaster reduction as an integral component of sustainable development, with the goal of reducing human, social, economic and environmental losses due to natural hazards and related technological and environmental disasters. Recognising that natural hazards can threaten any one of us, the ISDR builds on partnerships and takes a global approach to disaster reduction, seeking to involve every individual and every community towards the goals of reducing the loss of lives, the socio-economic setbacks and the environmental damages caused by natural hazards. In order to achieve these goals, the ISDR promotes four objectives as tools towards reaching disaster reduction for all: Increase public awareness to understand risk, vulnerability and disaster reduction globally; Obtain commitment from public authorities to implement disaster reduction policies and actions; Stimulate interdisciplinary and intersectoral partnerships, including the expansion of risk reduction networks; and Improve scientific knowledge about disaster reduction. www.unisdr.org/

University of Wisconsin Disaster Management Center [Jan 14 06 Madison WI USA]--

Serving the learning needs of disaster/emergency management professionals in the developing world since 1982, the University of Wisconsin–Disaster Management Center (UW–DMC) has worked closely with experts recognized for their field experience to develop disaster management training activities with a practical emphasis. The center's goal is to help improve the emergency management performance of non-governmental organizations, local and national governments, and international organizations, through a comprehensive professional development program in disaster management. Distance learning (leaving this Web site) is the principal approach for this international program. dmc.engr.wisc.edu

Active Learning Network for Accountability and Performance (in Humanitarian Action) (ALNAP) ALNAP was established in 1997, following the multi-agency evaluation of the Rwanda genocide. It is a collective response by the humanitarian sector, dedicated to improving humanitarian performance through increased learning and accountability. ALNAP is a unique network that incorporates many of the key humanitarian

organisations and experts from across the humanitarian sector, including members from donor, NGO, Red Cross/Crescent, UN and independent/academic organisations. As such, ALNAP is able to utilise the broad range of experience and expertise within its membership to produce tools and analyses relevant and accessible to the humanitarian sector as a whole. ALNAP's workplan is aimed at improving humanitarian performance through learning and accountability, and consists of core activities, project activities and linked activities. www.odi.org.uk/alnap/

African Centre for Disaster Studies (ACDS) [Jan 14 06 Potchefstroom University, South Africa]-- acds.co.za The African Centre for Disaster Studies (ACDS) was established in January 2002 at the Potchefstroom University for Christian Higher Education within the School for Social and Government Studies. The explicit aim of the ACDS is to address the need for world-class training, education and research in disaster related activities within southern Africa and the wider African context. The ACDS empowers public and private sector institutions in Africa through accredited, competency-based programmes and capacity building initiatives in line with SAQA/NQF requirements. The ACDS offers a wide variety of professional university courses aimed at elected government officials, line functionaries and the private sector. Staying in line with the South African Government's vision of integrated development planning, a main focus area of the ACDS is assisting local authorities in South Africa with the development of their disaster risk plans. By doing so the ACDS aims to instil the principles of risk elimination and risk reduction within communities at risk. All of the ACDS's courses also adhere to national SAQA/NQF standards. In the field of research the ACDS is currently in the process of developing projects aimed at ensuring sustainable social development. The ACDS makes further use of its extensive international network to ensure international best practises and input to its research and training programmes.

African Network Campaign on Education for All (ANCEFA) The Africa Network Campaign on Education for All (ANCEFA) emerged in 2000 following the World Education Summit in Dakar in April 2000. African Civil Society Organisations (CSOs) intent on providing a coherent and proactive African voice on EFA issues, felt the need to organise in a representative manner. After four meetings at the sub-regional level (West Africa - September 2000, Central Africa - January 2001, East Africa - February 2001 and Southern Africa - July 2000) the network was founded. Mindful of the impact which poverty, HIV/AIDS, and the crisis of education have on the dignity of Sub-Saharan Africans; building on common shared concerns and experiences, and recognizing the ability of Africans to address their own development needs, civil society coalitions and networks addressing EFA issues in 23 countries across Africa, have come together to form the Africa Network Campaign in Education For All (ANCEFA) in order to pursue actions that will enable ordinary Africans achieve their personal and collective development aspirations through quality, free education for all. <http://www.ancefa.org/>

Beasley Intercultural [Jan 13 06 Marrickville NSW]-- www.intercultural.com.au Beasley Intercultural is a leading cross-cultural consultancy and training company operating across the Asia-Pacific region. We partner with our clients to enable them to better navigate the challenges of working globally. Our intercultural services enable

clients to: Minimise the time involved to 'hit the ground running' when working regionally or globally; Ensure diverse teams deliver results; Manage effectively in global and virtual workplaces; Reduce miscommunication across cultures and languages and therefore save costs; Understand what is really going on in remote locations to enable informed, strategic decisions; Manage risk and avoid common pitfalls in the global workplace. We are committed to providing the highest level of service to our clients by focusing on business outcomes. We deliver relevant and practical training programs and consultancy services which make a difference.

Center of Scientific Investigation and Higher Education (CICESE), Ensenada, Mexico

CICESE is dedicated to conducting scientific research in basic and applied science, as well as developing new technologies and highly skilled human resources in three major disciplines: Earth Sciences, Oceanography and Applied Physics.

<http://www.cicese.mx/cicese/ingles.html>

East West Center, Honolulu, Hawaii

The East-West Center is an internationally recognized education and research organization established by the U.S. Congress in 1960 to strengthen understanding and relations between the United States and the countries of the Asia Pacific region. The Center carries out its mission through programs of cooperative study, training and research. Professionals and students from the United States, Asia and the Pacific study and work together at the East-West Center to better understand issues of common and critical concern and explore mutually beneficial ways of addressing them.

<http://www.eastwestcenter.org/about-ov.asp>

Education International Education International represents more than 29 million teachers and education workers. Our 348 member organizations operate in 166 countries, from pre-school to university. As the world's largest Global Union Federation, and the only one representing education workers in every corner of the globe, Education International unites all teachers and education workers no matter where they are. <http://www.ei-ie.org/en/index.php>

Emergency Management Australia Institute (EMAI), Mount Macedon, Australia

Emergency Management Australia's research and training centre at Mount Macedon was renamed the Emergency Management Australia Institute (EMAI) in January, 2002. The change was made to better reflect the institute as an integral part of EMA's core business and to stress the holistic nature of the organization's operations across its sites in Canberra and Mount Macedon Victoria. EMAI conducts a program of activities which includes the National Studies Program, education and training activities, resource development to support the curriculum and the provision of information through the Australian Emergency Management Information Centre. EMAI is the education and information arm of Emergency Management Australia (EMA).

<http://www.ema.gov.au/fs-education.html>

European Centre for School Training in Risk Prevention/Centre Européen sur la Formation Scolaire à la Prévention des Risques (CSLT), Sofia, Bulgaria

The Centre develops and promotes general and partial educational policies, training concepts and teaching methods in the field of risk prevention training in schools.

European Centre of Technogenic Safety/Centre Européen de Sécurité Technologique (TESEC), Kiev, Ukraine

TESEC is a scientific research and educational organization.

Family Medicine Digital Resources Library--To support and enhance the sharing and collaborative development of educational resources among family medicine educators through a Digital Library that includes resources for all levels of family medicine education. <http://fmdrl.org/>

Global Campaign for Education "Millions of parents, teachers and children around the world are calling on their governments to provide free, good quality, basic education for all the world's children. They are part of the Global Campaign for Education; we add our voice to their call." - Nelson Mandela and Graca Machel, April 2002. Education is a basic human right and fundamental to the fight for human dignity and freedom. For 125 million children and 880 million adults, that right is violated everyday. The Global Campaign for Education promotes education as a basic human right, and mobilizes public pressure on governments and the international community to fulfill their promises to provide free, compulsory public basic education for all people; in particular for children, women and all disadvantaged, deprived sections of society. <http://www.campaignforeducation.org/>

Global Development Learning Network [Jan 13 06 Washington DC]-- www.gdln.org
The Global Development Learning Network (GDLN) is a global partnership of learning centers (GDLN Affiliates) that offer the use of advanced information and communication technologies to connect people working in development around the world. By applying tools and services developed in the field of distance learning – learning that takes place when participants in an event are separated by space and time – GDLN Affiliates enable organizations, teams, and individuals around the world to communicate, share knowledge, and learn from each others' experiences in a timely and cost-effective manner.

