

An Assessment of Emergency Preparedness in Western Wisconsin

Gary D. Gilmore, MPH, PhD; William R. Schwan, PhD; Mary K. McLaughlin, PhD

ABSTRACT

Background: Emergency preparedness is important for our national defense. Preparedness has been prioritized in Wisconsin, but little has been done to gauge the knowledge, training, and resource gaps that remain—especially those that are necessary for a coordinated community response.

Objective: To determine the emergency preparedness knowledge, training, and resource needs of community-based professionals in Western Wisconsin, an assessment was conducted during 2004-2005, centering around a coordinated community response training exercise involving more than 100 civilian and military personnel.

Methods: The assessment used questionnaires, observation, and interviews to gather data. The target population was comprised of 10 professional cohorts: physicians, nurses, public health and mental health professionals, health educators, veterinarians, pharmacists, dental professionals, law enforcement, and emergency/fire personnel. The survey was delimited to 7 Western Wisconsin counties.

Results: The findings revealed that training needs existed across all cohorts, with the most acute training needs being decontamination procedures and communication. The highest awareness and knowledge levels occurred with physicians, nurses, and public health professionals. On-site coordination and communication systems were the weakest aspects of coordinated community response.

Conclusion: Overall, the findings indicate a need for more drills and exercises in short intervals, augmented by additional informational and fiscal resources.

INTRODUCTION

As a result of the terrorist attacks of September 11, 2001 and the *Bacillus anthracis* mailings that followed soon after, the need to prepare for any type of widespread emergency (i.e., weapons of mass destruction [WMD] event or natural catastrophe) has come to the forefront. To specifically meet the threat of potential WMD events, model legislation was enacted, and the implementation of policies is underway in all 50 states. The assessment of some of these policies is complete.¹⁻³ These statewide endeavors have trickled down to the region, county, and municipal levels in varying degrees. While some progress has been made, the failures associated with Hurricanes Katrina and Rita in 2005 underscore the necessity for not only emergency preparedness, but also coordination at all levels. To be efficient, as well as vigilant, response planning also needs an all-hazards approach as urged by federal and state authorities.

On August 8, 2004, *Operation Heartland Defense* was undertaken in Western Wisconsin as a field exercise to address coordinated, multidisciplinary community response. Participants in this multidisciplinary exercise were first responders from Western Wisconsin and the Canadian Pacific Railway, along with the US Army's 452nd Combat Support Hospital and the 315th Aeromedical Evacuation Squadron from Charleston Air Force Base in South Carolina. The magnitude and timing of this event allowed us to conduct an assessment of the knowledge, training, and resource needs of community-based professionals in the 7-county region of Western Wisconsin. The target population for this assessment was comprised of 10 professional cohorts: physicians, nurses, public health and mental health professionals, health educators, veterinarians, pharmacists, dental professionals, law enforcement, and emergency/fire personnel.

Author Affiliations: Graduate Community Health Programs, University of Wisconsin-La Crosse (Gilmore); Department of Microbiology, University of Wisconsin-La Crosse (Schwan); Western Technical College (McLaughlin).

Corresponding Author: Gary D. Gilmore, MPH, PhD, Professor and Director, Graduate Community Health Programs, University of Wisconsin-La Crosse, 201 Mitchell Hall, 1725 State St, La Crosse, WI 54601; phone 608.785.8163; fax 608.785.6792; e-mail gilmore.gary@uwlax.edu.

Table 1. Knowledge-Based Assessment of Emergency Preparedness Done in Western Wisconsin Pre-Operation Heartland Defense

Category	Mean*
Roles for self and others	3.85
Emotional impact	3.23
Different PPE equipment	3.20
Rapid response of responders	3.13
Risk communication	3.00
Mental health issues	2.87
Coordinated response	2.87
Decontamination	2.82
Cross-training	2.77
Impact on special populations	2.65
Isolation/Treatment following WMD event	2.64
WMD chemical/nuclear agents	2.48
WMD biological agents	2.22
Purpose of equipment (HAN, BLAST fax, etc.)	2.18
Manage/recognize a WMD event	2.18
Push packages	1.99
Legal issues	1.92

PPE= personal protective equipment.