Global Information Networks in Education GINIE has developed, in participation with professionals in the field, an Internet-based network with the following capacities: web pages that with a click of a mouse, can provide rapid access to full-text documents that users can review, save to disk or print; web pages that provide organized links to GINIE partner and associate sites, as well as other high quality links to content related to education in nations in crisis and at risk; an on-line searchable database which focuses on documents and materials created by education professionals working internationally; uploadable website-based document transfer protocols which allow field professionals to conveniently send their materials to the GINIE database; on-line conferences on topics requested by field professionals designed around specific themes to encourage professional collaboration and contribution to the GINIE database; secured websites that

allow limited access to internal documents and dialogue for working groups; GINIE's mailing list that acts as an on-going information distribution system for busy professionals; and customized technical support and training for GINIE partners interested in learning how to use these capacities more effectively. <http://www.ginie.org/>

Inter-Agency Network for Education in Emergencies [Jan 12 06 Paris France]--
www.ineesite.org The Inter-Agency Network for Education in Emergencies (INEE) serves a unique purpose in reaching out to education practitioners around the world working in situations of emergencies and crisis. In view of the Convention on the Rights of the Child, the EFA Declaration and the Dakar Framework, INEE promotes access and completion of education of high quality for all persons affected by emergencies, crises or chronic instability. INEE's web site has a wide-range of Good Practice Guides for Education in Emergencies and other current research and information. This web site, along with an active list-serve, make INEE a flexible and responsive mechanism for sharing resources and experiences.

Moodle--Moodle is a course management system (CMS) - a free, Open Source software package designed using sound pedagogical principles, to help educators create effective online learning communities. You can download and use it on any computer you have handy (including webhosts), yet it can scale from a single-teacher site to a 50,000-student University. This site itself is created using Moodle, so check out the Moodle Demonstration Courses or read the latest Moodle Buzz. <http://moodle.org/>

Children's Environmental Health Network [Sep 10 06]--The Children's Environmental Health Network is a national multi-disciplinary organization whose mission is to protect the fetus and the child from environmental health hazards and promote a healthy environment. To achieve this mission, the Network has had several goals:

- * to promote the development of sound public health and child-focused national policy
- * to stimulate prevention-oriented research
- * to educate health professionals, policy makers and community members in preventive strategies; and
- * to elevate public awareness of environmental hazards to children.

Today, CEHN is the voice of children's environmental health in the nation's capitol, one that is uniquely informed by a strong basis in pediatric and environmental health science. <http://www.cehn.org/>

Global Monitoring for the Environment and Security (GMES)--GMES is a joint initiative of the European Space Agency and the EC. Many programmes (EC, ESA, others) will eventually contribute to GMES. In November 2001 the ESA Ministerial Council approved a new 5-year ESA programme dedicated to GMES, called the Earthwatch GMES Services Element (GSE for short). This is the very first programme dedicated to GMES. GSE will deliver policy-relevant services to end-users, primarily (but not exclusively) from Earth Observation sources. GSE is a key element of GMES, because it will enable end-users to become key players in the move from present

generation Earth Observation satellites to future European systems that will deliver vital information on global environment and security. <http://earth.esa.int/gmes>

Geoscience Australia (GA)--Geoscience Australia is the national agency for geoscience research and information. It contributes to enhance economic, social and environmental benefits to the community – by providing input for decisions that impact upon resource use, management of the environment, and the safety and well-being of Australians. Its major planned outcomes are: enhanced global attractiveness of Australia's offshore and onshore exploration, improved resource management and environmental protection, safer communities and transportation. <http://www.ga.gov.au>

Health - An EcoSystem Approach--Many ecological disasters can be directly traced to careless exploitation of the environment, with human beings as first perpetrator and then victim. Our health closely mirrors the health of our surroundings: this is the basis of the "Ecohealth" approach. It recognizes the inextricable links between humans and their biophysical, social, and economic environments, and that these links are reflected in a population's state of health. http://www.idrc.ca/in_focus_cities/ev-27266-201-1-DO_TOPIC.html

Instituto Nicaraguense de Estudios Territoriales (INETER), Managua, Nicaragua, (Nicaraguan Institute for Territorial Studies)

INETER is the technical and scientific body of the state that provides its services to the entire population in such areas as basic information as well as projects and studies of the environment which contribute to socio-economic development and the lowering of vulnerability to natural disasters, continuously tracking dangerous natural phenomena. <http://www.ineter.gob.ni>

International Research Institute for Climate Prediction (IRI), New York, USA--IRI was established as a cooperative agreement between US NOAA Office of Global Programs and Columbia University. IRI is a unit of the Columbia Earth Institute located at Lamont-Doherty Earth Observatory. The vision of the IRI is that of an innovative science institution working to accelerate the ability of societies worldwide to cope with climate fluctuations, especially those that cause devastating impacts on humans and the environment, thereby reaping the benefits of decades of research on the predictability of El Niño-Southern Oscillation phenomenon and other climate variations. By orchestrating a wide network of collaborations and comprehensive programs that couple physical science research and applications research with capacity building, the IRI is a unique institution in the international development of applications of climate prediction. <http://iri.ldeo.columbia.edu>

National Atmospheric Release Advisory Center (NARAC) [Mar 5 06]--The National Atmospheric Release Advisory Center, NARAC, provides tools and services that map the probable spread of hazardous material accidentally or intentionally released into the atmosphere. NARAC provides atmospheric plume predictions in time for an emergency manager to decide if taking protective action is necessary to protect the health and safety

of people in affected areas. Located at the University of California's Lawrence Livermore National Laboratory, NARAC is a national support and resource center for planning, real-time assessment, emergency response, and detailed studies of incidents involving a wide variety of hazards, including nuclear, radiological, chemical, biological, and natural emissions. <http://narac.llnl.gov/>

National Environmental Health Association [Sep 10 06]-- The National Environmental Health Association (NEHA) had its origins in the state of California where it was incorporated in 1937. The original impetus behind the creation of a national professional society for environmental health practitioners was the desire by professionals of that day to establish a standard of excellence for this developing profession. This standard, which has come to be known as the Registered Environmental Health Specialist or Registered Sanitarian credential, signifies that an environmental health professional has mastered a body of knowledge (which is verified through the passing of an examination), and has acquired sufficient experience, to satisfactorily perform work responsibilities in the environmental health field. <http://www.neha.org/>

StormCenter Communications, Maryland, USA--StormCenter Communications provides leading-edge monitoring and visuals to help the media, government agencies and emergency managers better understand environmental issues to enable the media and educators to increase public awareness. <http://www.stormcenter.com/>

Adventist Development and Relief Agency International (ADRA) [Feb 4 06 Silver Spring MD USA]--ADRA works to improve the quality of life for people in developing countries through integrated community-based development and disaster preparedness and response activities that incorporate its five core portfolio activities. ADRA is the humanitarian affiliate of the Seventh-day Adventist Church. As such, ADRA fulfills its objectives without regard to ethnicity, biographic origin, age, gender, or political or religious association. ADRA's community development programs are comprised of a combination of five primary types of activities or core portfolios. In all programs, ADRA's key operating principles include an emphasis on community ownership in all phases of an activity, strategies for equitable access to services by women and children, and emphasis on tailoring programs to specific local contexts in order to increase impact and mitigate cultural discomfort by partner communities. <http://www.adra.org>

African Methodist Episcopal Church Service and Development Agency, Inc. (AME-SADA) [Feb 4 06 Washington DC USA]--Service and Development Agency, Inc., the international humanitarian relief and development agency of the African Methodist Episcopal Church, is committed to helping people help themselves, providing essential assistance to those in need through health, education and micro-enterprise programs; because we are our brother's keeper. <http://www.amecnet.org/sada/sada.htm>

American Jewish Joint Distribution Committee (AJJDC) [Feb 4 06 New York NY USA]--AJJDC works on behalf of the American Jewish community in over 50 countries outside of North America. The mission includes the rescue, relief and reconstruction of

Jewish communities worldwide. Through its International Development Program, AJJDC conducts development and disaster relief activities on a non-sectarian basis.
<http://www.jdc.org>

American Jewish World Services (AJWS) [Jan 12 06 New York NY]--AJWS is an independent not-for-profit organization founded in 1985 to help alleviate poverty, hunger and disease among the people of the world regardless of race, religion or nationality. It breathes life into Judaism's imperative to pursue justice and helps American Jews act upon a deeply felt obligation to improve the chances for survival, economic independence and human dignity for all people. The inspiration for AJWS' work is drawn from the demand for social justice expressed in traditional Jewish sources. AJWS is a Jewish response to the needs of communities throughout the globe, regardless of race, religion or nationality. The Torah makes it clear that it is a Jewish mandate to respond to the needs of the poor and needy, Jews and non-Jews, and even enemies who are in need. Doing tzedakah, righteous deeds, is part of the Jewish obligation to participate in tikkun olam - helping to repair the world. www.ajws.org/

Baptist World Alliance/Baptist World Aid (BWA/BWAid) [Feb 4 06 Falls Church VA USA]--Baptist World Aid (BWAid) works through Baptist communities around the world, mitigating suffering and providing long-range help for persons in need regardless of religion, nationality, tribe or class. BWAid also helps poor people avoid situations of famine and malnourishment and improve their capacity for self-help and wage earning.
<http://www.bwanet.org/bwaid>