*Values range from 1 (very low) to 5 (very high).

When responding to a widespread emergency, first line professionals need the appropriate knowledge, experience, and resources to work together effectively to provide a coordinated community response. For this study, our goal was to ascertain existing knowledge, experience, and resources related to: (1) the degree to which professionals are prepared to handle a widespread emergency, (2) unfulfilled training needs, (3) the planning and training capacity of organizations, (4) the degree to which a coordinated community response is possible, and (5) special or emerging training concerns.

METHODS

To complete the assessment, we used questionnaires, observations, and interviews. The questionnaires were mailed to all 10 cohorts of the target population. Two months later, observations were conducted of participants involved in the *Operation Heartland Defense* exercise. Additionally, telephone interviews were conducted 4 months after *Operation Heartland Defense* with a sample of the questionnaire respondents (12 out of the 60) in order to seek additional insights and clarifications.

The questionnaire measured the knowledge of first-line professionals, thereby indicating the degree to which they were prepared to handle widespread emergencies. It also determined gaps in knowledge, which were indicative of unfulfilled training needs. Further,

the questionnaire identified existing resources, indicating the planning and training capacity of organizations.

Observational data were gathered by 7 observers trained by the investigators. The observers recorded their observations of the *Operation Heartland Defense* exercise at 3 sites where the training exercise took place on August 8, 2004. The observers' notes and commentary focused on personnel, equipment, transportation, and communication. Video recording provided visual confirmation of the observer notes. Taken together, they indicated the degree to which a coordinated community response was possible.

Telephone interviews were conducted with a sample of the questionnaire respondents. The interviews served to identify any previously unidentified needs and assessed the impact that *Operation Heartland Defense* had on training. As a result, the interviews ascertained special or emerging training concerns.

Responses to all 3 procedures were compiled by entering the data into an Excel spreadsheet format, with descriptive statistics performed using Microsoft Excel and SAS statistical software packages.⁴

RESULTS

The following findings emerged based on the self-reports from 60 respondents out of the 166 professionals to whom the survey was mailed (36.2% response rate), the observations of the training exercise, and the telephone interviews.

Degree of Preparedness to Handle Widespread Emergencies

As noted in Table 1, respondents reported a rather high degree of knowledge of the roles they would have in the event of a disaster as signified by a mean of 3.85 (range: 3.70-3.88) out of 5, but they appeared to lack essential profession-specific information in key areas that would help them respond. Overall, a majority of respondents indicated they were knowledgeable about risk communications, could recognize a WMD event, and were willing to respond to such an event (3.00 and above). However, respondents had lower levels of specific information about decontamination (2.82), WMD chemical/nuclear agents (2.48), biological agents (2.22), the purpose of the Wisconsin Health Alert Network and BLAST faxes (2.18), as well as legal issues associated with WMD events (1.92). This trend continued in relation to knowledge about Push Packages, or "Packs" (1.99), which are caches of pharmaceuticals, antidotes, and medical supplies for rapid response in the early phase of an emergency,⁵ and legal issues (1.92). The re-

spondents appeared to be well informed about personal protective equipment (PPE) and its use (3.20). Ratings also were generally higher regarding the assessment of the emotional impact of a WMD/emergency event (3.23).

Four categories of knowledge were assessed in the interviews following the *Operation Heartland Defense* training exercise, as shown in Table 2. Continuing the trend from the earlier assessment, decontamination was the lowest in recognition, and knowing about the different types of PPE equipment had the highest recognition, followed by the purpose of the Wisconsin Health Alert Network (HAN) and BLAST faxes, and knowledge of Push Packages.