Catholic Medical Mission Board (CMMB) [Feb 4 06 New York NY USA]--Founded in 1928 and rooted in the healing ministry of Jesus, Catholic Medical Mission Board works collaboratively to provide quality healthcare programs and services without discrimination to people in need around the world. <http://www.cmmmb.org>

Catholic Relief Services (CRS) [Feb 4 06 Baltimore MD USA]--Catholic Relief Services was founded in 1943 by the Catholic Bishops of the United States to assist the poor and disadvantaged outside the country. It is administered by a Board of Bishops selected by the Episcopal Conference of the United States, and is staffed by men and women committed to the Catholic Church's apostolate of helping those in need. It maintains strict standards of efficiency and accountability. The fundamental motivating force in all activities of CRS is the Gospel of Jesus Christ as it pertains to the alleviation of human suffering, the development of people and the fostering of charity and justice in the world. The policies and programs of the agency reflect and express the teaching of the Catholic Church. At the same time, Catholic Relief Services assists persons on the basis of need, not creed, race or nationality. <http://www.crs.org>

Episcopal Relief and Development (ERD) [Feb 4 06 New York NY USA]--Episcopal Relief and Development is a major response of the Episcopal Church to God's call to serve Christ in all persons, to love our neighbors, and to respect the dignity of every human being. Episcopal Relief and Development raises, receives, and disburses money and other resources for the relief of human suffering. Episcopal Relief and Development

provides emergency relief in times of disaster; it assists in the rehabilitation of lives, property, and organizations; it initiates and joins in partnership with those who identify and address root causes of suffering; and it supports and extends the social ministry of the church. <http://www.er-d.org>

Interchurch Medical Assistance, Inc. (I.M.A.) [Feb 4 06 New Windsor MD USA]-- I.M.A. is a nonprofit organization providing comprehensive technical and material assistance for overseas health programs of partner churches, faith-based development and relief organizations, and public and private agencies with similar goals. Major activities focus on disease elimination and treatment; strengthening health care systems; procurement of medicines, medical supplies and equipment; and serving as liaison between international funding entities and overseas health-related community organizations, with emphasis placed on partnership, technical exchange, training and capacity building. As a Member association of 12 Protestant relief and development agencies, I.M.A. works through a worldwide network of faith communities affiliated with its member agencies. www.interchurch.org

Who Counts? An initiative by Mango [Jan 12 06 Oxford UK]-- www.mango.org.uk/whocounts Who Counts? is an initiative launched in April 2005 by Mango, a UK registered charity. Mango exists to help NGOs strengthen their financial management by providing training, carefully selected finance staff and guides to good practice. See www.mango.org.uk - or click on the links above - for more about us. We launched the Who Counts? campaign because of our experience that NGOs often aim to increase accountability to beneficiaries, but find it hard to deliver it in practice. Our paper Helping People is Difficult (executive summary) provides an analysis of why they find it so hard. Who Counts? is part of Mango's contribution to MAKEPOVERTYHISTORY, under the "Better Aid" banner. It also links with the Commission for Africa's call for greater transparency in the use of public funding and flows of money to African states. Who Counts? is just as relevant for those concerned about the efficient and effective use of the unprecedented funds made available to NGOs following the Asian Tsunami Disaster. We believe that financial reporting to beneficiaries is a simple and important way for NGOs to improve their impact, and that all NGOs should do it unless there is a clear reason not to.

Benfield Hazard Research Center [Jan 14 06 London UK]-- www.benfieldhrc.org/ The Benfield Hazard Research Centre provides a conduit for the transfer of cutting-edge natural hazard and risk research, practice, and innovation from the academic environment to the business world and government and international agencies. Through the rapid application of new research and practice, the Centre facilitates the improvement of natural hazard and risk assessment and the reduction of exposure to natural catastrophes. The intellectual products of the Benfield Hazard Research Centre fall into two categories: Strategic, curiosity-driven research into natural hazards and the processes that drive them. Applied studies targeted at reducing the impact of natural hazards on society, including: Hazard & risk assessment; Hazard monitoring and forecasting; Hazard mitigation, management and avoidance; Development of effective early warning systems; Education and training; Preparedness.

Center for Hazards and Risk Research at Columbia University [Jan 14 06 New York USA]-- www.ldeo.columbia.edu/chrr/ Columbia University's physical and social scientists are undertaking a new research program in disasters and risk management motivated by a clear and compelling need to reduce the catastrophic impacts on society from natural and human-induced hazards. The Center for Hazards and Risk Research (CHRR) draws on Columbia's acknowledged expertise in Earth and environmental sciences, engineering, social sciences, public policy, public health and business. It has a twofold focus: The advancement of predictive capability for hazard and risk; The integration of core science with techniques for hazard assessment and risk management. This program infuses the scientific and technological perspective on disasters with a deep appreciation of the social, political, and economic realities of the developing, as well as the developed, world. It requires a renewed focus on translating the key scientific concepts of probability and uncertainty into a language and set of rules useful to decision-makers.

Center for Hazards Research at California State University [Jan 15 06 Chico CA]-- www.csuchico.edu/geop/chr/ The Center for Hazards Research coordinates hazards-related research and educational activities by faculty and students at California State University, Chico, and research associates at other institutions throughout California. CHR work to date has largely focused on earthquake, flood, drought, and wildfire hazards, mainly in the State of California. Most CHR activity has been in the application of critical social theory, media analysis, and spatial analytic methods to hazards in California. CHR faculty are also developing hazards and disaster curriculum for Chico State. The CHR anticipates moving more in the direction of educational outreach, through curriculum, symposia, and the World Wide Web.

Hazard Reduction and Recovery Center [Jan 14 06 College Station Texas]-- archone.tamu.edu/hrcc/scope/index.shtml The Hazard Reduction and Recovery Center (HRRC) was established at Texas A&M University in 1988. HRRC researchers focus on hazard analysis, emergency preparedness and response, disaster recovery, and hazard mitigation. Researchers study the full range of natural disasters and technological hazards. Natural disasters include floods, hurricanes, earthquakes, tornadoes and droughts, while technological hazards may involve chemical plant accidents, transportation accidents, hazardous materials and lifeline failures. The Hazard Reduction & Recovery Center is one of only two United Nations (UN-OCHA) Collaborative Centers in the world. The center serves OCHA as a research and consultant agency with particular emphasis on national disaster plans and their implications for future development. The center engages in research on hazard and disaster mitigation, preparedness, response, and recovery. The staff of the HRRC is interdisciplinary in nature and includes the expertise of architects, planners, sociologists, policy analysts, and engineers.

Major Accident Hazards Bureau [Jan 14 06 Ispra Italy]-- mahbsrv.jrc.it/ The Major Accident Hazards Bureau (MAHB) is a special Unit within the Joint Research Centre's Institute for the Protection and Security of the Citizen, Hazard Assessment Unit,

dedicated to scientific and technical support for the actions of the European Commission in the area of the control of Major Industrial Hazards. The overall mission of the Bureau is to assist other services of the Commission, and in particular Directorate General Environment in the successful implementation of European Union policy on the control of major hazards and the prevention and mitigation of major accidents. To fulfil this mission, MAHB carries out scientific and technical activities related to the day to day implementation of relevant Community legislation. Since 1982, when the Original Seveso Directive (Council Directive 82/501/EEC) was approved by the Council of Ministers after the famous accident at Seveso, there has been Community provision for the control of major industrial hazards.

NASA Earth Observatory : Natural Hazards [Jan 15 06 Washington DC]-- earthobservatory.nasa.gov/NaturalHazards/ The purpose of NASA's Earth Observatory is to provide a freely-accessible publication on the Internet where the public can obtain new satellite imagery and scientific information about our home planet. The focus is on Earth's climate and environmental change. In particular, we hope our site is useful to public media and educators. Any and all materials published on the Earth Observatory are freely available for re-publication or re-use, except where copyright is indicated. We ask that NASA's Earth Observatory be given credit for its original materials.

Risk Frontiers Natural Hazards Research Centre [Jan 14 06 Macquarie University North Ryde NSW]-- www.riskfrontiers.com/ Risk Frontiers (formerly the Natural Hazards Research Centre) is regarded as a world leader in quantitative natural hazards risk assessment and risk management. Risk Frontiers, based at Sydney's Macquarie University, is a not-for-profit research organization sponsored by the Australian insurance community. For ten years, it has provided insurers, who are under ever-increasing pressure to minimise risks and maximise returns, with sophisticated research-based solutions. Other applications include emergency management, land use planning and floodplain management. As well as Australia, these tools are currently being used in Europe, North America and Asia.