Unfulfilled Training Needs by Professional Groups

In general, the public health and medical care respondents provided higher ratings in most areas of preparedness. Most likely, this is in part a reflection of the resources that the state of Wisconsin has channeled into preparedness training throughout the state, including Western Wisconsin. However, areas where both of these cohorts still needed augmentation included the emotional impact of the event, knowledge about decontamination, and events involving nuclear/radiological agents.

Certain professional groups appear to need more information provided to them compared to other more informed and prepared groups. As shown in Table 3, both the fire/EMT and veterinarian respondents had the lowest indications of plans to manage epidemics, WMD events, or natural catastrophe. All respondents from public health reported having such plans in place. In terms of having protocols in place for incident command, all respondents from public health and mental health organizations reported having such protocols in place. When ratios were calculated revealing discipline-specific responses in terms of highest awareness/knowledge levels in emergency preparedness compared to the lowest, respondents aligned with public health organizations and hospitals had the highest ratio (8.5), followed by law enforcement (6.0), and mental health (1.8). Ratios fell below 1.0 for all other groups.

Planning and Training Readiness of Organizations

The assessment also examined organizationally focused emergency preparedness readiness (i.e., what preparedness steps had been implemented by each organization). Prior to the *Operation Heartland Defense* event, approximately half of the responding organizations had plans in place for key elements of disaster response as shown in

Table 2. Knowledge-based Assessment of Emergency Preparedness Done in Western Wisconsin Post-Operation Heartland Defense

Category	Yes*	No	Unknown	NA†
Different PPE equipment	91.7	8.3	0.0	0.0
Purpose of equipment (e.g., Health Alert Network)	75.0	25.0	0.0	0.0
Push Packages	45.4	36.4	19.2	0.0
Decontamination	26.7	46.7	26.6	6.6

PPE=personal protective equipment.

* Mean percent of responses.

† No answer.

Table 3. Organizational Preparation in Western Wisconsin Pre-Operation Heartland Defense

Category	Yes*	No	Unknown	NA†
Plan to Manage Epidemic, WMD Event, or Natural Catastrophe				
Administrator-Hospital/Clinic	70.0	20.0	10.0	—
Fire/EMT/Emerg. Mngmnt	22.1	73.1	—	3.8
Law Enforcement	40.0	60.0	—	—
Mental Health	33.3	33.3	33.3	—
Public Health	100.0	—	—	—
Schools	33.3	66.7	—	—
Veterinarians	16.7	66.7	16.7	—
Protocols for Incident Command				
Administrator-Hospital/Clinic	60.0	30.0	10.0	—
Fire/EMT/Emerg. Mngmnt	61.5	30.8	3.8	3.8
Law Enforcement	80.0	20.0	—	—
Mental Health	100.0	—	—	—
Public Health	100.0	—	—	—
Schools	50.0	33.3	16.7	—
Veterinarians	16.7	66.7	16.7	—

* Mean percent of responses.

† No answer.

Table 4. However, few of the responding organizations had plans or protocols for decontamination (20.0%), active surveillance/contact tracing (20.0%), and addressing the ethics and liabilities related to a WMD event (11.7%). Few organizations had tested their mass decontamination plan (15.0%). Two-thirds of the organizations had no bio-terrorism preparedness coordinator, and only 38.3% had a plan to coordinate with other organizations and levels of government. About two-thirds of responder organizations had participated in a mass casualty incident exercise before the August 8 Heartland Exercise. The post-*Operation Heartland Defense* assessment data are reflected in Table 5. These data show that readiness is highest in having a mass casualty plan, established protocols for incident command, and having a designated disaster coordinator. Preparation

Table 4. Organizational Readiness Assessment of Emergency Preparedness in Western Wisconsin Pre-Operation Heartland Defense