The James and Marilyn Lovell Center for Environmental Geography and Hazards Research [Jan 15 06 San Marcos TX]-- www.geo.txstate.edu/lovell/index.htm The pinnacle of scientific exploration in the 20th Century was NASA's Apollo program. On Apollo 8, Astronauts Lovell, Borman, and Anders showed all of humanity how truly fragile and precious the Earth's environment is. The "Blue Marble in Space" remains one of the most enduring visions of the Apollo program. During the Apollo 13 mission, Captain Lovell and his crew captured the focus of the entire world. They illustrated the courage and daring that have been associated with exploration of unknown environments since the Voyages of Discovery crisscrossed the world. The James and Marilyn Lovell Center for Environmental Geography and Hazards Research recognizes the legacy of Jim Lovell's outstanding leadership in global exploration and environmental science and Marilyn Lovell's unwavering support of her husband and his extraordinary vision. The Center for Environmental Geography and Hazards Research provides a focus for geographers with interests in Environmental Geography, and Natural and Technological Hazards. The Center provides a locus of scholarship and activity emphasizing the

importance of understanding the Earth environment, the analysis and reduction of natural and technological hazards, and achieving sound policy formulation on these issues.

The Natural Hazards Research and Applications Information Center at the University of Colorado [Jan 15 06 Boulder CO]-- www.colorado.edu/hazards/ The mission of the Natural Hazards Center at the University of Colorado at Boulder is to advance and communicate knowledge on hazards mitigation and disaster preparedness, response, and recovery. Using an all-hazards and interdisciplinary framework, the Center fosters information sharing and integration of activities among researchers, practitioners, and policy makers from around the world; supports and conducts research; and provides educational opportunities for the next generation of hazards scholars and professionals.

Pan American Health Organization The Pan American Health Organization (PAHO) is an international public health agency with 100 years of experience in working to improve health and living standards of the countries of the Americas. It serves as the specialized organization for health of the Inter-American System. It also serves as the Regional Office for the Americas of the World Health Organization and enjoys international recognition as part of the United Nations system.
<http://www.paho.org/>

Agency for Toxic Substances and Disease Registry (ATSDR) [Mar 5 06]--The mission of the Agency for Toxic Substances and Disease Registry (ATSDR), as an agency of the U.S. Department of Health and Human Services, is to serve the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and disease related to toxic substances. ATSDR is directed by congressional mandate to perform specific functions concerning the effect on public health of hazardous substances in the environment. These functions include public health assessments of waste sites, health consultations concerning specific hazardous substances, health surveillance and registries, response to emergency releases of hazardous substances, applied research in support of public health assessments, information development and dissemination, and education and training concerning hazardous substances. <http://www.atsdr.cdc.gov/>

American Academy for Emergency Medicine [Mar 5 06]--The American Academy of Emergency Medicine is the specialty society of Emergency Medicine with 5,000 members. <http://www.aaem.org/>

American Association of Health Plans - Bioterrorism and Emergency Preparedness [Mar 5 06]--Welcome to America's Health Insurance Plans (AHIP), the voice of America's health insurers. AHIP is the national trade association representing nearly 1,300 member companies providing health insurance coverage to more than 200 million Americans. This site is dedicated to keeping you aware of the ongoing bioterrorism and emergency preparedness activities within the government and across the nation. AAHP staff members are keeping current with events and recommendations to help our member plans with their preparedness planning and to keep you informed.

Armed Forces Institute of Pathology (AFIP) [Mar 5 06]--The Armed Forces Institute of Pathology (AFIP) is a tri-service agency of the Department of Defense specializing in pathology consultation, education and research. AFIP maintains 22 subspecialty departments with a combined workforce of over 820 personnel, including over 120 pathologists and other scientists. In 2001 AFIP consulted on over 92,000 cases, including 55,000 sent for an expert "second opinion." 90% are tumor pathology cases -revealing difficult, unusual or rare entities not typically seen in the military or civilian medical communities. AFIP experts also conducted 27,000 cytology cases for the U.S. Air Force in 2001, and another 10,000 cases for quality assurance and risk management.
<http://www.afip.org/>

Armed Forces Radiobiology Institute [Mar 5 06]--AFRRI, a triservice laboratory chartered in 1961, conducts research in the field of radiobiology and related matters essential to the operational and medical support of the U.S. Department of Defense and the military services. The institute collaborates with other governmental facilities, academic institutions, and civilian laboratories in the United States and other countries. Its findings have broad military and civilian applications.

Center for Humanitarian Psychology [Jan 12 06 Geneva Switzerland]--The Centre for Humanitarian Psychology is an international organisation whose aim is to provide psychological support to humanitarian workers in the field. We work through a network of professionals who are both psychologists and familiar with humanitarian work, trainers, partners and volunteers, in Europe and in the field. For the past ten years or so, traditional wars between states have been superseded by regional conflicts and varying types of belligerents which make conditions of work difficult for humanitarian workers. In the field they have become more and more frequently the target for different types of aggressions : terrorist acts, rapes, kidnapping, even deaths of colleagues at work. This puts them under psychological and physical stress over and above their difficult conditions of living (promiscuity, health and hygiene, management, etc) which sometimes become unbearable and places them in traumatic situations whose consequences are often irreversible. www.humanitarian-psy.org/pages/default_en.asp

Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities--The Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities has released three checklists for voluntary use by county, city, state, and federal public health agencies in assessing their legal preparedness for public health emergencies. The checklists are "Civil Legal Liability and Public Health Emergencies," "Interjurisdictional Legal Coordination for Public Health Emergency Preparedness," and "Local Government Public Health Emergency Legal Preparedness and Response."
<http://www.publichealthlaw.net/Resources/BTlaw.htm>

Center for Public Health Preparedness, University at Albany School of Public Health--This guide, Public Health Incident Command System (PHICS): A Guide for the Management of Emergencies or Other Unusual Incidents within Public Health Agencies (2005), provides an overview of how the standardized ICS system is applied within the context of public health. Appendices in Volume II feature job action sheets,

forms, an emergency plan outline, and a resource directory. Available free online.
<http://www.ualbanycph.org/pinata/phics/default.cfm>

Centers for Disease Control [Jan 12 06 Atlanta GA]--The Centers for Disease Control and Prevention (CDC) is one of the 13 major operating components of the Department of Health and Human Services (HHS), which is the principal agency in the United States government for protecting the health and safety of all Americans and for providing essential human services, especially for those people who are least able to help themselves. Since it was founded in 1946 to help control malaria, CDC has remained at the forefront of public health efforts to prevent and control infectious and chronic diseases, injuries, workplace hazards, disabilities, and environmental health threats. Today, CDC is globally recognized for conducting research and investigations and for its action oriented approach. CDC applies research and findings to improve people's daily lives and responds to health emergencies—something that distinguishes CDC from its peer agencies. www.cdc.gov

Centers for Public Health Preparedness [Mar 5 06]--By reaching and teaching the public health workforce, the Centers for Public Health Preparedness (CPHP) help to ensure a strong public health system when and where it is needed. Through their commitment to providing lifelong learning opportunities to public health professionals, schools of public health prepare the public health workforce to meet health threats and emergencies. The network of 50 CPHP is a unique partnership between accredited schools of public health, dentistry schools, medical schools, and veterinary schools and state and local health departments. The power of the network lies in the partnerships. It provides a countrywide defense system through the preparation of front-line public health workers and first responders. <http://www.asph.org/acphp/>

Crisis & Emergency Risk Communication: By Leaders for Leaders--This resource, available free online from the Centers for Disease Control, gives leaders tools to help them speak to the public, media, partners, and stakeholders during an intense public-safety emergency. Topics include the psychology of communicating in a crisis, the leader's role as a spokesperson, working with media during a crisis, and public health and media law. www.cdc.gov/communication/emergency/leaders.pdf

Epidemic Intelligence Service [Mar 5 06]--The EIS was established in 1951 following the start of the Korean War as an early warning system against biological warfare and man-made epidemics. The program, composed of medical doctors, researchers, and scientists who serve in 2-year assignments, today has expanded into a surveillance and response unit for all types of epidemics, including chronic disease and injuries.
<http://www.cdc.gov/eis/>

European Agency for the Development and Health [Jan 26 Brussels Belgium]--AEDES is a Co-operative society of Belgian law. Aside from the experts on short-term missions, the AEDES staff, at the beginning of the year 2004, consisted of more than 25 experts in the field for long-term missions and a team of 13 persons at the Brussels office. The Brussels office is organised in technical and administrative operational cells. Their

tasks are: Organisation and management of short term expertise missions, for which it disposes of a file of more than 2.000 experts; Technical, logistical and financial management and monitoring for long term projects executed by AEDES; and Organisation and monitoring of internal training and public health research. Since the creation of AEDES, more than 650 experts have carried out mission in nearly 50 different countries, representing 4.500 person/month for its long term projects while short term missions represent 400 person/month. AEDES has an annual turnover of around 6 Millions EUROS, (\pm 6 millions USD). www.aedes.be/flash/default.asp

Foodborne Outbreak Response and Surveillance Unit [Mar 5 06]--The term Foodborne Diseases encompasses a diverse collection of acute illnesses cause by bacteria, viruses, parasites, and chemicals. Only a small proportion of foodborne illness occurs in the setting of a recognized outbreak. Nevertheless, outbreak data are uniquely valuable in establishing a link between foodborne illness and specific foods or settings. This site has been established to provide public health officials, researchers, and the general public with information on foodborne disease outbreaks. Our role is to investigate outbreaks and establish both short-term control measures and long-term improvements to prevent similar outbreaks in the future. We strive to work closely with state and local health departments to investigate foodborne outbreaks and make information available to the public.

Headington Institute [Jan 12 06 Pasadena CA]--The Headington Institute was established in 2001 to provide psychological and spiritual support for humanitarian aid and disaster relief personnel worldwide. The Institute provides a collaborative network of mental health professionals offering counseling services, organizational consultation, and preventive education and training to relief organizations. Service teams consisting of seasoned clinicians and competent trainees offer both short and long-term assistance to those working with victims of war, political violence, disease, and natural disasters. By providing direct services, education, information and referral, the Headington Institute is a partner to aid organizations seeking to provide support for the emotional well-being of their personnel. www.headington-institute.org

Institute of Medicine of the National Academies [Mar 5 06]--The nation turns to the Institute of Medicine (IOM) of the National Academies for science-based advice on matters of biomedical science, medicine, and health. A nonprofit organization specifically created for this purpose as well as an honorific membership organization, the IOM was chartered in 1970 as a component of the National Academy of Sciences. The Institute provides a vital service by working outside the framework of government to ensure scientifically informed analysis and independent guidance. The IOM's mission is to serve as adviser to the nation to improve health. The Institute provides unbiased, evidence-based, and authoritative information and advice concerning health and science policy to policy-makers, professionals, leaders in every sector of society, and the public at large.

InterHealth [Jan 12 06 London UK]--InterHealth is a medical charity providing specialist health services primarily for the aid, development, mission and NGO sectors.

We are based in Central London, just five minutes' walk from Waterloo Station. Our specialisms include travel health services, medical screenings, psychological health services, occupational health and work-life balance reviews. We operate a Travel Health Clinic and Travel Supplies Centre. www.interhealth.org.uk

International Health Exchange [Jan 12 06 London UK]--International Health Exchange supports initiatives to bring about sustained improvements to people's health in developing countries by providing appropriately experienced people to organisations requiring their skills. Publications: Our publication The Health Exchange magazine brings you first-hand coverage of the challenges facing health practitioners in developing countries, reporting on the practical approaches to health development and exploring the issues affecting people's health in low-income countries. The magazine also provides you with news and information about jobs and courses in health development. We also produce a number of handbooks and guides, including a Course Calendar that lists courses from over 90 universities all over the world. www.ihe.org.uk

National Center for Environmental Health [Mar 5 06]--The environment is everything around us - the air we breathe, the water we drink and use, and the food we consume. It's also the chemicals, radiation, microbes, and physical forces with which we come into contact. Our interactions with the environment are complex and are not always healthy. We at the National Center for Environmental Health, also known as NCEH, are working to prevent illness, disability, and death from interactions between people and the environment. We are especially committed to safeguarding the health of populations that are particularly vulnerable to certain environmental hazards - children, the elderly, and people with disabilities. <http://www.cdc.gov/nceh/>

National Center for Infectious Diseases (NCID) [Mar 5 06]--The mission of the National Center for Infectious Diseases (NCID) is to prevent illness, disability, and death caused by infectious diseases in the United States and around the world. To accomplish this goal, our staff members work in partnership with local and state public health officials, other federal agencies, medical and public health professional associations, infectious disease experts from academic and clinical practice, and international and public service organizations. We accomplish our mission by conducting surveillance, epidemic investigations, epidemiologic and laboratory research, training, and public education programs to develop, evaluate, and promote prevention and control strategies for infectious diseases. <http://www.cdc.gov/ncidod/index.htm>

National Disaster Medical System [Mar 5 06]--The National Disaster Medical System (NDMS) is a section within the U.S. Department of Homeland Security, Federal Emergency Management Agency, Response Division, Operations Branch, and is responsible for supporting Federal agencies in the management and coordination of the Federal medical response to major emergencies and Federally declared disasters including: Natural Disasters
Technological Disasters, Major Transportation Accidents, Acts of Terrorism including Weapons of Mass Destruction Events <http://ndms.dhhs.gov/index.html>

National Governors Association--The National Governors Association Center for Best Practices produced this issue brief titled "State Strategies for Fully Integrating Public Health into Homeland Security."

<http://www.nga.org/Files/pdf/FULLYPUBLICHEALTH.pdf>

RAND Center for Domestic and International Health Security [Mar 5 06 Arlington VA USA]--The Center for Domestic and International Health Security is a multidisciplinary research collaboration housed at RAND. The Center's mission is to improve global health, and to protect the health of the American homeland by strengthening our defenses against terrorist attacks. Drawing on RAND's expertise in health and in foreign policy, the Center frames the issues in these areas, gathers the necessary information, and evaluates alternative strategies and programs. Center staff include behavioral scientists, economists, medical sociologists, organizational analysts, physicians, policy analysts, political scientists, and statisticians. They are focusing their efforts in three broad areas: Global health; Mental health; Public health and preparedness.

<http://www.rand.org/health/centers/healthsecurity/>

UCLA Center for Public Health and Disasters--The UCLA Center for Public Health and Disasters (CPHD) was established in 1997 to address the critical issues faced when disaster impacts a community. The Center is based in the Department of Community Health Sciences in the UCLA School of Public Health. Center faculty and staff have diverse backgrounds that include emergency medicine, environmental health, urban planning, engineering, international health, health services, epidemiology, gerontology, sociology, and community health. <http://www.cphd.ucla.edu/>

University of South Dakota Disaster Mental Health Institute--The mission of the Disaster Mental Health Institute (DMHI) is the promotion, development, and application of both practice and research in disaster mental health. The Institute was founded in 1993, and was designated a South Dakota Board of Regents Center of Excellence in 1997. The institute also hosts an annual "Conference on Innovations in Disaster Mental Health." The DMHI Web site provides in-depth information about the institute and conference, a list of available publications, as well as several online booklets on coping with the aftermath of disasters.

<http://www.usd.edu/dmhi/>

World Health Organization: Health Action in Crises--The principal objective of the WHO Health Action in Crises department is to reduce avoidable loss of life, burden of disease and disability in crises in indicative list of crisis-prone and crisis-affected countries. <http://www.who.int/hac/en/>

Mission Supplies A UK-based company with 'a keen desire to help those who are working overseas obtain the items they need to carry out their work, both effectively and efficiently.' Their clients range from large aid agencies like Oxfam to individuals working overseas who might need some spare parts. Their website is an interesting experience in and of itself. Certainly worth the visit.

<http://www.missionsupplies.co.uk/>

MapAction [Jan 11 06 Lime Farm Cottage, Little Missenden, Buckinghamshire UK]--A UK-based charity that provides rapid response mapping services in disaster areas and development programmes. "MapAction specialises in the mapping of disaster areas and supplying geographical information for humanitarian relief operations. Using the latest geographical information system (GIS) technology we aim to produce instant, real-time maps of a disaster - such as an earthquake or flooding - and then provide the information to other NGOs and government agencies in the field. By continually updating the maps, our team of expert volunteers working on the ground in the disaster area aim to relieve the burden on emergency workers in the crucial first hours and days of a humanitarian crisis so that they can get on with the job of saving lives and alleviating suffering more efficiently." www.mapaction.org

Fritz Institute [Jan 12 06 San Francisco CA]--Fritz Institute is a non-profit organization dedicated to addressing complex operational challenges in the delivery of humanitarian aid to people and communities in need worldwide. We work to strengthen the efficiency and effectiveness of the humanitarian sector by collaborating with the corporate sector and academic community to leverage best practices, technology, and resources that can be used by all humanitarian organizations. Fritz Institute was founded in 2002 by Mr. Lynn Fritz, a social entrepreneur and philanthropist, who recognized that effective front-line humanitarian operations must be supported by strong back room capabilities: effective operational processes, efficient uses of technology, objective performance metrics, and institutionalized learning across the humanitarian sector. Mr. Fritz is the former chairman and CEO of Fritz Companies, a Fortune 1000 global logistics corporation. www.fritzinstitute.org