Category	Yes*	No	Unknown	NA†
Preparation				
Emergency operations plan	70.0	23.3	3.4	3.3
Protocols for incident command	61.7	30.0	6.6	1.7
Designated media coordinator	58.3	31.7	10.0	0.0
Communication plan (internal/external)	49.2	39.1	10.0	1.7
Facilities coordinated activities plan	45.9	43.4	10.9	0.8
Preparedness planning committee	43.3	51.7	5.0	0.0
Mass casualty plan	43.3	46.7	8.3	1.7
WMD or natural catastrophe plan	38.3	55.0	5.0	1.7
Disaster coordinator designated	25.0	63.0	1.7	1.7
Mass decontamination plan	20.0	68.3	10.0	1.7
Protocols surveillance/contact tracing	20.0	58.4	18.3	3.3
Ethics/liabilities of WMD event plan	11.7	68.3	20.0	0.0
Testing				
Involved in mass casualty exercise	65.7	31.7	3.3	0.0
Mass casualty plan	35.0	58.3	5.0	1.7
Engaged in active surveillance	20.0	56.7	18.3	5.0
Mass decontamination plan	15.0	71.7	8.3	5.0

PPE=personal protective equipment.

* Mean percent of responses.

† No answer.

Table 5. Organizational Readiness Assessment of Emergency Preparedness in Western Wisconsin Post-Operation Heartland Defense

Category	Yes*	No	Unknown	NA†
Preparation				
Mass casualty plan	83.3	16.7	0.0	0.0
Protocols for Incident Command	83.3	16.7	0.0	0.0
Disaster coordinator designated	75.0	25.0	0.0	0.0
WMD or natural catastrophe plan	50.0	33.3	16.7	0.0
Know location BLAST fax	50.0	50.0	0.0	0.0
Overall capabilities improvement	45.4	36.4	9.1	9.1
Check BLAST fax regularly	41.7	25.0	33.3	0.0
Mass decontamination plan	33.3	58.3	0.0	6.6
Ethics/Liabilities of WMD event plan	16.7	75.0	8.3	0.0
Testing				
Mass casualty plan	58.3	25.0	0.0	16.7
Mass decontamination plan	16.7	25.0	0.0	46.6

PPE=personal protective equipment.

* Mean percent of responses.

† No answer.

and testing of a mass decontamination plan and ethics/liabilities of a WMD event were the lowest categories. Again, the public health consortia appeared to be the best positioned, having only a few lower ratings that included decontamination and coordinating with other government agencies. Responses after *Operation Heartland Defense* increased for all of the categories, particularly the mass casualty plan preparation and designation of a disaster coordinator (Table 5).

Organizational Capacity

Findings regarding organizational capacity are presented in Table 6. More than half of the respondents reported mutual aid pacts with other facilities, sufficient PPE training, computers with internet access, adequate computer training, and provisions for the use of Statewide Mutual Aid channels. Less than a third of the organizations reported sufficient surge capacity, provisions for off-site acute care, available stockpiled equipment and

Table 6. Capacity (Resource) Assessment of Emergency Preparedness in Western Wisconsin Pre-Operation Heartland Defense

Category	Yes*	No	Unknown	NA†
Mutual aid pact other facilities	68.3	20.0	11.7	0.0
Sufficient PPE training	60.0	28.3	11.7	0.0
Enough computers with internet access	56.7	36.7	5.0	3.3
Adequate computer use training	55.0	36.7	5.0	3.3
Equipped Statewide Mutual Aid channels	53.3	18.3	26.7	1.7
Sufficient PPE for staff	50.0	31.7	18.3	0.0
Enough sites concurrent internet usage	48.3	46.7	3.3	1.7
Equipped distant education training	48.3	31.7	18.3	1.7
Established healthcare network	43.3	46.7	10.0	0.0
Sufficient surge capacity	31.7	18.3	48.3	1.7
Provisions off-site acute care	26.7	48.3	21.7	3.3
Stockpiled equipment/pharmaceuticals	26.7	60.0	11.7	1.7
Administer mass immunization clinic	20.0	61.7	16.7	1.7
Adequate dial-up or broadband capacity	18.3	46.7	5.0	1.7

PPE=personal protective equipment.

* Mean percent of responses.

† No answer.

pharmaceuticals, ability to administer mass immunization clinics, and adequate dial-up or broadband capacity. Some of the equipment-related questions, as aligned with the response data presented in Tables 4 and 5, did not apply to certain organizations that were queried, and thus were left blank.

Through the results from the interviews, a majority of respondents had tested their mass casualty plan and knew the purpose of the Health Alert Network (HAN). A greater awareness of PPE was noted. Most respondents had designated a disaster preparedness coordinator, had protocols for incident command, and would recognize that a biological, chemical, or nuclear terrorism event occurred.

Degree to Which a Coordinated Community Response Was Possible

Observational data from the *Operation Heartland Defense* training exercise resulted in the consensus that the emergency medical services personnel and the US Army were well organized. Other aspects of the exercise appeared to lack coordination. Several communication equipment and coordination problems surfaced that made it difficult to communicate within a site and between sites. At times, there appeared to be a lack of coordination between the military and the civilian workers. More equipment was needed, particularly backboards and cots for the injured. These observations were substantiated, to a large extent, by on-site video recordings. (Note: *Operation Heartland Defense* training video is available on DVD for training purposes through communication with the authors.) Overall, while “victims” during the training experience were at-

tended to in a timely manner, there appeared to be some missed opportunities for a greater communication and coordination of response efforts (e.g., supply limitations as noted above, and reduced coordination of air and land transportation). Such needs can begin to be addressed through the recommendations cited below. It also should be pointed out that because this was a training exercise, rather than a “real-time drill,” some areas for improvement (such as with the lines of communication) were projected to emerge so that they could be refined prior to actual emergency situations.

Special or Emerging Training Concerns

The survey respondents requested more practice (e.g., community decontamination, triage), more role-playing opportunities, more training (e.g., decontamination, triage, incident command) in short intervals of time (i.e., 2 hours or less), and additional work with early warning systems like those of the National Institute of Meteorology and Hydrology. Additional resources requested included ongoing funding, maintaining a regional preparedness consortium specific to the region’s needs, development of a Web site with a pop-up menu for references and a how-to guide, acquisition of new communication equipment that would interface across response systems, regional funding for a coordinated response, and funding for emergency medical services (EMS) that is separate from fire department budgets.

DISCUSSION

The results of this emergency preparedness study in Western Wisconsin were varied. The assessment not only identified certain gaps in training and organi-

zational capacity, but it also elevated the issue of the need for coordinated community responses in Western Wisconsin. Public health organizations and hospitals around the region appear to be well prepared for most of the items covered by the assessment. Hospital-based planning needs to have an all-hazards approach to deal with WMD events, as well as natural disasters.⁶ Importantly, across all disciplines there is still a need for cross-training, a critical part of a coordinated response. Preparedness in the community must include the implementation of a surveillance program that brings together all front-line providers, improving regional capacity to handle the flood of patients that would result regardless of the type of disaster, an ongoing detection system to recognize a WMD event, continual education and training with evaluation, and public awareness of the threat.⁷

A state of Wisconsin task force already has made many recommendations in regard to WMD preparedness,⁸ and these should be included in the education and training opportunities. Improvements in preparedness awareness and training appear to be making a gradual impact on Western Wisconsin, although there are still several areas that need further attention. The coordination of education and training prior to an emergency event can result in more collaboration across systems in Wisconsin (e.g., Public Health Consortia, medical care facilities in the Health Resources and Services Administration-HRSA regions, and Homeland Security area facilities). Such preparation could have a synergistic effect on communication, triage, decontamination, and transportation. In Charlottesville, Va, for example, a collaborative approach to community emergency preparedness has been undertaken to bring together public health, hospitals, and the school of nursing.⁹

For most first-line professionals in all fields, general knowledge appeared to be lacking in several areas, particularly regarding decontamination issues and general knowledge about WMD agents. Other surveys have also shown low scores regarding knowledge of WMD agents.^{2,3,10,11} Knowledge about, and use of, the Health Alert Network, Push Packages, and the strategic stockpile are clear examples of areas that need to be focused on in future education and training experiences. This includes hospitals and clinics that will likely comprise the preponderance of the front line response.