SUMA Humanitarian Supply Management System [Jan 12 06 San Jose Costa Rica]--When a major disaster strikes a country, local and international communities respond with an outpouring of assistance. Disaster managers must be prepared to receive large quantities of unsolicited donations that may not meet the needs of the affected population. The process of sorting through tons of supplies and ensuring that urgently needed items reach the disaster victims can overwhelm relief workers. SUMA, the Supply Management System from the PAHO/WHO, is an information management tool that helps national authorities to make order of the chaos often caused by uncoordinated humanitarian assistance. SUMA uses simple software to track items from the moment donors commit to sending supplies until they are distributed effectively to the affected population. www.disaster-info.net/SUMA/index.html

SATELLIFE [Jan 29 06 Watertown MA USA]--For the past 13 years, SATELLIFE has been engaged in using ICT for health in countries in Africa. Pioneering the use of appropriate technologies on the continent, SATELLIFE has connected health professionals with each other and to life-saving medical and public health information. SATELLIFE created HealthNet, a global electronic information and communication network that provides knowledge resources on today's most urgent health issues, affordable email, computer literacy training, and opportunities for dialogue and

information exchange among health professionals in the world's poorest nations. As a leader in promoting better health care through the innovative use of information technologies, SATELLIFE has been testing the efficacy of the handheld computer or personal digital assistant (PDA) as a tool for data collection and information dissemination in Africa. SATELLIFE's efforts were recently recognized as a winner of the 2002 Stockholm Challenge for Pioneering IT Projects; Finalist, 2002 Digital Partners Social Enterprise Laboratory Award; and Finalist, 2002 ICT Stories Competition sponsored by infoDev and IICD. www.healthnet.org/

Making Cities Work Urban Strategy: USAID. USAID's Urban Programs Team is dedicated to increasing economic prosperity, democracy and security in the world's rapidly growing cities. The Team works across sectors to advance the Agency's Making Cities Work Strategy in the following areas: City Management and Governance; Municipal Finance; Housing; Infrastructure and Services; Local Economic Growth; Urban Health and Environment; Urban Security. <http://www.makingcitieswork.org/>

Urban Health Resource Centre [UHRC] is a non profit Indian organization which aims to address health issues of the urban poor through a consultative and knowledge-sharing approach in partnership with the government and civil society. UHRC develops innovative urban health programs in diverse cities. Experiences from these programs are used to influence larger health initiatives such as the Urban Health component of National Rural Health Mission and similar programs of Non-Government stakeholders through proactive information dissemination and advocacy. <http://www.uhrc.in/>

Swiss Agency for Development and Cooperation SDC Urban Health. By the year 2000, about half of the global human population had become urban citi-zens, most of them living in the rapidly growing cities of Africa, Asia and Latin America. Living in an urban area does not mean “development” for many of these people. In most cases a majority live in “poverty”, characterised by household and environmental deprivation and in circumstances of extreme social and economic stress. The attainment by all urban citizens of the highest possible level of health through the strengthening of urban health systems is therefore an important challenge, and a crucial element in the struggle against poverty, underdevelopment and political instability. In response to the necessity for health improvements for urban citizens as well as to the absence of adequate basic health services, the Swiss Agency for Development and Cooperation (SDC) was in the early 1990s one of the first agencies to invest in the widely neglected area of urban health. An important reasoning for doing so was the potential impact of such activities on poverty alleviation, gender, empowerment, good governance and equity, all being guiding principles of the SDC health policy. www.sdc-health.ch/priorities_in_health/pro_poor_health_service/urban_health

The International Society for Urban Health [ISUH] is an association of researchers, scholars, and professionals from various disciplines and areas of the world who study the health effects of urban environments and urbanization. Membership in ISUH is open to anyone who is interested in the health of urban populations. The goals of ISUH are to

encourage research, interventions, and program evaluations that lead to healthier cities in the 21st century.

<http://www.isuh.org/>

Center for Research on Inner City Health [CRICH] is Canada's first and only transdisciplinary and hospital-based research centre dedicated to reducing health disparities and improving the health of socially and economically disadvantaged urban populations. Our research agenda is intervention-oriented, patient and population-focused and policy-sensitive. Our overlapping population foci include: homeless and underhoused groups, urban aboriginals, women and children at risk, immigrants and refugees, people living with HIV/AIDS and people living with severe and persistent mental illness.

<http://www.stmichaelshospital.com/crich/>

The International Healthy Cities Foundation. The term Healthy Cities was coined in 1985. It was the title of a speech given at an international meeting in Canada. The theme - health is the result of much more than medical care; people are healthy when they live in nurturing environments and are involved in the life of their community, when they live in Healthy Cities. This presentation offered a new view of the interactions that affect people's lives. It took into consideration the influence of the context - the place, surroundings, relationships and opportunities on the individual. It began to highlight the interconnections among what seem to be diverse elements and problems in society. And finally, it suggested the solutions to both community and quality of life problems also may be interwoven.

<http://www.healthycities.org/overview.html>

Johns Hopkins Urban Health Institute is a collaboration and a vital connection with East Baltimore, a community that has long struggled with an all-too-familiar list of persistent urban health woes. The Institute is the starting point for forging true University and community partnerships in health care, education and community planning, with all partners working to change the trajectory for the children, youth and families of East Baltimore. As it seeks to build a "learning community," the Institute draws on the expertise of neighborhood residents, educators, philanthropic organizations, elected representatives and community leaders, in addition to the wealth of intellectual resources that Hopkins can offer. The past year has been one of refining and broadening the Institute's mission to serve as a bridge between the University and the community through innovative partnerships designed to better the health and well-being of East Baltimore.

<http://www.jhsph.edu/urbanhealth>

The Urban Health Program at University of Illinois Chicago improves the quality of health care services for medically underserved urban populations, especially those in Health Professions Shortage Areas of Illinois, by expanding health professions education opportunities for underrepresented groups (African Americans, Hispanic Americans, Mainland Puerto Ricans, and Native Americans). <http://www.uic.edu/depts/uhealth/>

Central Building Research Institute (CBRI), India. The Central Building Research Institute, Roorkee, India, has been vested with the responsibility of generating, cultivating and promoting building science and technology in the service of the country. Since its inception in 1947, the Institute has been assisting the building construction and building material industries in finding timely, appropriate and economical solutions to the problems of materials, rural and urban housing, energy conservation, efficiency, fire hazards, structural and foundation problems and disaster mitigation. <http://www.cbri.org>

Earthquake Disaster Mitigation Research Center (EDM), Miki, Japan. The main purpose of the EDM is to produce “frontier research on earthquake disaster mitigation for urban regions.” The major research activities are performed by three research teams: the disaster process simulation team, the disaster information system team and the structural performance team. <http://www.edm.bosai.go.jp>

Environment and Society Institute (ESI), State University of New York, Buffalo, USA It offers courses on engineering and applied sciences and hosts the National Center for Geographic Information and Analysis (NCGIA), the Center for Urban Studies. The Multidisciplinary Center for Earthquake Engineering Research (MCEER) is an affiliated research center. <http://www.buffalo.edu>

Institute for Hazards Mitigation Planning and Research, College of Architecture and Urban Planning, University of Washington The objective of the Institute for Hazards Mitigation Planning and Research is to encourage the incorporation of hazards mitigation principles into disaster preparedness, response and recovery practices through planning programs, community involvement and research to support the creation of more disaster-resistant and sustainable communities in the Pacific Northwest. <http://depts.washington.edu/mitigate> www.caup.washington.edu

Urban Geoscience Division of Geoscience Australia. Geoscience Australia is the national agency for geoscience research and geospatial information. It is located within the Industry, Tourism and Resources portfolio. As part of its extensive work on urban centres, Geoscience Australia watches and assesses earth-surface processes that pose a risk to Australia. It gathers data and develops tools that governments and other authorities may use to make the nation as safe as possible from natural and human-induced hazards. www.ga.gov.au

Action Without Borders Search for over 48,000 nonprofit and community organizations in 165 countries by name, location or mission; thousands of volunteer opportunities in your community and around the world; and a nonprofit career centre with hundreds of job and internship listings. <http://www.idealists.org/>

Aid Workers Network This practical site gives advice on finding your first job, as well as highlighting openings for experienced practitioners/LEPS. "When working in relief and development projects, we often face situations others have encountered before us. Sometimes we ask around and consult a few colleagues for their opinions and advice. Other times we "jump in at the deep end" and do as best we can under the circumstances.