Some of the knowledge and training problem areas, like decontamination, are being more fully addressed by the state of Wisconsin since this assessment. Organizations still need to formulate and test their mass contamination plans. This is particularly a pivotal issue

if a WMD event, or catastrophic accident as proposed in the training exercise, should occur in Western Wisconsin. Lastly, organizations need to address the ethical and legal issues that might arise in the aftermath of any widespread emergency. Legislation has been enacted in Utah, Maine, South Dakota, and Indiana to deal with the legal issues that may surround a WMD event.¹²

The study further suggests that additional training may be necessary statewide for those involved in emergency preparedness (e.g., decontamination, general information about WMD agents), complemented with group-specific training experiences. A statewide survey done in Kentucky has demonstrated that regional differences exist in preparedness, and that deficiencies similar to those detected in our assessment (e.g., decontamination and surveillance) were found in that state.¹³

Overall, the findings from the current regional research need to be tempered by 2 limitations. First, the sampling process utilized convenience samples of professional groups, and thus neither the total data set nor the data from the professional entities are completely representative. The data are intended to provide preliminary insights into need and capacity issues related to emergency preparedness in the delimited region of Western Wisconsin. Secondly, the questionnaire data and the telephone interview information are self-reported, and thus subject to individual perspectives and interpretations for their respective organizations.

The data and insights amassed in the regional study indicate that prioritization of training is needed, and will be included in the authors' development of a federal grant proposal for the Health Resources and Services Administration subsequent research and project funding proposals. The proposals might address the development and evaluation of new training modules that address prioritized state and regional needs, as well as specified organizations and professional groups.¹⁴ Additional training may be needed to address special patient groups,¹⁵ or the mental health issues associated with a WMD event.¹⁶ Another example may include a Basic Principles 101 approach, where certain professional groups (e.g., law enforcement officers) will most likely have distinctive training needs in comparison with others (e.g., school professionals) engaged in emergency preparedness activities. The researchers also recognize the need to keep the public fully informed and up-to-date during times of emergency, thus communication and media relationships must be prioritized. Of additional consideration, follow-up measures for disaster-related health effects of survivors and emergency professionals need to be incorporated into advance planning efforts.¹⁷

Acknowledgments: The authors wish to acknowledge the support of the Wisconsin Area Health Education Center (AHEC) system, particularly the Southwest Wisconsin AHEC; the La Crosse Medical Health Science Consortium and its partner institutions: University of Wisconsin-La Crosse, Viterbo University, Western Technical College, Gundersen Lutheran Medical Center, and Franciscan Skemp Healthcare. Additionally, we recognize John Katrana and the staff of the La Crosse Medical Health Science Consortium. Robert Ritger, Coordinator, Wisconsin HRSA Region 4 provided helpful commentary on this report. Appreciation is extended to Master of Public Health and Microbiology candidates at the University of Wisconsin-La Crosse, particularly Jessica Boland, Kristine Buchholz, Birgitta Larson, and Ellen Schafer, who were involved in preparedness training observations, telephone interviews, and selected data analyses.

Financial Disclosures: None declared.

Funding/Support: None declared.

REFERENCES

1. Martin W. Legal and public policy responses of states to bioterrorism. *Am J Public Health*. 2004;94(7):1093-1096.
2. Franz DR, Zajtchuk R. Biological terrorism: understanding the threat, preparation, and medical purpose. *Dis Mon*. 2002;48(8):493-564.
3. Jacobs LM, Burns KJ, Gross RI. Terrorism: a public health threat with a trauma system response. *J Trauma*. 2003;55(6):1014-1021.
4. Jacobs LM, Burns K, Lane V, Ross J. Bioterrorism preparedness. *Conn Med*. 2003;67(2):95-101.
5. Gilmore GD, Campbell MD. *Needs and Capacity Assessment Strategies for Health Education and Health Promotion*. 3rd ed. Boston: Jones and Bartlett; 2005.
6. Pilch R, Zilinskas R. *Encyclopedia of Bioterrorism Defense*. New York: John Wiley; 2005.
7. Schultz CH, Mothershead JL, Field M. Bioterrorism preparedness. I. the emergency department and hospital. *Emerg Med Clin North Am*. 2002;20(2):437-455.
8. Flowers LK, Mothershead JL, Blackwell TH. Bioterrorism preparedness. II. the community and emergency medical services systems. *Emerg Med Clin North Am*. 2002;20(2):457-476.
9. Parvin K. Bioterrorism threat makes preparation essential. *WMJ*. 2002;101(2):14-16.
10. Glick DF, Jerome-D, Emilia B, Nolan MA, Burke P. Emergency preparedness: one community's response. *Fam Commun Health*. 2004;27(3):266-273.
11. Houser SH, Houser HW. Are we preparing health services administration students to respond to bioterrorism and mass casualty management? *J Health Adm Educ*. 2006;23(2):169-180.
12. Rose MA, Larrimore KL. Knowledge and awareness concerning chemical and biological terrorism: continuing education implications. *J Contin Educ News*. 2002;33(6):253-258.
13. Higgins W, Wainright C, Lu N, Carrico R. Assessing hospital preparedness using an instrument based on the Mass Casualty Disaster Plan Checklist: results of a statewide survey. *Am J Infect Control*. 2004;32(6):327-332.
14. Agency for Healthcare Research and Quality. Training of Clinicians for Public Health Events Relevant to Bioterrorism Preparedness. Summary, Evidence Report/Technology Assessment: no. 51. Publication no. 02-E007. Rockville, MD; December 2001.
15. Markenson D, Redlener I. Pediatric terrorism preparedness national guidelines and recommendations: findings of an evidence-based consensus process. *Biosecur Bioterror*. 2004;2(4):301-319.
16. Foa EB, Cahill SP, Boscarino JA, et al. Social, psychological, and psychiatric interventions following terrorist attacks: recommendations for practice and research. *Neuropsychopharmacol*. 2005;30:1806-1817.
17. Centers for Disease Control and Prevention. Surveillance for World Trade Center disaster health effects among survivors of collapsed and damaged buildings. *MMWR Morb Mortal Wkly Rep*. 2006;55(SS-2):1-18.

Wisconsin Medical Journal

The mission of the *Wisconsin Medical Journal* is to provide a vehicle for professional communication and continuing education of Wisconsin physicians.

The *Wisconsin Medical Journal* (ISSN 1098-1861) is the official publication of the Wisconsin Medical Society and is devoted to the interests of the medical profession and health care in Wisconsin. The managing editor is responsible for overseeing the production, business operation and contents of the *Wisconsin Medical Journal*. The editorial board, chaired by the medical editor, solicits and peer reviews all scientific articles; it does not screen public health, socioeconomic or organizational articles. Although letters to the editor are reviewed by the medical editor, all signed expressions of opinion belong to the author(s) for which neither the *Wisconsin Medical Journal* nor the Society take responsibility. The *Wisconsin Medical Journal* is indexed in Index Medicus, Hospital Literature Index and Cambridge Scientific Abstracts.

For reprints of this article, contact the *Wisconsin Medical Journal* at 866.442.3800 or e-mail wmj@wismed.org.

© 2007 Wisconsin Medical Society