Aid Workers Network links relief and development field staff to share support, ideas and best practice. This web site is being developed by a team of experienced aid workers to provide a comprehensive resource for busy field workers needing practical advice and proven resources to help with their current work." www.aidworkers.net

AlertNet [Jan 11 06 London UK]-- www.alertnet.org/thepeople/jobs/index.htm This relief community orientated site highlights in a very clear way key humanitarian jobs around the world. "Reuters AlertNet is a humanitarian news network based around a popular website. It aims to keep relief professionals and the wider public up-to-date on humanitarian crises around the globe. AlertNet attracts upwards of three million users a year, has a network of more than three hundred contributing humanitarian organizations and its weekly email digest is received by more than 10,000 readers. It was started in 1997 by Reuters Foundation - an educational and humanitarian trust -- to place Reuters' core skills of speed, accuracy and freedom from bias at the service of the humanitarian community."

Beijing International Volunteers Association (BIVA) [Feb 24 06]--Beijing International Volunteers Association (BIVA) is a not-for-profit organization established in China with the support of China International Center for Economic and Technical Exchanges (CICETE) and United Nations Development Programme (UNDP). BIVA is committed to human resource-based work with individuals and organizations involved in social improvement and development, with a special emphasis on volunteerism. www.civa.org.cn/english/home.htm

Careers Without Borders [Jan 11 06 Ottawa ON]-- www.careerswithoutborders.com The first fully inter-active website devoted to employment needs in the development sector. "GDG created CWB in response to requests from our partners and members who indicated they wanted a simple, cost-effective web based tool specifically designed for international development and emergency response recruitment. We recognize that organizations are challenged to find quality candidates to fill their needs. The options are to advertise in newspapers, which tend to be too expensive for the specialized market, or online through personal job boards or public job boards."

DEVJOBS [Jan 11 06 Los Banos, Laguna, Philippines]-- www.devjobsmail.com/main/homepage.html An internet service that provides international job announcements of various development fields. "DEVJOBS is being operated by a small company called "DEVJOBS Information Service". This company was formed by a person who is deeply involved in development. Carlos Ani has been engaged in the development field for the past 23 years and he started DEVJOBS in 1999. Carlos is an international microfinance consultant, by profession, serving a number of international development organizations. In 1999, seeing the need by development organizations for qualified professionals, Carlos created an international mailing list service called DEVJOBS, which announces all kinds of jobs related to development. It started like a hobby and it was run on volunteer basis."

Dev-Zone [Jan 11 06 Aotearoa NZ]-- www.dev-zone.org/jobs This New Zealand based site includes details of a large number of humanitarian and development positions globally. "Dev-Zone is an independent Aotearoa New Zealand based resource centre on international development and global issues. We work to inform and educate New Zealanders about international development and global issues. We run a library and a website, provide email updates, publish our magazine Just Change, engage in information related projects and work with like-minded organisations to raise awareness about issues. Dev-Zone, alongside the Global Education Centre is a programme of the Development Resource Centre (DRC). The DRC is an independent, not-for-profit, non-governmental organisation governed by a charitable trust and core-funded by NZAID Nga Hoe Tuputupu-mai-tawhiti, a semi-autonomous body of the Ministry of Foreign Affairs and Trade."

EU-CORD [Jan 11 06 Brussels Belgium]-- eu-cord.org/vacancies.html The vacancies page for EU-CORD, a network of 12 European-based Christian relief and development agencies. "EU-CORD asbl, Christian Organisations in Relief and Development, was formed in 1998 with the goal of serving the poor more effectively and improving the conditions of disadvantaged people in the developing world. In 1999 a secretariat was set up in Brussels in order to help the members become more active in the institutions of the European Union. By 2001 the network had grown to 12 members from 8 EU Member States with a total annual turnover of 127 million euro."

Expats Network [Jan 11 06 Paris France]-- www.expats-network.org This French based site both provides job information and is a forum for international exchange. "Expats Network is a web site managed by AVESI , an international aid workers association created in 1998. AVESI is a non-profit and independent organisation initiated by Aid Workers, for Aid Workers. Almost 6000 membres registered in the Directory. An average of 700 daily visits, 20 000 monthly. More than 30 French and International NGOs, regularly advertising. 250 job ads online less 3 months old, and continuously updated."

Geekcorps [Feb 24 06]--Geekcorps is a US-based, non-profit organization that places international technical volunteers in developing nations to contribute to ICT projects while transferring the technical skills required to achieve long-term stability. Ultimately we strive to cross-pollinate developing nations with the skills needed to maximize the benefits of modern telecommunications. Our current applicant database contains more than 3,500 technical specialists willing to share their talents and experience in developing nations. In all cases, we carefully match applicants with projects based on the skills that are needed based on our assessments and the scopes of work provided by partner businesses. Much of our past work has been performed in conjunction with ICT SME's, but we have also contributed directly to government projects and other organizations while retaining the skills-transfer element of our programs. <http://geekcorps.org/>

Hands On Network --Hands On Network is at the forefront of a growing civic movement of people coming together to strengthen communities through meaningful volunteer action. Hands On will support the mobilization of 6.4 million volunteers and

100,000 volunteer leaders over the next two years. The Hands On Campaign will engage volunteers in projects designed to have immediate, tangible impact on children and education, health and wellness, and the environment. Hands On Network's Corporate Service Council, an alliance of CEOs and civic leaders, is leading the campaign to engage volunteer participation and leadership in meaningful projects across the country. We are launching a people raising campaign. Join Us. Raise your hands.

<http://www.handsonnetwork.org/home/>

Médecins sans Frontières (MSF)/Doctors without Borders--Recruits health professionals and logistics as volunteers for overseas humanitarian assignments.

"Médecins Sans Frontières (MSF) is an international humanitarian aid organisation that provides emergency medical assistance to populations in danger in more than 70 countries. In countries where health structures are insufficient or even non-existent, MSF collaborates with authorities such as the Ministry of Health to provide assistance. MSF works in rehabilitation of hospitals and dispensaries, vaccination programmes and water and sanitation projects. MSF also works in remote health care centres, slum areas and provides training of local personnel. All this is done with the objective of rebuilding health structures to acceptable levels." www.msf.org

UN Volunteers -- "The United Nations Volunteers programme (UNV) is the volunteer arm of the United Nations. It was created by the UN General Assembly in 1970 to serve as an operational partner in development cooperation at the request of UN member states. It reports to the United Nations Development Programme (UNDP) and works through UNDP's country offices around the world. In 2004, its seventh consecutive year of growth, the UNV programme mobilized some 7,300 volunteers, representing 166 nationalities, who served in 140 countries. Since 1971, more than 30,000 UN Volunteers from developing and industrialized nations have supported peace, relief and development initiatives worldwide." www.unv.org/index.htm

Voluntary Service Overseas--VSO was voted top international development charity in the International Aid and Development category at the Charity Awards 2004 for its work in promoting innovative approaches to globalising volunteering. Our approach to volunteering has changed dramatically over the years. We no longer send school-leavers - today the average age of a volunteer is 38 and most placements are for two years. We are a leading development charity with almost 2,000 skilled professionals currently working in over 40 countries. We respond to requests from governments and community organizations throughout Asia and Africa. The volunteers aim to pass on their expertise to local people so that when they return home their skills remain. Volunteers can be aged between 20 and 75 years old and must have a formal qualification and some work experience. Regular postings are for two years and volunteers are provided with accommodation and a local level allowance as well as air fares and insurance. We are actively recruiting volunteers all the time. The range of jobs is vast, and includes small business advisors, teachers, social workers, health professionals, management consultants, marine biologists, accountants and farmers. www.vso.org.uk/

Volunteer Match:—Volunteer Match is a leader in the nonprofit world dedicated to helping everyone find a great place to volunteer. The organization offers a variety of online services to support a community of nonprofit, volunteer and business leaders committed to civic engagement. Our popular service welcomes millions of visitors a year and has become the preferred internet recruiting tool for more than 30,000 nonprofit organizations. Read more in our latest annual report. <http://www.volunteermatch.org/>

Volunteering South Australia--South Australia has always had a strong culture of volunteering. In 1982 Mavis Reynolds and Joy Noble were instrumental in establishing Volunteering SA, formerly The Volunteer Centre of South Australia. Our Mission, as a peak body, is to promote volunteering and play a key leadership role in advancing volunteering in South Australia. Our Core Business advances our mission and we are guided by our Core Values. We will advance our mission over the next three years via our Strategic Plan. Our team is staffed by a combination of paid and volunteer staff who carry out a number of different roles in providing a wide range of services and advice to those working with or as volunteers. Volunteering SA provides an extensive range of services, support and resources for volunteers and volunteer organisations. <http://www.volunteeringSA.org.au/>

World Service Enquiry --What job opportunities are there for me in a relief or development agency in the UK or abroad? How do I transfer my skills into the development sector? What qualifications, courses or experience do I need to be an aid worker? What work opportunities are there for me in a relief or development agency? How could I use my training and experience to work in international development? Why am I not getting any positive response from my applications to agencies? If you have questions similar to these then there is no doubt this service is right for you. A One to One provides you with advice and information about working within the development sector and comprises: a conversation that lasts an hour and half which provides an opportunity to consider your qualification, experience, skills, values and attitudes, motivation, expectations, opportunities, present and future goals and strategies to achieve your goals; space for you to get your questions answered by an expert; CV review. www.wse.org.uk

World Volunteer Web --The World Volunteer Web is brought to you by the United Nations Volunteers (UNV) programme in partnership with the following organizations: CIVICUS: World Alliance for Citizen Participation; Inter-American Development Bank (IDB); International Association for Volunteer Effort (IAVE); International Federation of Red Cross and Red Crescent Societies (IFRC); Merrill Associates; Millennium Campaign; OneWorld.net; Portal do Voluntário. The World Volunteer Web supports the volunteer community by serving as a global clearinghouse for information and resources linked to volunteerism that can be used for campaigning, advocacy and networking. It is an online hub where the community can meet, share resources and coordinate activities to mobilize volunteer action in support of the Millennium Development Goals. www.worldvolunteerweb.org/

Arctic Change--The objective of this NOAA website is to present recent indicators that describe the present state of the Arctic climate and ecosystem in an accessible, understandable, and credible historical context. <http://www.arctic.noaa.gov/detect/>

EuroTempest--EuroTempest provides real-time forecasts out to 5 days ahead for European windstorms and their localised potential wind damage. The interactive web-based service <http://www.eurotempest.com> offers local damage forecasts, down to postcode level, for winter storms affecting seven European countries (United Kingdom, Belgium, Denmark, France, Germany, Ireland, and the Netherlands). The new service also includes warnings for the severity and timing of high windspeeds in all other European countries.

Climate Institute--The Climate Institute has been in a unique position to inform key decision-makers, heighten international awareness of climate change, and identify practical ways of achieving significant emissions reductions. This has been done through several different media including symposia, conferences, roundtables, and special briefings. http://www.climate.org/climate_main.shtml

Climate Variability and Predictability [CLIVAR]--To describe and understand the physical processes responsible for climate variability and predictability on seasonal, interannual, decadal, and centennial time-scales, through the collection and analysis of observations and the development and application of models of the coupled climate system, in cooperation with other relevant climate-research and observing programmes. To extend the record of climate variability over the time-scales of interest through the assembly of quality-controlled paleoclimatic and instrumental data sets. To extend the range and accuracy of seasonal to interannual climate prediction through the development of global coupled predictive models. <http://www.clivar.org/>

Global Drought Monitor--The Global Drought Monitor is a free internet application which monitors the severity of drought worldwide on an ongoing basis. The product will aid humanitarian relief by assisting warnings of potential food, water and health problems. The Global Drought Monitor will also benefit the general public, government and industry by improving awareness of droughts and their impacts. [Global Drought Monitor](#)

Global Warming: early Warning Signs--Global temperature in 1998 was the hottest in the historical record, and the temperature increase over the 20th century is likely to be the highest of the past millennium. Global average temperatures have warmed about one degree Fahrenheit (0.6°C) since 1900. The ten warmest years on record have occurred since 1987, seven of them since 1994. This map illustrates the local consequences of global warming. <http://www.climatehotmap.org/>

Intergovernmental Panel on Climate Change--The Intergovernmental Panel on Climate Change (IPCC) has been established by WMO and UNEP to assess scientific, technical and socio- economic information relevant for the understanding of climate

change, its potential impacts and options for adaptation and mitigation.
<http://www.ipcc.ch/>

International Research Institute for Climate and Society--The mission of the IRI is to enhance society's capability to understand, anticipate and manage the impacts of seasonal climate fluctuations, in order to improve human welfare and the environment, especially in developing countries. This mission is to be conducted through strategic and applied research, education and capacity building, and provision of forecast and information products, with an emphasis on practical and verifiable utility and partnerships.
<http://iri.ldeo.columbia.edu/>

Linking Climate Adaptation Network--The objective of the Linking Climate Adaptation (LCA) Network is to help communities, policy-makers, practitioners and academics share experiences and knowledge about adaptation to climate change. Funded by the Department for International Development and implemented by the Institute of Development Studies, the LCA Network is a web-based discussion forum with over 600 members from across the globe. The Network also aims to facilitate action research for climate change adaptation by vulnerable communities and host moderated online discussions on key adaptation topics.
<http://www.linkingclimateadaptation.org/>

National Climatic Data Centre--NCDC is the world's largest active archive of weather data. NCDC produces numerous climate publications and responds to data requests from all over the world. NCDC operates the World Data Center for Meteorology which is co-located at NCDC in Asheville, North Carolina, and the World Data Center for Paleoclimatology which is located in Boulder, Colorado. NCDC supports a three tier national climate services support program - the partners include: NCDC, Regional Climate Centers, and State Climatologists. [National Climatic Data Centre](#)

National Environmental Satellite, Data, and Information Service--NESDIS provides timely access to global environmental data from satellites and other sources to promote, protect, & enhance the Nation's economy, security, environment, & quality of life.
[National Environmental Satellite, Data, and Information Service](#)

National Lightning Safety Institute--(NLSI) is a non-profit, non-product advocacy of lightning safety for both people and structures: * Personal Lightning Safety means anticipating a high-risk situation and moving to a low-risk location. * Structural Lightning Safety means using various exterior and interior defensive systems in a detailed, site-specific process. <http://www.lightningsafety.com/>

NOAA Storm Prediction Centre--The Storm Prediction Center (SPC) is part of the National Weather Service (NWS) and the National Centers for Environmental Prediction (NCEP). Our mission is to provide timely and accurate forecasts and watches for severe thunderstorms and tornadoes over the contiguous United States. The SPC also monitors heavy rain, heavy snow, and fire weather events across the U.S. and issues specific

products for those hazards. We use the most advanced technology and scientific methods available to achieve this goal. NOAA Storm Prediction Centre

NOAA-CIRES Climate Diagnostics Centre--What are Climate Diagnostics, anyway? Most people hear the word "diagnosis" only when they go to the doctor. After taking your medical history, performing a physical examination and perhaps ordering some "diagnostic" lab tests, the doctor pronounces "You have the flu," or some other diagnosis. What we do at the Climate Diagnostics Center is similar in many ways, only our "patient" is the Earth. Instead of taking the body temperature we analyze the air and water temperature. Instead of the blood pressure, we look at measurements of atmospheric pressure. We don't look for diseases, but rather we identify naturally recurring atmospheric and oceanic features such as El Niño. While medicine is based mostly on the biological sciences, we use the laws of physics and chemistry to study weather and climate. Climate diagnostics -- studies of the interrelationships among climate variables -- are what we use to make sense of the myriad observations of the atmosphere and oceans. NOAA-CIRES Climate Diagnostics Centre

Science Policy Assessment and Research on Climate--Each day, in the face of deep uncertainty, millions of decisions are made that respond to and influence the behavior of climate. How does the nation's multi-billion dollar investment in climate research affect those decisions? How can the societal value of this scientific investment be enhanced? These are the core organizing questions for Science Policy Assessment and Research on Climate (SPARC) which conducts research and assessments, outreach, and education aimed at helping climate science policies better support climate-related decision making in the face of fundamental and often irreducible uncertainties. SPARC is a joint project of the University of Colorado's Center for Science and Policy Technology Research and the Arizona State University's Consortium for Science, Policy, & Outcomes, sponsored by National Science Foundation (NSF). <http://sciencepolicy.colorado.edu/sparc/>

Tropical Storm Risk--The Tropical Storm Risk (TSR) venture developed from the UK government-supported TSUNAMI initiative project on seasonal tropical cyclone prediction which ran from October 1998 to June 2000. The TSR consortium comprises experts on insurance, risk management and seasonal climate forecasting. The TSR industry expertise is drawn from Benfield, the leading independent reinsurance intermediary, Royal & SunAlliance, the global insurance group, and from Crawford & Company, a global claims management solutions company. The TSR scientific grouping brings together climate physicists, meteorologists and statisticians from the UCL (University College London) Benfield Hazard Research Centre and the Met Office. <http://forecast.mssl.ucl.ac.uk/shadow/tracker/dynamic/main.html>

U.S. Global Change Research Program [USGCRP]-- The U.S. Global Change Research Program (USGCRP) supports research on the interactions of natural and human-induced changes in the global environment and their implications for society. Participants in the USGCRP include: Agency for International Development; Dept. of Agriculture; Dept. of Commerce, Natl. Oceanic & Atmospheric Admin.; Dept. of Defense; Dept. of Energy; Dept. of Health and Human Services, National Institutes of

Health; Dept. of State; Dept. of Transportation; Dept. of the Interior, US Geological Survey; Environmental Protection Agency; National Aeronautics & Space Administration; National Science Foundation; Smithsonian Institution.
<http://www.usgcrp.gov/usgcrp/default.htm>